

Sustainable Agriculture Research and Education in the 21st Century: Recommendations for UC SAREP



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The California Climate and Agriculture Network (CalCAN) is a statewide coalition that advances policy reforms to realize the powerful climate solutions offered by sustainable and organic agriculture. Since 2009, we have cultivated farmer leadership to face the challenges of climate change and to serve as the sustainable agriculture voice on climate change policy in California.

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Center for Food Safety
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Introduction

SAREP plays a unique and important role within the University of California. It is a statewide research, education and outreach program, engaging farmers, ranchers, university researchers, Cooperative Extension advisors and others in the practice of sustainable agriculture.

Following the 30th anniversary of the University of California Sustainable Agriculture Research and Education Program (SAREP) in 2016, the members of the California Climate and Agriculture Network (CalCAN) wanted to better understand how the program has fared. We wanted to look back at SAREP's successes, identify its current activities and forward recommendations for the program's future direction. To do this, we reached out to farmer, researcher and university leaders familiar with the past and current work of SAREP.

In the following paper, we begin with a review of our coalition, some of whom were involved in the founding of SAREP, and a brief history of the program before delving into the findings of our conversations and CalCAN's subsequent recommendations for the future of SAREP.

Who We Are

CalCAN is a coalition of sustainable and organic agriculture organizations that came together in 2009 to advance sustainable agricultural solutions to climate change. We work primarily on state policy issues, focused on improving resources, including research, education and technical assistance for farmers and ranchers to address a changing climate. Among our founding members are the Community Alliance with Family Farmers (CAFF) and the Ecological Farming Association (EcoFarm). Many of the CAFF and EcoFarm staff and farmer leaders were instrumental in making the case for the creation of SAREP some 30 years ago.

A Brief History of SAREP

SAREP was established out of a grassroots effort of California's sustainable and organic agriculture community in the 1980s. At the time, many organic and sustainable agriculture

farmers and ranchers felt that their needs were not being met by the University of California system. These organizing efforts were aimed at securing a dedicated program within the UC system for sustainable agricultural research, outreach, and education. This call was heeded by the state legislature when the California Agrarian Action Project, now known as CAFF, approached State Senator Nicholas Petris to help establish a sustainable agriculture program.

The Sustainable Agriculture Research and Education Program (SAREP) was established as a statewide program of the University of California Agriculture and Natural Resources Division (UC ANR) in 1986 through Senate Bill 872 (Petris). The intent of the legislation was to improve university resources relevant to low-input, biologically oriented farm management, including organic agriculture. SB 872 states:

...it is the intent of the Legislature that programs at the University of California designed to promote research on, and facilitate adoption of, sustainable agricultural practices, including, but not limited to, research, teaching, and outreach in the areas of sustainable farming systems, biologically integrated farming systems, organic agriculture, small farms, agroecology systems, biointensive integrated pest management, and biological pest control shall be adequately funded through the annual budget process to ensure the programs' ongoing ability to respond to the needs of all sectors of California's agricultural industry.

It is the further intent of the Legislature that the sustainable agricultural practices, methods, and materials identified and developed by these programs be incorporated into appropriate programs of the state and the university to maximize the access of California farmers and ranchers to the information needed to adopt and implement these measures.¹

¹ CA Food and Agriculture Code §§ 670-2-2. See: http://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=FAC&division=1.&title=&part=1.&chapter=3.&article=5

At the time of SB 872's passage, California farmers and ranchers led the country in the nascent organic farming movement. Today, California is still home to the largest organic agriculture industry in the country with over 700,000 acres in certified organic agriculture, representing 38 percent of the total U.S. organic production in 2016.

SAREP is based at UC Davis. In 2007, SAREP was merged as a program of the newly established Agricultural Sustainability Institute (ASI) at UC Davis, which also includes the Student Farm and Russell Ranch, among others.

Methodology

To better understand SAREP's past and current work, we reviewed documents from SAREP and conducted interviews with stakeholders. The documents included the 2008 SAREP Report on the program's history, described below, a 2003 CAFF report entitled "Agricultural Research and Sustainable Agriculture in California," and SAREP newsletters and website.

In 2008, an extensive history and review of SAREP was conducted by Kate Clancy at the behest of the current SAREP Director, Tom Tomich. We do not attempt to recreate that history here, but draw on it heavily and suggest that our readers review it for more details on SAREP's development, including programmatic work, staff and budget levels and relationship with UC ANR and UC Davis over the years.²

Twelve interviews were conducted to inform this review. Of these, five were with farmers, four were with researchers and representatives of the UC system, and three were with representatives of agricultural consultants or agriculture organizations. At least four of the interviewees were involved with SAREP at its founding, either through lobbying efforts or in formal positions with the program, such as serving on the SAREP Advisory Committee. The confidential interviews included questions regarding potential SAREP priorities and the degree to which the program has achieved its mission. The primary focus of this assessment was SAREP's Agriculture, Resources

and Environment theme, with a few interviewees also familiar with SAREP's food systems work.

SAREP Objectives and Programs, Past and Present

SAREP's program areas, as outlined in statute, are:

1. The administration of competitive research grants;
2. The development and distribution of information; and,
3. The establishment of long-term agricultural research sites.³

Today, SAREP names two primary goals on its website, which are "to assist California farmers and ranchers in developing and implementing sustainable production and marketing systems" and "to support California's rural and urban communities in understanding the concept and value of sustainable agriculture and participating in sustainable food and agricultural systems."⁴

In the first couple of decades of SAREP, its activities grew to include the following main areas:

Long-term Research in Agricultural Systems (LTRAS)

The legislation establishing SAREP required the creation of long-term sustainable agriculture research. In 1989, SAREP created the Long-Term Research in Agricultural Systems (LTRAS) project at Russell Ranch at UC Davis, which is now known as the Century Experiment. It is carried out on 72 acres of the ranch. According to the Russell Ranch website: "We measure the long-term impacts of crop rotation, farming systems (conventional, organic and mixed) and inputs of water, nitrogen, carbon and other elements on agricultural sustainability. Sustainability is indicated by long-term trends in yield, profitability, resource-use efficiency (such as water or energy) and environmental impacts."⁵ The project no longer receives direct SAREP funding, but is affiliated

² Clancy 2008.

³ Clancy 2008.

⁴ SAREP website. <https://asi.sf.ucdavis.edu/programs/ucsarep/research-initiatives/are>

⁵ Russell Ranch website

with ASI and receives administrative support from SAREP staff.

Competitive Grants

By 2003, SAREP awarded approximately \$8 million in competitive research and education/outreach grants, a core function of the program as outlined in statute.⁶ The research and education grants covered a variety of sustainable agriculture topics including cropland agriculture, direct marketing, grazing, forestry and community food system development along with many others. The grants helped to leverage existing projects to include sustainable agriculture priorities as well as establish new projects. The competitive grants program ended in 2011.

Competitive Grants

While SAREP no longer has an active competitive grants program, this constituted an important part of its work until 2011. By 2003, SAREP awarded \$8 million in competitive grant funding to projects focused on sustainable agriculture. Competitive grant funding declined over SAREP's history; in its final year of awarding competitive grants, SAREP only awarded a total of \$150,000.¹ A number of interviewees mentioned the competitive grants program as a strength of SAREP that they would like to see reinstated.

Grant-funded projects have focused on a variety of food systems issues using research, outreach, and/or education strategies. Some focused on production methods, including funding for the creation of a California Pesticide Reduction Plan by researchers at CSU Sacramento and Pesticide Action Network, and funding for UC Davis researchers to compare conventional and low-input organic farming systems. Other projects have focused on barriers to bringing sustainable food to the market place, farmworker conditions, and increasing healthy food access in urban areas.²

¹ UC SAREP, n.d.

² Ibid.

Additional Programs

Established with state and nonprofit foundation funding, SAREP established several programs. Among them was the Biologically Integrated Orchard Systems (BIOS). Legislation in 1994 established the companion Biologically Integrated Farming Systems (BIFS) Program (see box on following page for more on these programs). A third program was the Alternatives to Methyl Bromide program, which funded research on alternatives to the soil fumigant with funding from the Department of Pesticide Regulation. The fourth program was the development of short courses for farmers and manuals on organic crop production issues.

Another significant program area for SAREP over the years was education and communications/outreach projects aimed at reaching farmers and others in the agricultural community, as mandated in statute. In the first four years of the program, SAREP hosted five educational conferences per year on sustainable agriculture topics for farmers and other agricultural professionals. SAREP communications efforts over the years included newsletters, workshops, numerous publications and more. SAREP has shifted away from newsletters and farmer conferences to online publications and workshops.

Today, SAREP is now a program of the ASI, a UC Davis center. The current programmatic areas for SAREP include a strong focus on local food systems development. The Food and Society program area includes several initiatives to support improved local food systems, including regional food systems (marketing and supply chains), farm to school/institutions, regional food system assessment, farmworker and food worker well-being, and agritourism. As we only had one interviewee familiar with SAREP's Food and Society program area, our focus is on their Agriculture, Resources and Environment program.

The Agriculture, Resources, and the Environment program includes a number of issue areas such as research on carbon footprint analysis of cropping systems, sustainable management of nutrients and water, ecosystems services research, and sustainable waste management. This work has

⁶ Clancy 2008

Biologically Integrated Farming Systems (BIFS) and Biologically Integrated Orchard Systems (BIOS)

SAREP's Biologically Integrated Farming Systems (BIFS) and Biologically Integrated Orchard Systems (BIOS) programs came up repeatedly in interviews as examples of some of SAREP's most impactful work.

The BIOS program was created by Community Alliance with Family Farmers (CAFF) in collaboration with SAREP staff. The BIOS program aimed to help reduce the use of agricultural chemical inputs in almond orchard systems, and arose in part out of SAREP-funded studies of eight almond orchards that examined the impact of farming techniques on yield and quality.

The program's success led to the creation of the BIFS program, which was established through legislation in 1994. BIFS was led by SAREP and supported by the Environmental Protection Agency, California Department of Pesticide Regulation (DPR), and UC ANR. The goal of BIFS was to extend the success of BIOS to other farming systems. BIFS used demonstration projects, training, and support from UCCE to help farmers reduce chemical inputs on their farms.

The BIFS program ended in 2010. However, over its 15-year history, the program funded 12 projects in 11 different farming systems: apple, citrus, dairy, grape, lettuce, prune, rice, strawberry, tomato and cotton, walnut and winegrapes. According to SAREP, these projects contributed to "reduced pesticide use, improved soil fertility, decreased erosion and nitrogen leaching, and increased populations of beneficial insects, fishes, migrant birds, and game."¹

BIFS projects not only led to increased sustainability on the demonstration site, but also contributed to change in practices on non-participating farms that were exposed to these efforts through BIFS outreach.

¹ UC SAREP, n.d.

also included life cycle energy and greenhouse gas emissions profiling of various crops, agricultural practices, and food system scales, as well as the California Nitrogen Assessment, which was completed in 2016, and about which outreach continues.⁷

Newly emerging work at SAREP includes a return to a focus on organic agriculture issues, including developing online tutorials for beginning organic farmers, a newly constituted UC ANR Agroecology and Organic Farming Systems Workgroup to discuss organic agriculture research and education needs and hedgerow research on organic farms. Emerging soil health outreach includes farmer workshops.

Findings

Successes of SAREP

CalCAN asked interviewees to consider the degree to which they believe SAREP has achieved

its mission of supporting sustainable agriculture research and education needs, on a scale of 0-5 (0 being "not at all" and 5 being "extremely well"). Out of the ten interviewees⁸ who answered this question, five believed that SAREP has fulfilled its mission well or extremely well, and four believed it has achieved its mission adequately (a 3 on the scale). Only one respondent felt that SAREP has not fulfilled its mission at all.

The BIFS and BIOS programs were frequently cited as examples of on-farm demonstration programs that were incredibly useful for farmers interested in transitioning to more sustainable on-farm practices. SAREP developed a cover crop database that was also identified as an important resource for California growers interested in instituting cover cropping on their land. Several interviewees identified the former competitive grant program as funding important work in California.

⁸ Two of our interviewees felt that they didn't have enough information to answer this question.

⁷ Tomich, Brodt, Dahlgren, & Scow, 2016

SAREP’s work on California farm-to-school initiatives, sustainable food systems and local marketing was frequently held up as examples of the program’s important contributions, and was also cited as an example of a SAREP project that is statewide and involves partnerships with extension advisors across California that extends the reach of SAREP.

Interviewees were also quick to note the historic importance of SAREP in institutionalizing sustainable agriculture in California and drawing increased attention to sustainable agricultural practices. According to one interviewee, this was especially true in its early years, when SAREP had a “small staff, but they were effective at doing that work...they also had a progressive vision.” As another put it, “SAREP was certainly part of the institutionalizing of alternative agriculture and organic” in California.

Priorities for SAREP

Based on SAREP’s current and past work, CalCAN compiled a list of potential priorities for the program and asked interviewees to rank them in terms of high (3 points), medium (2 points), low (1 point), or not necessary (0 points). The results gave a clear indication of where these stakeholders think that SAREP should dedicate its resources and attention. The priorities are ranked below from high to low according to the sum of the points awarded by the interviewees. In the

following sections, we review the input and recommendations from the interviewees.

Stakeholder Input

Engaging Farmers Through Farmer-led Research, On-farm Demonstration, and Farmer Outreach

Interviewees expressed a desire for SAREP to once again prioritize on-farm demonstration, farmer-led research, and outreach to farmers. In fact, “farmer-led research priorities and participatory research projects” and “farmer-to-farmer demonstration projects (e.g., BIFS and BIOS)” were ranked as the most important priorities for SAREP by the group (see Table 1). There was agreement amongst these stakeholders that these types of programs are the most effective way to involve farmers and help them learn how to adopt more sustainable practices.

In the words of one farmer, SAREP should “come down and talk to the farmer, come see what kind of difficulty he is having...farmers need help organically taking care of the insects.” Another grower echoed this sentiment, suggesting that SAREP ask growers what they are “doing that seems to be working and what [they] would need to know...asking growers what they are curious about a little more.”

SAREP’s former BIOS and BIFS programs were mentioned repeatedly as examples of on-farm

Table 1. Potential Priorities for SAREP

Priority	Total Score (Sum of Responses)
Farmer-led research priorities and participatory research projects	30.5
Farmer-to-farmer demonstration projects (e.g., Biologically Integrated Farming Systems/Orchard Systems)	28.5
Climate change and agriculture research, outreach and education	28
Connecting with other statewide programs (e.g., Small Farm program, the CASI program)	27.5
Organic agriculture research, outreach priorities	25.5
Food systems, marketing and supply chain issues	23
Competitive grants for sustainable/organic ag research, outreach, education	21
Conventional/mainstream agriculture research, outreach priorities	13

demonstration of sustainable practices that positively impact farmers' ability to successfully improve the sustainability of their operations. One interviewee explicitly said that they "would love to see the BIFS program come back." Another interviewee added that as SAREP builds on-farm demonstration programs, it should make sure to include farmer communities that are underserved.

SAREP has led on-farm field days, which were pointed to as a positive example of farmer outreach. Interviewees expressed a hope that SAREP would continue these field days, which have well-received, and increase their frequency.

Climate Change Research, Outreach, and Education

SAREP currently conducts climate change and agriculture research, including projects such as a white paper on energy use and greenhouse gas emissions in the food system, and life cycle assessments on the environmental impact of various agricultural systems.⁹

All interviewees agreed that SAREP could continue to play a significant role in climate change and climate-smart agriculture research, outreach, and education. Interviewees ranked "climate change research, outreach, and education" as the third most important priority for SAREP (see Table 1).

However, they also emphasized that such efforts should be designed to be directly relevant to producers and to lead to tangible changes in producer practices. Many expressed that SAREP is well-positioned for this work because it has established trust with growers who are sometimes skeptical of climate change. As one put it, "a lot of farmers are familiar with the program and so they are willing to listen, engage, and be involved with those issues."

Perhaps even more crucial than research, in the eyes of these stakeholders, is farmer outreach regarding climate change issues and climate-smart agricultural practices. As one grower put it "we are suffering from climate change and it has

it effect on us." This grower believes that SAREP could help answer questions for growers such as, "If you live in a drought area 'how do we be as productive as possible in trying to alleviate that.'" SAREP "could have the strength in translating things from the research to the people."

Many stakeholders suggested that SAREP needs to more clearly define its focus, and that climate change could be a successful frame through which to take on sustainable agriculture research, outreach, and education.

Whole Farm Systems

As SAREP considers its research and other program priorities in the coming years, interviewees recommend that it focus on whole farm systems¹⁰ and take an integrated management approach to research and outreach. Many expressed that this type of research is more relevant to sustainable farmers who are rotating crops, and that it provides a more complete picture of the climate benefits of sustainable practices. SAREP's BIFS and BIOS were again cited as good examples of whole systems approaches. Stakeholders suggested that these programs could be reinstated and expanded to include other types of commodity systems and diversified systems.

Organic Agriculture

Organic agriculture is an important priority for SAREP in the eyes of many interviewees, and stakeholders would like to see SAREP return to an organic agriculture program agenda through its many initiatives. They scored it twice as high as "conventional ag research, outreach, and education" in importance (see Table 1). Organic agriculture is also explicitly called out in the program's founding legislation.

While SAREP has conducted organic agriculture research and education, and some of its affiliated researchers currently include organic systems in their research, many interviewees shared their

⁹ UC SAREP, n.d.

¹⁰ Whole farm planning is a strategy that enables farmers to balance profitability, community needs, and environmental vitality as they identify and pursue their goals. In whole farm systems planning, every component of the farm is considered interconnected with each other component.

frustration that SAREP is neither active nor vocal enough in its embrace of organic agriculture. In the words of one interviewee, “SAREP may be a little allergic to the word ‘organic.’”

Interviewees suggested that this may have more to do with a general aversion to the word “organic” in California from researchers in the agriculture community than a feeling from SAREP that this is not an important focus. According to one interviewee, historically SAREP has been met with resistance from the UC system when it has tried to be too pro-organic, saying “if you speak up, you get ground up. Now no one speaks up anymore.” Another interviewee said that they had “always been an advocate for SAREP to not be shy about focusing on organic, and I think that they are [shy]. It’s been a good seven or eight years since they’ve actually published anything on organic.”

Interviewees believe it important that SAREP be led by members of the organic and sustainable community, and they were almost unanimous in their insistence that sustainable and organic practices should be the focus of SAREP’s initiatives. One suggested that the majority of the advisory committee should be organic producers and the minority should be conventional growers with “a real interest in becoming more ecological.”

Simultaneously, interviewees recognize that while SAREP should have a focus on sustainable and organic practices, it is imperative that the program be open and accessible to members of the conventional agriculture community who are interested in adopting more sustainable practices. Many added that a sole focus on organic would be too narrow for SAREP, as many producers who are not certified organic have an interest in sustainable agriculture. As one interviewee put it, SAREP’s “base of support should be...within the organic community, and yet I think we don’t want to just speak to that base, we want to try to speak beyond it.”

In sum, there was a strong sense among this group that SAREP must both become a stauncher advocate of organic practices and also continue to reach out to conventional growers with an interest in learning about on-farm sustainability.

Connecting with Other UC Programs

Stakeholders interviewed in this project were hopeful that in the future SAREP will put more emphasis on partnering with organizations across the state, including its partners throughout the UC system. In fact, “connecting with other statewide programs” was ranked as the fourth highest priority for SAREP. Interviewees suggested that SAREP could expand its engagement with UC Cooperative Extension (UCCE), which in turn could expand the reach and impact of SAREP’s role.

Some expressed the concern that SAREP has become too specific to UC Davis, and should make the effort to connect with other UC programs, such as the Berkeley Food Institute, Center for Agroecology and Sustainable Food Systems at UC Santa Cruz, and sustainable agriculture programs at UC Riverside. One interviewee suggested that SAREP could act as a clearinghouse for sustainable agriculture research and education throughout the UC system.

Others suggested that in addition to working with partners throughout the UC system, SAREP should explore opportunities to collaborate with local organizations interested in sustainable agriculture issues. One interviewee also cautioned that SAREP must maintain a clear focus on its mission and avoid being subsumed by other programs when it considers strategies for partnering and sharing resources. They warned that combining programs could cause things to “get jumbled in terms of objectives,” and noted that some UC statewide programs often have “distinct objectives...[and] totally different perspectives.”

Clearly Defining Role and Communicating to the Public

Throughout the interviews, it became clear that many felt unsure about SAREP’s current priorities and recent endeavors. This confusion arose from both a lack of communication about SAREP’s current activities and a lack of clarity on the division between SAREP and ASI. It was suggested that SAREP attempt to more clearly establish its role and niche, particularly in relation to the work of ASI. Interviewees were

often unsure which programs fell under the SAREP umbrella, and which were ASI efforts not connected to SAREP. There was a feeling that more clearly delineating between SAREP and ASI could help stabilize support for SAREP and improve understanding of its role within ASI.

Interviewees often expressed a hope that SAREP will hone its public communications strategy, as many were unsure of what SAREP was involved in currently. As one person put it, SAREP should “be the bridge for translating the research to the general public,” given its connection with the UC. Improved public communications could go hand in hand with an increased focus on outreach and education, which some suggested might be a more appropriate area of emphasis for SAREP than original research.

Recommendations

After carefully reviewing the results of the interviews and analyzing SAREP’s current initiatives, CalCAN offers the following recommendations to build upon SAREP’s strengths and continue to position it as a valuable resource to California’s sustainable farming community in the coming decades.

1. Reininvigorate farmer-led research and on-farm demonstration projects in the field

Interviewees frequently mentioned SAREP’s on-farm projects as some of the program’s most impactful efforts. BIFS and BIOS were pointed to as stellar examples of SAREP’s contribution to bringing sustainable practices to farmers on the ground and mobilizing farmers to help share information with one another about sustainable practices. We believe that a return to such projects—with a modernized framework to address current opportunities and challenges for California farmers—would help SAREP to draw upon farmer concerns and experiences in order to inform its research agenda and to better translate the findings of SAREP’s research for farmers on the ground.

2. Bring back the competitive grants program

We recommend that SAREP reinstate its competitive grants program, which would help SAREP expand its reach. SAREP’s competitive

grant awards were once diverse and spanned the whole of California. Bringing this program back could help address the concern that SAREP’s work has become too centered around UC Davis and help the program connect with a larger group of farmers on the ground by awarding grants to farmers who can effectively execute projects aligned with SAREP’s mission. Competitive grants could emphasize projects with farmer-to-farmer demonstration and on-farm components.

3. Connect actionable climate change and agriculture research with outreach to California producers

SAREP has conducted an impressive amount of research on the greenhouse gas emissions associated with agriculture. We recommend that SAREP continue its focus on climate change research, and place a greater emphasis on strategies that make its research findings directly relevant to producers and their management choices. Interviewees highlighted a need for findings to be translated into tangible changes in on-farm practices. SAREP is well-positioned to take on this effort and help farmers transition to more climate-smart and resilient farming practices grounded in credible research.

4. Conduct whole farm systems research, education, and outreach

Through its many collaborations, SAREP is well positioned to conduct whole farm systems research that is valuable to producers operating diverse and integrated farming systems. This research has the potential to be more relevant for diversified sustainable agriculture producers than that which focuses on single crop systems.

5. Reininvigorate focus on organic agriculture research, outreach, and education

SAREP has a longstanding connection with the organic agriculture community. The program was born out of the fact that there was no program in the UC system dedicated to serve the burgeoning organic and sustainable agriculture sector. SAREP has played a critical role in solidifying the importance of organic agriculture research in California. A return to the roots and original

focus of SAREP would benefit a diversity of producers, many of whom may not be certified organic producers but use many of the same practices as organic operations.

6. Focus on program impact and expand SAREP's reach far beyond the UC Davis community

Interviewees expressed a hope that SAREP would take advantage of opportunities to network with other university programs engaged in sustainable agriculture throughout California. This could include collaboration with programs at UC Santa Cruz, UC Merced, UC Riverside, UC Berkeley, and many others. Should funding allow, a part-time or full-time SAREP staffer could be placed at another UC in order to help SAREP extend its reach.

7. Increase communications to farmers and the public

Interviewees suggested that SAREP would have a greater impact by publicizing its efforts more effectively. Through conventional and social media tools SAREP should aim to help disseminate information about its research, outreach, and education efforts. Improving public communication might help strengthen support for the program and highlight its significant contributions to sustainable agriculture in California.

8. Create a SAREP advisory committee with statewide representation

ASI currently has a single advisory group that meets once annually, but SAREP does not have an advisory group separate from ASI. A separate advisory group for SAREP would provide greater focus on its programs of statewide impact. Multiple subcommittees of the advisory group could focus on specific parts of SAREP's mission, including groups focused on on-farm research and organic research. These groups could stay engaged and help inform SAREP's work on a formal and ad hoc basis throughout the year. Doing so would help guide SAREP's work and increase its direct connection with producers and organic agriculture stakeholders, and ensure that SAREP is addressing the issues that these stakeholders perceive as the most

pressing and relevant to farmers. Ensuring representation by organic farmers on a SAREP advisory board would help ensure that SAREP meets its legislatively mandated goal of supporting organic agriculture in California.

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Appendix:

Interview Questions

Are you currently or have you been involved in the past with SAREP? If so, how? If not, are you familiar with SAREP's past or current work?

Of SAREP's past or current work what do you think SAREP has done well? What hasn't it done well? Why?

If you could set the direction of SAREP for the next ten years, what would you have SAREP do? What kind of research questions should it address? Outreach? Education?

When thinking about climate change and agriculture research, outreach and education needs, what role could SAREP play in addressing these issues?

What should SAREP's relationship look like with the organic and sustainable agriculture community? With "mainstream/conventional" agriculture?

Anything else you want to add about what you think the future direction of SAREP should be?

SAREP was started as a means addressing organic and sustainable agriculture research, education and outreach needs that many perceived as under-served by the University of California. How well has it fulfilled its mission?

1 = Poorly 2 = Adequately 3 = Well 4 = Extremely well

Comments:

Rank the following priorities for SAREP using this scale:

0 = Not needed 1 = Low priority 2 = Medium priority 3 = High priority

- a. Farmer-to-farmer demonstration projects (e.g., Biologically Integrated Farming Systems/Orchard Systems)
- b. Farmer-led research priorities and participatory research projects
- c. Competitive grants for sustainable/organic ag research, outreach, education
- d. Organic agriculture research, outreach priorities
- e. Conventional/mainstream agriculture research, outreach priorities
- f. Climate change and agriculture research, outreach and education
- g. Connecting with other statewide programs (e.g., Small Farm program, CASI program)
- h. Food systems, marketing and supply chain issues
- i. Other: (Interviewee fills in)

Comments: