The Capay Valley, Yolo County, California

This case study is focused on the unique story of diverse marketing for agricultural products in the Capay Valley of Central California. Various nonprofit organizations and collaborative projects in the region are working together with local farmers and ranchers to develop marketing innovations to benefit the diverse production in the valley. Some of the challenges they have faced include finding year-round markets and jobs for workers, drought, navigating regional, state and national policy, and maintaining the ideals of the sustainable and organic agriculture movements. Some of the solutions discussed include growing a great diversity of crops, developing direct, cooperative and other innovative marketing strategies to sell those products, and educating urban consumers about the health, environmental, and taste benefits of fresh, locally produced foods.

The narrative includes information about and perspectives from several different farms and ranches in the valley, multiple area nonprofit organizations, and agents from the local university cooperative extension. We highlight farmers that use eco-agriculture practices such as organic production, integrated pest management techniques (IPM), water-conserving irrigation, and the cultivation of native plant habitats, hedgerows, and riparian vegetation. This case study is mostly based on phone and in-person interviews with participants from January to April of 2009.

The Setting

Yolo County, the broad setting for this case study, is located in North East Sacramento County, directly North of Solano County and North West of Napa County.[1] Yolo County is situated within California's Northern Sacramento Valley and the Sacramento River Delta. The county's leading industry is agriculture, containing 550, 407 acres of farmland, which makes up 83 % of the county's total acreage[2]. About 12 % of growers in the county are organic, 7% of all county production. The Capay Valley, our specific location for the study, is in the North West corner of Yolo County. It is located in the eastern foothills of the Coast Range, containing an abundance of wildlife, rolling hills, creeks, vistas, and heritage oaks.

The Valley is abundant in farms and ranches growing organic and sustainable products and cultivating diverse cropping systems. A varied rural community, the Valley is home to small and medium-scale farmers and ranchers, immigrant farm workers, townspeople, and a Rumsey Band of Wintun Indians. Agricultural producers in the valley grow over

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[1] See http://www.yolocounty.org for more information on Yolo County. For maps and GIS data of the region **see attached pdf "Yolo.map",** http://www.yoloconservationplan.org/maps-and-documents.html and http://bioregion.ucdavis.edu/mapping/gissmpl.html.

[2] Yolo County UC Cooperative Extension Annual Report, 2009, See http://cayolo.ucdavis.edu for more information

50 different types of agricultural products, including fruits and vegetables, wheat, wine, beef, lamb, walnuts, and almonds.

There has been an active movement by local farmers, ranchers and community organizers over the past thirty years to maintain the rural landscape and encourage ecologically based agriculture. The landscape of rolling hills and a narrow valley is not conducive to large-scale mono-crop farms. It has been a hub of organic and diverse crop farming since the beginning of the organic movement in the 1970s. As the popularity of sustainable and locally grown products has increased, so has the number of farms growing organically in the Capay Valley. There are still many conventional nut tree orchards, row crop and mixed farms in the Valley, but even some of these growers have started to plant hedgerows and adopt other integrated pest management strategies to attract beneficial insects and restore and conserve the local ecosystem.

Major expansion of the local tribe's casino has been an area of conflict in the Valley community. Increasing traffic from casino visitors is an issue for farmers getting to markets as the only road through the Valley is a two-lane road.[3] Capay Valley Vision, a nonprofit organization discussed below, has been instrumental in organizing discussions and collaboration among various Valley stakeholders with the goal of developing a mutually beneficial relationship between the agricultural community and the casino's tribal leadership.

Challenges

The main challenge for the Capay Valley to thrive as a diverse agricultural landscape is the ability of farmers and ranchers to **secure a diversity of year-round markets** for its products. The farmers and ranchers highlighted in this case study are using innovative growing and marketing strategies. They cultivate a diverse mix of agricultural and livestock products as a solution to fit multiple markets. The nonprofit organizations and researchers we have identified are supporting these growers by providing advocacy, institutional support, and scientific and economic information on agricultural production, ecosystem management, and marketing.

Growing a diversity of products is beneficial in managing both economic and ecological risk. A diverse agricultural system enhances local ecosystem services such as wild bee pollinators, recycling of nutrients, controlling the microclimate, regulating hydrological

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[3] For more information about the casino see www.cashecreeekcasino.com. For information about the Rumsey Band of Wintun Indians see http://www.cachecreek.com/about_us/rumsey_band.aspx.

processes and desirable organisms, and detoxification of chemicals in the inputs[4]. Farmers also eventually enjoy lower costs as they need to purchase fewer off-farm inputs. Crop diversity provides a farm with a natural form of "crop insurance," said Judith Redmond, co-owner of Full Belly Farm. As an example, Judith cites that in 2007 Full Belly lost its entire peach crop to a pest, but continued to survive and thrive because of its many other fruit and vegetable crops and capacity to maintain year-round provisions for its diverse markets and customers. A diverse cropping system also allows Full Belly and other Capay Valley farms to provide full year employment for farm crews, contributing to a stable community and stronger relationships with the workers and their families.

An additional challenge for California farmers is obtaining **water needed for irrigation**. Farmers at Full Belly Farm and Capay Organics both mentioned water as a major concern. 2009 is the third consecutive year of drought in California, and for the first time this summer flow will be reduced from the Cashe Creek Dam, their major source of irrigation water. This may mean cutting back on crop cultivation by as much as 25%, also leading to reduced employment for their crews.

Many farmers discussed their concern about the growing **disconnect between rural and urban people** and the need to educate urbanites about where their food comes from. Some stated that navigating government policy on agriculture and rural regulations is challenging, and that farmers are not well represented in the policy decision-making. Fred Manas of Manas Ranch argued that a main challenge for farmers today is **too much government regulation**, especially from the Environmental Protection Agency (EPA). He believes that environmental regulations are more suited to industry; "when they are applied to agriculture, they don't always make sense". Organizations, such as the California Alliance with Family Farmers (CAFF), are helping to provide farmers with a voice in policy making.

When asked if the state of California will want agriculture in its future, Redmond said that it would be decided by urban policy makers influenced by urban people. She argued that all people, urban and rural alike, need to face the question of whether we want and need farms in California. We must also face the question of **who will take over the next generation of farming.**

Some farmers specifically discussed the challenges of producing organically, as it requires more labor to replace the synthetic inputs used in conventional growing, and **labor intensive practices in California are more costly** than use of agrochemicals. For

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[4] For information on agroecological practices: http://agroecology.berkeley.edu/,
For articles on ecosystem services, crop pollination and agriculture see Kremen et al:
http://nature.berkeley.edu/kremenlab/Articles/Insects%20as%20Providers%20of%20Ecosystem%20Services%20-%20crop%20pollination%20and%20pest%20control.pdf;
http://nature.berkeley.edu/kremenlab/Articles/Ecosystem%20services%20and%20dis-services%20to%20agriculture-%20Zhang,%20Ricketts,%20kremen.pdf

some products, farmers do not see enough return on the higher cost of production to justify growing organically. This is the case for some high quality or "boutique" products such as premium olive oil. When consumers are already paying a premium for a locally produced high quality product, they may not be willing to pay more for the organic certification. These differences show that there is sometimes **ambiguity between categories such as locally grown, organic, and sustainable when marketing products**. The differences between these kinds of labels and how to prioritize them in decision making for both consumers and producers is part of an ongoing discussion in today's fresh and local food movement. The Capay Valley, with its abundance of organic and sustainable producers, is at the center of such debates and discussions.

Some farmers also see **maintaining the core values of the original organic movement** as a challenge. Thaddeus Barsotti of Capay Organics argues that organic standards have been degraded now that nearly every major agriculture company has an organic brand. The organic label no longer ensures practices that enhance biodiversity. Corporate organic production of trees, fruits and vegetables is primarily large-scale monoculture with little attention given to ecological or social sustainability.

Thaddeus also argues that a major bottleneck for improving producer-consumer relations is in the mainstream **supply chain and distribution of produce** which limits consumer direct access to farmers. He proposed widely expanding Community Supported Agriculture (CSA)[5] programs as an alternative to mainstream distribution. Through CSAs, participating consumers can develop a keen understanding of where their food comes from and how it is grown.

Marketing: Direct and Cooperative

Agricultural direct marketing and sales involve a direct connection between the grower and the consumer. This contrasts with marketing and sales through middlemen, commercial advertising and large agricultural distribution firms and other forms of third party media and sales. Direct marketing includes farmers markets, restaurant-clients, CSAs, U-pick and farm stands, and "farm to school" and other institutional markets. Some farmers in the Capay Valley, such as Capay Organics and the Capay Valley Growers cooperative, have branched out into their own direct market retail operations. These include a retail store in the San Francisco Ferry Plaza Building and one in a shopping center near to Capay Valley. Some direct markets, such as CSAs and farmers' markets, require a diverse year-round supply of crops to keep consumers connected with farms throughout the year.

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[5] Community Supported Agriculture or CSAs are programs where customers "subscribe" to a particular farm. The customer, or member, pays a fee to the farm upfront, usually in the beginning of the growing season, and receives a weekly box, bag or basket of produce. The contents vary depending on the season and availability. Boxes are either picked up by members at the farm, delivered from the farm to a pick-up spot at a farmers' market, community center, school or distribution house, or are delivered directly to members' homes.

Yolo County has the highest percentage of agricultural direct and Internet sales of any county in the United States. The Capay Valley contributes heavily to that percentage.[6] However, direct marketing makes up less than two percent of the larger Sacramento Valley's total agricultural production value[7].

Agricultural direct marketing is part of the growing awareness about and movement towards local and sustainably grown food, as promoted by regional *Buy Fresh Buy Local* campaigns.[8] Direct marketing retains higher value of the produce for the farmers, rather than with intermediaries along the supply chain, and can reduce farmers' costs for transportation and shipping. Direct marketing also enables farmers to harvest at the best time to provide consumers with the highest quality, freshest perishable products Some growers in California were initially attracted to direct markets for economic reasons (to avoid profits going to "middlemen"), and subsequently started growing organic in response to consumer demand.[9]

Cooperative marketing differs from direct marketing in that multiple farmers or ranchers work together to sell their products. Historically, in California, agricultural marketing cooperatives have helped small-scale farmers sell their product by transporting and marketing together under one large brand name, for instance, the cooperative Blue Diamond (almonds).[10] Around the turn of the nineteenth century, cooperatives were especially successful in the fruit sector, standardizing the quality of products and facilitating outside advisors to consult on fertilizers and pest control. By the 1920s,

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[6] Yolo County Cooperative Extension Annual Report 2009, See also "The Role of Direct Marketing in California" Shermain D. Hardesty, Giannini Foundation of Agricultural Economics, University of California, Berkeley, Online March 2008. http://www.agecon.ucdavis.edu/extension/update/articles/v10n3_2.pdf
and "Yolo County Producers Lead the Nation in Direct Marketing" Shermain D. Hardesty, Giannini Foundation of Agricultural Economics, University of California, Berkeley, Aug 2005. Online March 2008.

[7] For more information on agricultural marketing in the Sacramento region see The Sacramento Local Region Market Assessment by The Sacramento Area Council of Governments (SACOG)
http://www.sacog.org/rucs/wiki/index.php/Sacramento_Region_Local_Market_ssessment

[8] For more information on the local and organic food movement see The National Buy Fresh Buy Local Campaign http://www.foodroutes.org/buy-fresh-buy-local.jsp . Also see www.buylocalca.org for more information about to movement for local food in California specifically.

[9] Guthman, Julie. 2004. *Agrarian Dreams: The Paradox of Organic Farming in California*. Berkeley: The University of California Press.

[10] Henderson, George L. 1998. *California and the Fictions of Capital*. Philadelphia: Temple University Press.

growers' marketing cooperatives and associations made up 50 percent of the state's marketed agricultural products. Although the term cooperative may be associated with socialist or utopian agrarian movements, in California these organizations were purely capitalist in motivation. They were profit-making associations with the goal of getting products to market in the most efficient way. These cooperatives actually paved the way for large agribusinesses by integrating growers for large-scale distribution[11].

The Capay Valley stands out in California for its direct and diverse marketing programs and organizing at a cooperative level. The farmers and ranchers we interviewed have helped to create and promote community organizations and locally based agricultural marketing cooperatives to connect growers with consumers and to foster cooperation and identity within the community.

The nonprofit Capay Valley Vision[12] has worked to bring larger and more established farms together with smaller and newer farms to develop a regional brand called, **Capay Valley Grown**[13]. The purpose of the brand, and its signature landscape logo, is to market the Valley as a place that consumers recognize as providing sustainable and high-quality products. The Capay Valley Growers[14] cooperative trucks products from multiple farms in the Valley to farmers' markets, and is building new market relationships with a range of private and public institutions. The Community Alliance with Family Farmers (CAFF)[15] also supports a program to cooperatively truck produce to institutional markets.[16] More details on these organizations follow in a section below.

The Innovators and Innovations

Practitioners in this case study include farmers and ranchers, nonprofit and advocacy organizations, and university researchers and extension workers. This case study includes only some of the many innovative farmers and ranchers in the Valley. More farmers and ranchers are listed on the websites for Capay Valley Vision, Capay Valley Growers, and the Buy Fresh Buy Local Campaign of California. Other researchers and research projects may be found on the Yolo County Cooperative Extension website and by searching related University of California department sites. More personal stories

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[11] Walker, Richard A. 2004. *The Conquest of Bread: 150 Years of Agribusiness in California*. New York: The New Press.

[12] http://www.capayvalleyvision.org/index.html

[13] http://www.capayvalleygrown.com/

[14] http://capayvalleyfarmshop.com/

[15] http://www.caff.org/

[16] All of these organizations are discussed more thoroughly in the Innovators Section below.

from the innovators can be heard on the accompanying case study video, found on the Agriculture Bridge website.

Farmers and Ranchers

This case study features brief descriptions of five innovative farms and ranches. They are a mix of certified organic and "sustainable" growers that practice crop rotation, integrated pest management (IPM)[17] and other low input practices. Although most of the farmers discussed the benefits of direct marketing, one farmer, Jim Durst at Durst Organic Growers, differed in his preference for wholesale marketing. The farms and ranches we visited fall into the category of medium-size producers, ranging from 200-500 acres[18]. They are all family owned and operated, hiring outside labor to differing degrees. Although all of the farmers currently farm full time, two of them are retired from prior careers, which provide them with health benefits and retirement pay. All of the farms worked with the organizations Capay Valley Vision, Capay Valley Grown, and/ or Community Alliance with Family Farmers at varying levels and all the farmers espoused the benefits of building the visibility of the Valley though regional branding and marketing.

Full Belly Farm[19] is a 200-acre certified organic farm located an hour northwest of Sacramento in Capay Valley. Full Belly has been farming using organic practices since 1985 and is certified by California Certified Organic Farmers (CCOF). They grow a wide diversity of crops including fruits, nuts, vegetables, herbs, flowers, as well as raising lamb for meat and wool. Their products are marketed both wholesale and retail, but they prefer to sell through direct markets. They sell to restaurants (including the world famous Chez Panisse in Berkeley), at farmers markets, and through their 500 member-Community Supported Agriculture program. Both the CSA and the farmers markets forge a direct connection between the farm and the people who buy and eat their produce. Some CSA baskets are donated weekly to homeless shelters and other non-profits serving poor communities with little access to fresh, high-quality produce.

At Full Belly there are four owners that all farm full time. They also support a crew of skilled workers year-round, and additional temporary workers during harvest season. The owners have designed their cropping system and farm maintenance schedule to ensure full-time year-round work. Organic fruits and vegetables have high labor needs for

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[17] IPM means they use a minimal amount of "softer" chemicals, which are less harmful to the ecosystem and reduce the cost of off-farm inputs.

[18] The definition of a medium-scale producer varies; some definitions include farms and ranches up to 1000 acres. Thaddeus Barsotti, of Capay Organics, told us that he believes that the medium size family farm, which he defined as 300-1000 acres, is the most feasible size for the future of US agriculture. He argued that most small-scale family farms (under 100 acres) cannot compete in the marketplace.

[19] http://www.fullbellyfarm.com/index.html

picking, washing, packing, and delivery. These all require skilled labor. The owners invest in their workers, and see that investment returned to the farm in careful food safety and quality control.

Manas Ranch[20], a fruit and beef producer, sells exclusively on the Internet and at their on-farm store. They grow seven varieties of peaches, as well as apricots, cherries, and apples. They are the largest peach grower in Yolo County (60 acres). Their peaches and homemade jams are mostly sold on-farm at their store. They send out cards to their 5,000-person mailing list as fruit goes into season. They grow peaches conventionally, using IPM techniques. Their beef contains no hormones or antibiotics and is grass-fed and grain-finished.

Fred Manas, the owner-operator, is also the executive director of the Yolo County branch of the United Farm Bureau. His grandparents started as farm workers, or "fruit tramps," following the harvests around California. They eventually bought land and grew apricots. Although Fred does not farm his family's land, as it was sold outside the family because it was too expensive for him to purchase, the Manus Ranch is in the same region. Fred Manas, along with other ranchers and Capay Valley Vision, are working to build a USDA certified cut and wrap facility to start locally processing animal products produced in the Valley. This will make meat distribution much easier for the ranchers. He has been working with Capay Organics (see below) on the idea of including meat in their CSA boxes.

Taber Ranch[21], now professionally managed by a former UC Davis extension agent, has been a family operation in the Valley for over 130 years, ranching on about 500 acres. They produce olive oil, almonds, and wine grapes. They sell their almonds to a local wholesale distributor and their olive oil by direct sales. The farm also has a beautifully restored and landscaped event center that they rent for weddings and other celebrations, holding about 18-20 events annually.

Taber Ranch is also a conventional producer using IPM techniques. For Taber Ranch, producing organically, which requires more labor, is cost-prohibitive. They sell high-quality olive oil to "boutique" processors for sale in small quantities sold at premium prices. Consumers are not willing to pay significantly more for the product to be organic as well.

Capay Fruits and Vegetables[22] is a second-generation 350-acre organic farm. They are the largest organic farm in the valley. They have an 800 member delivery based CSA and a retail market store in the San Francisco Ferry Plaza Building. In order to pay the high rent at the store they include high value products such as wine and cheese purchased both

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[20] www.manasranch.com

[21] http://www.taberranch.com/

[22] http://www.farmfreshtoyou.com/index2.php?cmd=aboutourfarm

within and outside Capay Valley, in addition to fresh produce from the farm. Their CSA includes a mix of products from many farms in the region in order to offer the most diverse selection for consumers. They also offer a variety of "types" of CSAs to meet consumer needs, e.g. mixed fruits and vegetables, easy to prepare (no cooking required), vegetables only, fruit only, and Capay Valley only.

Four brothers currently operate the farm, all with different responsibilities, from production to sales. Their parents started the farm in 1976 while students at UC Davis. They were part of the early grassroots organic movement, helping to start the university's student farm and the Davis farmers' market. They bought the farm because they thought it would be a good place to raise a family. When their mother passed away in 2000, the farm was 100 acres, and the brothers took it over full time.

Durst Organic Growers[23] are fourth generation growers in the valley, cultivating 500 acres. Alternatively to the large variety of products offered by some organic farmers, the Dursts have found focusing on a few select crops to be the best strategy. Their crops include asparagus, melons, watermelons, cherry, heirloom, and Roma tomatoes, barley, and winter squash. Durst is the only grower in the case study that uses a middleman for marketing and sells exclusively wholesale. They claimed they get the best prices through their broker and are better able to take advantage of regional and national markets.

The grandfather of Jim Durst started the farm in the 1880s. They transitioned to organic in 1983. Durst sees the change as a generational paradigm shift, from heavy chemical use to holistic stewarding of the land. Organic methods have improved the quality of their soil and the health of the surrounding ecosystem. They have adopted precision technology for the application of organic fertilizers and water via a drip "fertigation" system. Sensors in the soil are hooked up to their farm's website that reports the daily water and nutrient needs of each plant. The technology has brought down input costs and prepared them to face California drought conditions with little impact. The cost savings from these techniques have been more significant that the price premium from organics. Durst explained that it took many years to learn how to grow organically successfully, including shifting production to fields with the best soils. During the first years they lost a lot of money. Although the organic market has grown, the organic price premium has gone down. Durst is able to succeed financially and thrive as they have learned to manage their costs, reduce use of scarce inputs, conserve ecosystem services, and sell to major markets.

Nonprofit Organizations

Three nonprofit organizations and collaboratives work in the region. All of these organizations work with both organic and non-organic farmers, promoting sustainable family farms and direct marketing.

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[23] http://durstorganicgrowers.com/index.html

Capay Valley Vision[24] (CVV) is a nonprofit organization working to incorporate the diverse voices of the Valley community into a collaborative plan for the future of the region. They strive to bring stakeholders together around needed economic development and change in the Valley as well as to maintain the rural character, agriculture, history, and natural environment. CVV was started during a casino expansion when there was a lot of tension between the local tribe and farmers in the valley. The tribe has become the largest property owner in the Valley by slowly expanding their bingo parlor to a full casino and resort center. Issues such as increasing traffic, road expansion, and electricity use have created conflict between the tribe members and other residents in the Valley. CVV have acted as an intermediary between the tribal casino development and local farmers and community members, helping to arrange for the casino restaurants to buy produce from Valley farmers. They are funded by grants and fund-raising events that they sponsor throughout the Valley.

CVV has developed the Capay Valley Grown regional brand[25], explained in the marketing section above. There are no formal requirements or guidelines for a grower to use the label, except that they must be located in the Valley and practicing sustainable land stewardship. Products do not need to be grown and processed 100 % in the valley. The brand is meant to develop a value for partners in creating a region for sustainable farming. The CVG label grew out of sense that not all farms were large enough to have their own label to push out their message. The label attaches well-known farmers to the lesser-known farmers. It also benefits large and medium farmers by increasing a sense of community and visibility for the Valley.

The CVV Agriculture Task force meets bi-monthly and organizes projects, such as developing agricultural infrastructure and cooperative marketing plans for incorporating the Capay Valley Grown label and lobbying for government support. It is a space that can act as a soundboard for all farmers in the Valley, as well as a place to share resources and information, including innovative production and marketing ideas and practices.

Capay Valley Growers[26] (CVG) is a collaborative farm venture owned and operated by a collective of 42 Capay Valley farmers and ranchers. They work on developing direct marketing projects to benefit Valley producers, building on the CSA model. Their current projects include working with the Palo Alto local government to operate a Palo Alto hybrid farmers market and CSA, featuring products from Capay Valley farms. They are also developing plans to work with institutional wellness programs, marketing produce to corporations, schools, hospitals and other institutions. Wellness programs are corporate or institutional programs that support locally grown fresh food as part of a larger plan encouraging employee or client health. Institutions may provide clients with a location to pick up a CSA, subsidizing the cost for the boxes. They may also purchase local produce

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[24] http://www.capayvalleyvision.org/

[25] http://www.capayvalleyvision.org/capay_valley_grown.html

[26] http://capayvalleyfarmshop.com/

for their cafeterias or cafés. These programs are proposed to have long-term health benefits for employees and clients, saving costs on health insurance coverage for the institutions.

By bringing many growers' products to market cooperatively, CVG helps smaller farmers by reducing their marketing and distribution costs. They have a strong community of growers working together with diverse urban partners. This has helped getting the group started and allowed farmers to benefit from the direct supply model. Their vision for the future is to continue to bring together networks of consumers and institutions, building on the model's success to date. In order for people with different incomes to access fresh and local food, more people need to know how to cook fresh foods. Institutions such as schools, hospitals, and local governments need to become new markets for local food.

The Community Alliance with Family Farmers (CAFF)[27] is an organization working to bring together rural and urban people to foster family farms that are ecologically, socially and economically sustainable. They started as a merger of two groups, a farm group and an activist group. They use the same definition of a "family farm" as the national family farm coalition. This definition includes no size requirement, only that the family must be engaged in the farming enterprise. Almost all farms in California are family operations. Despite the industrial nature of California farming, few are corporately owned.

CAFF's primary mission is to defend and support the family farm, regardless of their production practices but actively support sustainable farming. They see sustainable farming as a long-term process, involving farmers, consumers, and supportive policies collectively. They have programs to encourage farmers to reduce chemical use and to encourage consumers to support policies that benefit family farmers. Their Growers Collaborative project coordinates family farms to sell local fruits and vegetables to public and private schools, colleges, hospitals, and corporate cafeterias.

Their California *Buy Fresh Buy Local*[28] campaign, supported by the Kellogg Foundation, began in Santa Cruz, California. They have recently grown in the San Francisco Bay Area and Sacramento and are working on expanding to Los Angeles. The campaign is not a brand, but a slogan to encourage supporting local farms and associating quality with freshness. The campaign is operating other states as well, supported by other organizations[29].

Mid-size farms may not be the most profitable in the future, and are currently the fastest declining size of farm, said CAFF executive director Dave Runsten. At the same time there has been a proliferation of small, intensive growing farms. As the price of food

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[27] http://www.caff.org/

[28] For *Buy Fresh Buy Local* California see http://guide.buylocalca.org/,

[29] For the nation-wide *Buy Fresh Buy Local* campaign see http://www.foodroutes.org/buy-fresh-buy-local.jsp

declines, some farmers may need more land to be economically viable. The scale of a profitable farm depends largely on the cropping system. For example, strawberry farms can be profitable on small plots, but corn, wheat, and alfalfa require more land.

Citizens and consumers need to be concerned with artificially cheap food in the United States, that does not include the cost of environmental and social externalities. Consumers must be willing to spend more money for healthy sustainable food and support direct marketing sales, where more of the income remains with the farmer.

The Sacramento Area Council of Governments (SACOG)[30] is working to develop a Rural Urban Connections Strategy (RUCS) to increase local marketing for regional farmers and ranchers in six counties. They recently completed the first phase of their work, which was to produce a Sacramento Region Local Market Assessment[31].

Research/ Extension

We interviewed university researchers and extension professionals to highlight how the University of California is collaborating with farms to develop economic viability and maintain ecological sustainability. Two of the researchers that work in the Capay Valley are Professor Claire Kremen at UC Berkeley and Professor Louise Jackson at UC Davis. Organizations highlighted below, including The University of California Sustainable Agriculture Research and Education Program (SAREP) and the University of California Cooperative Extension services, help link farmers in the Capay Valley with researchers, such as Kremen and Jackson, that may do on-farm experiments and provide useful information. Many farms in the Capay Valley do work directly with university researchers and extension, although some, especially organic and sustainable growers, get more information from other farmers. A lot can be learned from neighboring farms, as well as on-farm trail and error experiences. CVV's Agriculture Task Force is one venue for farmers' to share techniques and ideas.

As a conservation biologist, professor Claire Kremen[32] seeks mechanisms for slowing or preventing the loss of biodiversity. In Northern California and New Jersey, she is investigating the inter-relationship between land use practices, wild bee communities and pollination services on farms. In her research she looks at the role of wild bees in crop pollination and how farmers can reintroduce and maintain natural pollinators, cultivating diverse cropping systems. Diverse farms like Full Belly don't need to rent bees, as they develop healthy habitats that provide their own ecosystem services, including pollination.

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[30] The Sacramento Area Council of Governments (SACOG)'s Rural Urban Connections Strategy (RUCS) http://www.sacog.org/rucs/

[31]The Sacramento Local Region Market Assessment by SACOG http://www.sacog.org/rucs/wiki/index.php/Sacramento_Region_Local_Market_ssessment

[32] Claire Kremen's Lab and Research Group http://ecnr.berkeley.edu/facPage/dispFP.php?I=610,

In contrast, on conventional/homogenous landscapes they have lost all the wild bees and farmers need to rent honey bees. This is a risk to farmers as there are currently problems[33] with the honeybee population reproduction. Pollinators are critical to fruit and vegetable production; 75 % of crop species depend on annual pollinators to some degree. Kremen works with farmers that grow conventional monocrops, but are building hedgerows to develop ecosystem diversity and wild bee habitat. In only a couple of years she has seen major change on such sites, as biodiversity and ecosystem services are returning and the landscape is rediversifying.

Louise Jackson's[34] lab at the University of California, Davis, works in the Salinas and Carmel Valleys of California in addition to Yolo County. They are currently conducting a farmscape study in Yolo, showing how agricultural practices such as hedgerows and riparian corridors affect farm-level productivity, nutrient cycling, and economic profitability, as well as biodiversity and the quality of other ecosystem services[35]. The analysis will be used to assess tradeoffs for land use decision-making. This study will increase understanding on how different landscapes and land uses affect plant carbon inputs, soil microbial composition, activity, and depth distribution, and ultimately soil carbon sequestration. In a related project, the lab is also engaged in a project looking at the effects of climate change on agriculture.[36] Jackson coauthored "Climate Change, Challenges and Solutions for California Agricultural Landscapes,[37]" a report prepared for The California Energy Commission and California Environmental Protection Agency, with Timothy Cavagnaro and Kate Scow.

The UC Sustainable Agriculture Research and Education Program (SAREP)[38] provides leadership and support for scientific research and education in agricultural and food systems that are economically viable, conserve natural resources and biodiversity, and enhance the quality of life in the state's communities. SAREP serves a wide range of California stakeholders; farmers, farm workers, ranchers, researchers, educators, regulators, policy makers, industry professionals, consumers, and community

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[33] Video on Kremen speaking about the Wild Honeybee Pollination Crisis http://nature.berkeley.edu/blogs/news/2009/01/video_honey_bee_pollination_cr.php. Also see **link to pdf "Kremen Pollination" and "Kremen Ecoyststm Services" for more information on her research.**

[34] Louise Jackson's Lab and Research http://groups.ucanr.org/jacksonlab/index.cfm

[35] **Link to pdf "Jackson.EcosystemServices" and "Jackson.etal.Biodiversity"**

[36] See http://climatechange.ucdavis.edu/agriculture.html for more information on climate change and agriculture.

[37] See link for article: http://www.energy.ca.gov/2005publications/CEC-500-2005-189/CEC-500-2005-189-SF.PDF

[38] http://www.sarep.ucdavis.edu/

organizations. Tom Tomich, the director SAREP and The Agricultural Sustainability Institute,[39] at UC Davis, argues that we must reconnect people with food and farming for the transformation of our food system, re-engaging youth with farming, and balancing rural livelihoods with environmental agendas. SAREP is currently developing a new undergraduate major in Sustainable Agriculture and Food Systems Studies.

The University of California Cooperative Extension[40] is a joint program between the United States Department of Agriculture (USDA) and The University of California Division of Agriculture and Natural Resources (DANR). They work to educate farmers and develop and apply research-based knowledge and information to benefit farmers and consumers. Researchers like Claire Kremen and Louise Jackson often team with Cooperative extension to connect with farmers in Yolo County.

Cooperative Extension has historically worked with large conventional farmers in California, as they represent the majority of the state's growers. They are currently working to get additional funding from the USDA and the new Farm Bill for organic/ sustainable grower projects. Since the current staff has less experience with organics, they are fundraising to hire someone to specialize in this area.

Conclusion

The Capay Valley is an example of innovative growers and organizations working to solve many economic, environmental, and social justice challenges through diverse and sustainable crop and land stewardship and by marketing their products directly to consumers. By reaching consumers directly, farmers are able to communicate their values, encourage people in urban areas to learn to eat seasonally and locally, and become aware of the needs of rural producers. Diverse cropping systems provide ecosystem services and healthy habitats, support year-round jobs, offer more direct marketing options to connect producers with consumers, and reduce economic risk.

Challenges still exist and many farmers in the Valley are still struggling to survive as alternative distribution and marketing networks are still forming and a urban-rural disconnect still remains. Other challenges have been mentioned in this study, such as depleting water reserves in California and ecosystems services degradation. Social justice for farmworkers is a problem we have not addressed broadly in this study, but a challenge that must be faced in order for agriculture in places like the Capay Valley to become truly sustainable. Organizations that assist farmers in accessing research and tools, such as Cooperative Extension, are suffering economically, as there is still a lack of awareness in urban areas about the need for rural assistance programs. The growing local and sustainable food movement is helping to connect urban consumers to the challenges of production in rural areas. Through wider awareness and program development,

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[39] http://asi.ucdavis.edu/

[40] Yolo County Cooperative Extension http://ceyolo.ucdavis.edu/, UC Cooperative Extension general http://ucanr.org/

encouraging food and agriculture education, there is hope that policy can change and better support the producers that grow fresh and healthy food and cultivate sustainable and diverse landscapes.

Links/ Works Cited

Farmers and Ranchers

Capay Fruits and Vegetables
http://www.farmfreshtoyou.com/index2.php?cmd=aboutourfarm
Durst Organic Growers
http://www.durstorganicgrowers.com
Full Belly Farm http://www.fullbellyfarm.com/index.html
Manus Ranch www.manasranch.com
Taber Ranch and Event Center http://www.taberranch.com/

Nonprofit Organizations

An Evaluation of Capay Valley Grown: Report on the Findings From a Partner and Consumer Survey. 2006. Online January 29, 2009.
http://capayvalleyvision.org/capay_valley_grown.html
California Alliance with Family Farmers (CAFF) http://www.caff.org/
California Collaborative Growers Project of CAFF
http://www.caff.org/programs/growerscollaborative.shtml
Capay Valley Growers http://capayvalleyfarmshop.com/about/
Capay Valley Vision http://www.capayvalleyvision.org/index.html
The Sacramento Area Council of Governments (SACOG)'s Rural Urban Connections Strategy (RUCS) http://www.sacog.org/rucs/
The Sacramento Local Region Market Assessment by SACOG
http://www.sacog.org/rucs/wiki/index.php/
Sacramento_Region_Local_Market_ssessment

Research and Extension

Laura-Anne Minkoff
Feb 16, '09, 12:21 PM
Added: Paragraph Break

Professor Claire Kremen http://nature.berkeley.edu/kremenlab/
Video of Professor Kremen's discussing the honeybee pollination crisis
http://nature.berkeley.edu/blogs/news/multimedia/
The XERCES Society for Invertebrate Conservation
http://www.xerces.org/
Professor Lousie Jackson http://groups.ucanr.org/jacksonlab/index.cfm
University of California Sustainable Agriculture Research and Education Program (SAREP) Website: http://www.sarep.ucdavis.edu/
Yolo County http://www.yolocounty.org
Yolo County UC Cooperative Extension http://ceyolo.ucdavis.edu/
The University of California Agricultural Issues Center
http://aic.ucdavis.edu/oa/pubs.html
The California US Gen Website: Yolo County, a page with links to other information on tourism and recreation in Yolo County and Capay Valley
http://www.cagenweb.com/yolo/yolexplr.htm

Maps and GIS Data

The Putah- Cashe Bioregion Project: Mapping and GIS Website
http://bioregion.ucdavis.edu/mapping/default.html

The Yolo Natural Heritage Program, Maps and GIS Data
http://www.yoloconservationplan.org/maps-and-documents.html and