On-Farm Sustainability Innovations and Institutional Support: Examples from California

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Outline

1. Research questions
2. Conceptual frameworks
3. Overview and trends of California agriculture
4. California sustainability innovations
5. Stakeholder linkages
6. Policy suggestions
Research Questions

1. How do (selected) farmers and organizations view sustainability?
2. What are the sustainability innovations they are adopting and why?
3. What are the impacts of these innovations on the growth of a sustainable food system?
Conceptual Frameworks

**Socio-ecological systems**
Rooted in the understanding that human behaviors profoundly impact and shape the biosphere and that human welfare is inextricably linked with the capacity of the biosphere to sustain us.

**Integrated Landscape Management**
Jointly addresses production, livelihood, and ecosystem priorities. A landscape approach is a social construct that aims to ensure the realization of local level needs among diverse stakeholders within the landscape while also considering goals and outcomes important to national governments or the international community.

**Rural-Urban Interface**
Heterogeneous mosaic of natural, agricultural, and urban systems affected by the material flows demanded by both rural and urban systems. Socially, the composition of stakeholders in these systems, such as farmers, farmworkers, urban consumers, and environmentalists, fluctuates over time leading to different and competing interests and perceptions.
California agriculture accounts for one third of vegetables and two thirds of nuts produced in the US.
Trends in California production

Intensification
- Emphasis on inputs and specialization

Consolidation
- Very large farms (making over $500,000 in sales) have grown by 1,000 since 2007
- Small farms (making less than $10,000 in sales) have shrunk by 5,000 since 2007

Aging farmer population
- Average farmer age increased from 50 to 58 over past 30 years

Barriers to entry
- New farmers lack access to land and capital

Environmentally destructive production
- Soil and water contamination, fossil fuel dependent
Examples of Sustainability Innovations

Valuation and payment for ecosystem services

Farmer incubator - land, and capital access

Aggregate supply chains to access high value markets
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<th>Producer</th>
<th>Regional</th>
<th>California State Non-Profit</th>
<th>California State Government Agencies</th>
<th>National/International</th>
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<td>Agriculture and Land-Based Training Association (ALBA)</td>
<td>Sustainable Agriculture Education (SAGE)</td>
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<td>Durst Organics</td>
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Table 1: Stakeholder Interviews by Scale. Interviewees are organized according to the majority focus of their operation or organization.
Barriers to Sustainable Farming

**CHEAP PRICE OF FOOD.** It’s kind of crazy that you can buy a whole chicken for $10 at Costco. How is that possible? It sets up a false belief that chicken needs to be super cheap [due to the way its subsidized]. That is part of the problem. It sets a standard of what people are willing to pay. Among industrialized countries, we spend the lowest percent of our income on food… and there’s no discussion about whether that should change.
Alexis Robertson, Skylelark Ranch

**FOOD SAFETY REGULATIONS.** They (regulators) don’t want to see hedgerows and weedy borders that perhaps support more life but looks un-kept. They’re driving farmers to a more sterile farm environment.
Paul Muller, Full Belly Farm

**GOVERNMENT BUREAUCRACY.** Government programs are hard to navigate and time consuming to apply for.
Paul Muller, Full Belly Farm
CONVENTIONAL CULTURE/MINDSET. In general, I think there’s a mindset about how we do things. And a lot of people have a lot of money invested in that – in equipment. We’ve simplified our operations and practices. The culture is focused on equipment, machinery, and making it linear – it’s a factory model. Kelly Mulville, Paicines Ranch

LACK OF CAPITAL. Mostly just a function of capital. There's nothing inhibiting me from doing anything, just the ability to afford the tools. A no-till drill is $30,000 used. Spencer Smith, Jefferson Center for Holistic Management

ATTRACTING YOUNG FARMERS. None of our kids want to do it. If we sell it, we’d sell it as a lifestyle place, but it would be much better to sell it to young farmers… There needs to be some program that allows young people to connect in a way that lets older people move on and young people [farm the land]... But right now when farmers are selling out, they’re selling to developers. Jim Durst, Durst Organics
Farmer and Farm Support Sustainability Metrics

**Social** - equitable, just, and vibrant communities

**Environmental** - healthy and productive agro-ecosystems

**Economic** - profitability, ability to adjust to market shocks, access to land, capital, information

**Institutional and Advocacy** - organizing and advocacy fostering resilient agricultural communities
Social Innovations

Capay Valley Vision

*The purpose was to gather the hopes and dreams of a community into a plan of action…to promote a collaborative vision for the future into a road map.*

2017 Action Plan

- Region-based non-profit since 2000,
- Branding ‘Grown’, ‘Made’ and ‘Inspired’ in Capay Valley,
- From ‘conflict to collaboration’ on Cache Creek Casino and relations with Yocha Dehe Nation

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Agricultural and Land-Based Training Association (ALBA)

Next generation of farmers? Mexican workers with field experience, ethics, additional training….and access to land/capital. ALBA Program Manager

- One year intensive training course in organic agriculture practices and business,
- Farm worker to farm entrepreneur incubator (about 25% of graduates, or 10-15/year, 120 since 2001),
- 100 acres of land with shared cost of equipment (start at ½ acre and 20% cost ..increasing over 4 years),
- ALBA business model - non-profit, raises grants from government, fees from farmers, contracts with local college
Environmental Innovations

Durst Farm - Sustainable Packaging Systems

Durst swayed the market to use these. So if you start to see these, it’s because Jim started it. And they’re beautiful too – you can see the produce and you don’t have to feel bad about it. Farm Manager

- Home designed recyclable carton packages.
- “Often the packaging contains more BTUs than the product inside of it. It’s ridiculous.”
- “Took 6 million plastic green baskets out of production.”

Paicines Ranch - Sheep/Vineyard Integration

- Sheep integrated into organic vineyards for weeding, cultivating, fertilizing, saving labor (year round)
- Soil organic matter and water infiltration improvements
- Electrified ‘offset system’ to keep the sheep from grazing the vines
- Market grapes to ‘natural winemakers’, many are women.

Agricultural/Food System Sustainability Innovations
Economic Innovations

**FarmLink**
- Connecting farmers to land
- Mission driven lending model
  - Community Development Financial Institution (CDFI)
- Integrated model:
  - Land access
  - Capital access
  - Education
  *Capital by itself won’t help you. You need to have the knowledge to successfully use that capital to improve your business.* Reggie Knox, Director

**Capay Valley Farm Shop**
- Connecting Capay Valley farmers to markets
- Quasi-cooperative
  - Aggregates and distributes goods
  - We try to “get farmers as close to the customer as possible” Thomas Nelson, President
- Business-to-business model
  - Local and fixed customers
  - Provides transparency and opportunity for feedback
Institutional and Advocacy Innovations

California Climate and Agriculture Network (CalCAN)

- Advocating for legislation that supports sustainable agriculture and addresses climate change
  - Coalition of farmers, ranchers, organizations
- 2006 California’s Global Warming Solutions Act
- Working to influence policy that provides resources for farmers

CalCAN advocates for policies to ensure the resilience and sustainability of California farms and ranches in the face of climate change.
Institutional and Advocacy Innovations

Community Alliance with Family Farms (CAFF)

- Non-profit organization that advocates for sustainable agriculture
  - Farmers form majority of board
- Started in 1978 to represent small farm interests in California policy
- Working with CalCAN to appropriate cap and trade funds for climate smart agriculture
Innovations to address climate and market risk at producer and regional scale

Climate Risk
- Farmer to Farmer Learning
- Collaborative Research with Universities
- Conservation Easements
- Groundwater Recharge
- Soil Carbon Monitoring
- Regenerative Soil Practices
- Cover cropping
- Low Till Practices
- Rotational Grazing
- Nutrient Recycling

Market Risk
- Co-operative
- Business Model
- Regional Branding
- Diversified Markets
- Direct Marketing
- Agro-tourism
- Value Added
- Stacked Enterprises
- Short Supply Chain
- Harvest to Order
Policy Implications

Support alternative supply chains and direct markets

Fund farmer incubators for immigrant/new organic farmers

Provide low interest loans and financial education for beginning farmers

Value and pay for agricultural ecosystem services at urban edge
Slide notes and references

Slide 2. Photo: https://agexpomag.com/the-summer-of-justifiable-discontent-for-california-farmers/
Slide 4.
- Socio-ecological systems: Folke et al. 2010, 2016; Berkes and Ross 2013; Holling 2001; Walker et al. 2004
- Integrated landscape analysis: LPFN 2012a; McNeely and Scherr 2003, 2007; Scherr 2014
- Peri-urban interface: Allen 2003; McGregor, Duncan and Simon 2012; Simon 2008
Slide 5.
Slide 6. Photo: http://calag.ucanr.edu/Archive/?article=ca.2017a0041
Slide 7. Map created by M. Elias (Google Maps)
Slide 11. Photo credit: Robin Marsh
Slide 13. Photo: Robin Marsh
Slide 14. Quote: Thomas Nelson, Capay Valley Farm Shop and Reggie Knox, FarmLink
Slide 16. Workshop presentation by Dave Runsten
Slide 17. Diagram created by M. Elias and R. Marsh
Slide 18. Diagram created by M. Elias and R. Marsh
Slide 19. Photo: Maya Riise