2020-2025

UC ANR REC System Strategic Framework

Draft for Comment
October 5, 2020

UNIVERSITY OF CALIFORNIA
Agriculture and Natural Resources

Table of Contents

REC System Mission & Vision
Draft

Draft REC System Mission

In support of the UC ANR Mission, we provide a unique network of living laboratories generating innovative research, education and outreach to benefit diverse communities across California's agricultural, wildland, and urban environments

Draft REC System Vision

Our Vision:

Be the world's go-to source for the discovery and demonstration of practical solutions to meet the agricultural and natural resource needs of rural and urban communities worldwide

❖ *Vivid Description:*

Stretching from Oregon to Mexico, from the Sierra Mountains across the Great Central Valley and Coastal Ranges and on to the Pacific Ocean, our nine unique REC locations will leverage California's diverse climates and ecosystems, its 400+ crops, and the strength of the University of California system to attract a global consortium of leading researchers and educators. Together we will advance science-based solutions for both large and small scale agricultural and environmental issues - improving access to nutritious and affordable food, making water cleaner and air fresher. We will engage California's diverse rural and urban communities in hands-on learning to promote science literacy and 21st century life skills. Our work will elevate California's economic prosperity while protecting wildlife, enhancing habitat and making our forests, parks, and communities healthy.

We will create novel partnerships across California and the world to generate resources and opportunities that will enhance our ongoing sustainability. We will create hubs of innovation and invest in facilities and new technology to address changing needs and emerging problems. Our people will be proud to work in the UC ANR REC System, knowing that they contribute to helping the people of California adapt to the most pressing climate, environmental, and food system challenges.

REC System Goals
Draft

UC ANR REC System *Draft* Goal Snapshot

All of the goals in the REC System Framework aim to accomplish the same high-level objectives:

- Support Mission of UC ANR
- Increase Utilization of the RECs
- Enhance Financial Stability

Through "systemness" we aim to more effectively accomplish these objectives.

Goal #	Lead	Goal Topic	Strategic Objective				
			Research & Extension	Operational Excellence	Financial Stability	People	Policy & Advocacy
1	Haver	Create Research and Extension Hubs					
2	Youtsey/ Powers	Support Novel Technology Commercialization					
3	Bailey	Analyze, Allocate & Optimize Resource Allocation					
4	Sapeta	Increase Funding for Facilities and Infrastructure					
5	Lagrimini	Optimize REC Operations, Policies and Processes					
6	Lagrimini	Increase Utilization & Visibility of REC System					

REC System Goal 1 — Create Research & Extension Hubs

Implementation Lead / Team: **Haver /** Hub REC Directors

Goal: By June 2025 create scientifically robust hubs of knowledge and outreach addressing pressing agricultural and natural resource needs of California and the World by leveraging the diverse environments and genetic complexities found within the REC system

Opportunity:

The UC REC system houses some of the world's preeminent researchers working in disciplines related to agriculture and natural resources. However, we have a limited number of collaborative research groups across the UC system and national and international scientific communities, and there is currently not a mechanism in place to aggregate and focus our unique assets (knowledge, data, research, equipment) to address critical issues. We have not fully leveraged the strengths and unique research environments of the RECS to create areas of specialization. In addition, the RECs function more or less independently from one another, therefore not taking advantage of synergies that exist. Due to the remoteness of some of the RECs and progressively weakened links to campus academics over time, the RECs are not fully utilized and opportunities for research and collaboration are missed, slowing progress. A coordinated mechanism, such as having specialized research groups and facilities to attract researchers from universities, state and federal agencies as well as industry is needed.

Proposed Solution:

We will create specialized research and extension hubs within the REC system that focus on high-priority research areas, such as climate change, drought resilience, invasive pests and diseases, urban-rural interface issues, biological pest control, and sustainable/regenerative agriculture. Hubs will provide a stimulating, multidisciplinary environment and cutting-edge facilities to support established researchers and to attract new researchers and research collaborations. Hubs can be based at a specific Center or may span across multiple Centers in the form of strong, interconnected collaborative research groups and shared expertise and facilities. The genetic complexities and diverse environments of the RECs offer a unique opportunity for research not found anywhere else in the world. Focus areas for the hubs will be identified through planning workshops that will identify current areas of expertise and collaboration and new partners and opportunities. We will partner with UC ANR's Government Relations, Communications and Fund Development teams to assist with marketing, communication and fund development associated with the hubs. An Academic Coordinator will be hired to identify funding opportunities and work with groups of researchers to apply for large grants to secure specialized equipment and staffing to meet hub goals.

Benefits:

1. Shared staffing and unique equipment which would reduce costs and increase efficiencies
2. Bolstered research and more rapid progress towards solving dire issues facing agriculture and natural resources
3. Expanded outreach and education outcomes
4. New funding opportunities
5. Greater leadership role of the REC System

#	Goal/Key Strategies & Timeline	20-21	21-22	22-23	23-24	24-25
1a	By December 2021, hold planning workshops to identify key research and extension hubs including key collaborators, required personnel, equipment, academic support and financial estimates					
1b	Secure funds and hire an academic coordinator/grant writer to identify new opportunities for grants/collaboration at the specified hubs by Jan 2022					
1c	By June 2023, submit multi-millionN3w dollar, multi-disciplinary hub-based grants					
1d	By June 2024, establish field experiments that support hub concept					
1e	By June 2025, expand outreach and extension activities related to respective hubs					

REC System Goal 1 — Create Research & Extension Hubs

Goal: By June 2025 create scientifically robust hubs of knowledge and outreach addressing pressing agricultural and natural resource needs of California and the World by leveraging the diverse environments and genetic complexities found within the REC system

Assumptions:

1. Researchers will join our collaborative hubs to successfully secure funds
2. Funds are successfully generated for personnel and capital investments at RECs (see also Goal 5)
3. Successful marketing of RECs to UC, national and international scientific communities (see also Goal 6)

Metrics and Targets:

1. Number of hub-generated refereed journal and extension publications in State, National, and international journals and other media outlets; target = 10 journal and 30 extension publications by 2025.
2. Number of multi-disciplinary, multi-million dollar hub-based research and extension grants; target = 2 grants submitted by 2023
3. Number of major research and extension projects based at multiple RECs and linked to the Hubs; target = 5 by 2024

REC System Goal 2 Support Novel Technology Commercialization

Implementation Lead / Team**: Youtsey, Powers /** Diaz

Goal: By June 2025, operationalize a program to support novel technology development and commercialization to expand use and impact of research and extension on the RECs

Opportunity:
The use of novel digital and biological technologies for crop and food production (breeding, farming, processing, distribution/retail) must expand in order to increase profitability and efficiency through automation, precision application, and data-driven decision making. However, development and industry adoption of technology is slow because solutions are highly complex and interdisciplinary and the sectors (technology and agri-business) speak different languages. UC ANR is well-positioned to play a critical intermediary role as a trusted broker, accelerating the development, testing, and integration of novel food and agriculture technologies that solve a range of pressing food system challenges that can be accomplished via externally-funded projects at the RECs.

Proposed Solution:
Create a UC ANR digital technology team and project-driven hardware/software/data infrastructure that harnesses existing tech resources (e.g. IGIS, IPM, CSIT) and novel campus partnerships (e.g. AIFS, CITRIS, SDSC) to support research, extension and commercialization projects at the RECs that address critical food and agriculture challenges (e.g. labor, climate, pests, water). To begin, the team will identify and collaborate on specific project opportunities with ANR academics and build an initial digital technology platform. This would be followed by expansion to a small, dedicated team with technology skills, tools and expertise to complement ANR academics and manage industry-academic collaborations. This goal intersects with UC ANR's Innovation Goal (#4).

Benefits:
1. Increased project activity and revenue to UC ANR and the RECs
2. ANR will have a unique resource to attract new projects and partnerships that will create important impacts
3. ANR will have the ability to engage completely new partners to collaborate on projects~~,~~ (e.g. tech companies and campus computer scientists)

#	Goal/Key Strategies & Timeline	20-21	21-22	22-23	23-24	24-25
2a	Form a virtual ANR technology development team through IGIS, IPM, CSIT, AIFS collaboration by Dec 2020					
2b	Identify 1-2 technology development projects on RECS to propose for external funding by Mar 2021					
2c	Convene 2-3 workshops on food and agriculture technology topics of broad interest by Sep 2021					
2d	Form expanded, permanent technology team to pursue 3-5 new projects by Dec 2022					
2e	Create a public-private business plan that is self-sustaining and grows REC revenue 10%, annually, by Jun 2025					

REC System Goal 2 Support Novel Technology Commercialization

Goal: By June 2025, operationalize a program to support novel technology development and commercialization to expand use and impact of research and extension on the RECs

Assumptions:

1. Able to secure funding and partnerships through more effective collaboration among existing UC ANR teams, novel partners, and technology infrastructure
2. The resource/infrastructure/service will be used for UC/non-UC research projects but also for commercialization partnerships with companies
3. There is demand by potential new funders: industry, government agencies, and non-profit foundations for novel solutions that leverage technology that UC ANR is uniquely positioned to obtain through more intentional collaboration to seek out funding opportunities

Metrics and Targets:

1. Number of new multi-disciplinary research, development, and commercialization projects launched that include a novel technology component. Target = 1-2 in year 1, 3-5 in year 2 and beyond

REC System Goal 3 Analyze, Allocate, & Optimize Resource Deployment

Implementation Lead / Team**: Bailey /** Haver

Goal: Optimize strategic resource use by utilizing financial planning tools to inform sound system-wide decision-making and transparent communication to stakeholders and funders about future plans and needs by December 2022

Opportunity:
Resource allocations are currently based on historical decisions and patterns which may no longer exist or may not reflect where the REC system can best meet future needs. With state funding decreasing, there is financial pressure to be as efficient as possible with those funds while also developing new revenue sources. Currently there is a lack of a clear process and tools for budgeting both within each REC and more importantly across the RECs as a system. Without an accurate picture of current and future resources, allocation and optimization of funds in a strategic, mission-fulfilling way is very difficult.

Proposed Solution:
Building on the existing six year plan for individual REC central resource allocation, develop and deploy a universal financial planning process across the RECs and across all funding streams, using best financial management practices for business analysis and development. This process and tool must be as easy as possible to use with existing Kualli outputs and accounting methods. Educating decision makers and financial tool users across the system will be needed to effectively develop, adopt, and use it to inform strategic decision making. Facilitated conversations will be used to sort through thorny, sensitive, difficult decisions about system wide resource allocations. Work with RPM, BOC, FPM, IT to ensure inclusive process.

Benefits:
1. Use funds efficiently to maximize ability to meet overall ANR strategic goals and mission
2. Better ability to use accurate financial information, both current and future, to inform internal REC decision making and planning process
3. Improved transparency of financial projections and logical, fiscally sound planning process and need for donors and fundraising campaigns
4. Improved ability to operate RECs as a system, with appropriate processes to make fact-based, mission-driven, future focused decisions about resource allocation and needs, and improved ability to communicate to funders and governmental agencies about needs and plans.

#	Goal/Key Strategies & Timeline	20-21	21-22	22-23	23-24	24-25
3a	Develop financial budget tracking and forecasting tool that meshes with existing system, including a “dashboard” for user-friendly summary information, in order to analyze current and future funding deployment and utilization, and identify gaps and needs across REC system by July 2021					
3b	Educate REC Directors, BOs, Administrators, and Leadership in how to use the tool to ensure adoption and utilization across all RECs by December 2021					
3c	Engage in tough, honest, facilitated conversations about resource and staff allocations to ensure other strategic plan goals are successful in furthering the REC mission and viability by June of 2022					
3d	Make decisions about reallocation of resources across REC system, identifying gaps and 5 year timelines for changes by December 2022					
3e	Have financial plan and resource needs in format ready for funders and stakeholders by June 2023					

REC System Goal 3 Analyze, Allocate, & Optimize Resource Deployment

Goal: Optimize strategic resource use by utilizing financial planning tools to inform sound system-wide decision-making and transparent communication to stakeholders and funders about future plans and needs by December 2022

Assumptions:

1. Willingness and agreement across RECs and UC ANR partners to use the new tool
2. Willingness of and assistance from FPM, IT, RPM and BOC in developing the tool
3. Coordination with capital improvement plan and Goal 4 (Enhance Facilities and Infrastructure) is smooth and fruitful

Metrics and Targets:

1. Adoption and active use of financial planning tool; target = 100% adoption and use by nine RECs
2. 75% of REC strategic planning goals use the financial planning tool to inform their development and implementation.

REC System Goal 4 Increase Funding for Facilities & Infrastructure

Implementation Lead/Team**: Sapeta,** REC Directors

Goal: Support REC programming through facility and infrastructure improvements, and address critical research in the REC system by diversifying and expanding funding sources to become financial stable by June 2023

Opportunity:
Public funding for UC ANR has steadily declined over the past 20 years, making support for the REC system unstable. In the long-term, a continued decline in funding results in reduced ability to provide adequate support to UC researchers and Extension personnel conducting work at the REC's. Grants awarded to academics and staff provide resources needed for specific activities. However, additional resources are necessary to provide essential infrastructure, equipment, and support personnel. When fixed costs are distributed across more users, all REC users benefit. Current 6-year step down plans will reduce core funding for the RECs risking a negative balance over the next 3 years.

Proposed Solution:
New sources of support to augment public funding and provide greater financial stability include a larger pool of public and private research clientele, greater community engagement and use of REC facilities, donors, and partners to deliver the mission. We will think much broader than our current scope of stakeholders. Furthermore, we will aggressively seek public and private support for infrastructure to ensure state-of-the-art facilities and equipment are available to researchers and community members alike. Facilities Planning & Management (FPM) and Resource Planning & Management (RPM) units will partner with Contracts & Grants and Development Services to support REC Directors in approaching private enterprise and nonprofits (e.g. commodity groups) to increase resources for facilities and infrastructure enhancements.

Benefits:
1. Preserves central funding support for UC ANR researchers
2. Provides resources to maintain long-term research and perennial systems
3. Secures resources necessary to address deferred maintenance and improvements necessary for future success/relevance
4. Attracts new partners/users by having improved facilities and equipment.

#	Goal/Key Strategies & Timeline	20-21	21-22	22-23	23-24	24-25
4a	Increase state funding allocation by developing and continuously updating Capital Improvement Plan and submitting to UCOP Capital Planning Group annual capital financial requests that address deferred maintenance needs and support facility & infrastructure renewal. Target $10M per annum. Owner: FPM/RPM					
4b	Actively seek out and apply for grant opportunities that support equipment enhancements and facility improvements by collaborating with FPM, RPM, Contracts & Grants and Development Services units. Owners: REC Directors					
4c	Increase donations for capital investment and expand resources available to the REC system by working closely with Development Services to identify prospects, cultivate relationships, and market program impacts. Owners: REC Directors and senior leadership					

REC System Goal 4 Increase Funding for Facilities & Infrastructure

Goal: Support REC programming through facility and infrastructure improvements, and address critical research in the REC system by diversifying and expanding funding sources to become financial stable by June 2023

Assumptions:

1. The economy stabilizes by the end of 2021 and state, donor, federal monies are available for new opportunities
2. Central funding support is maintained at current levels
3. UC ANR allocation of UCOP capital improvement funds matches ANR capital improvement plans
4. REC systems in other states are financially stressed, which allows for UC ANR REC system to attract non-CA researchers who seek out cost effective locations to conduct their work.

Metrics and Targets:

1. State funds for deferred maintenance and facilities renewal secured; target = $10M annually
2. Number of new equipment/facility improvement grants; target = submit at least one per REC per year with a 25% success rate
3. Investments from private enterprise to conduct research at REC facilities; target = secure $500k per year
4. Double the amount of donor contributions for capital and equipment improvements over the FY19/20 baseline

REC System Goal 5 Optimize REC Operations, Policies and Processes

Implementation Lead / Team**: Lagrimini /** REC Directors

Goal: By Dec 2022, optimize policies, processes, and procedures for performing research and extension activities at the RECs to remove barriers permitting us to support existing users, attract new users, and elevate the perceived value of the UCANR REC System

Opportunity:
Currently the RECs solicit, approve, and manage research and extension requests independently following a complex set of UC, UC ANR, and REC policies and processes in order to conduct research and extension activities or allow for facilities usage at any of the nine RECs. For example, each REC manages its own research submission process and facility use agreements. Often this results in inefficiencies and conflicting procedures and processes leading to user frustration and potentially loss of the activity and associated revenue.

Proposed Solution:
The REC system will centralize and streamline business functions to save funds and staff time to prioritize programming and critical research consolidating functions such as: outreach, event management, website/social media support, labor management, financial planning and budgeting, equipment/depreciation, and coordination with facilities management. To achieve this goal, the REC system will need to partner with other ANR units (FPM, RPM, CSIT and PSU) and UC campuses. This goal will also require partnering with external vendors (i.e. consultants, software companies, etc.).

Benefits:
1. Increased financial stability through cost savings by reducing unnecessary processes, and facilitating a greater capacity for research and extension activities.
2. Increased capacity to subsidize research costs to the user by developing alternative revenue streams.
3. Increased relevance of the RECs, thus attracting non-traditional users and new partnerships, elevating the overall awareness of the REC system and all it offers to researchers and the community.
4. Decreased barriers to new partners conducting research and extension programs at the REC, leading to increased usage by new parties.

#	Goal/Key Strategies & Timeline	20-21	21-22	22-23	23-24	24-25
5a	By June 2021, develop and implement a centralized research proposal online submission system that is user-friendly and efficient.					
5b	By Dec 2022, develop and implement streamlined and efficient policies for the use of REC facilities by UC and non-UC entities, identify process challenges and develop solutions for easy implementation of partnership models, and implement fees for extension and revenue generation activities at REC facilities .					
5c	By June 2022, identify specialized skill sets that are needed across multiple RECs, and post a list of these services and recharge rates on the web page. Examples include but not limited to, infrastructure maintenance and repair (backflow certification, electrical work) web/social media support and safety training/tracking.					

REC System Goal 5 Optimize REC Operations, Policies and Processes

Goal: By Dec 2022, optimize policies, processes, and procedures for performing research and extension activities at the RECs to remove barriers permitting us to attract new users and funded research, and thus elevate the perceived value of the UCANR REC System

Assumptions:

1. Acceptance by the UC community of a simplified research project submission and approval process
2. Availability of funding to implement the proposed policy and processes structural changes
3. Available bandwidth and flexibility of the REC system business office and other ANR units (FPM, CSIT,CS, RPM, and PSU) to take on additional work
4. Willingness of UC campuses to aid in identifying tools and best practices for financial planning and facility usage
5. Acceptance of more centralized policies and processes by individual RECs as well as the centralized approach being adaptable to unique aspects of individual RECs
6. Willingness of REC employees to assist other RECs.

Metrics and Targets:

1. Reduce duplication of effort on unnecessary processes; target = 8% average decrease in admin. costs across the REC system by Dec 2022
2. Increased use of employee skills across all RECs; target = 10% increase in the dollar amount of salary transfers between RECs Dec 2022
3. Increased use of RECs for research and extension activities; target = 5% increase in the dollar amount of R&E income in both 21-22 and 22-23, and an additional 5% for extension usage in 23-24.

REC System Goal 6 Increase Utilization & Visibility of REC System

Implementation Lead/Team: **Lagrimini,** REC Directors

Goal: Increase visibility of the REC system via targeted outreach and advocacy campaigns among relevant scientific and educational organizations to develop and expand partnerships, encourage new users, and bring new funding by January 2024

Opportunity:

The REC system is under-utilized by researchers on some UC campuses and there is potential to also benefit from greater recognition by other potential users including the CA State University and Community College systems as well as other university systems and governmental agencies. This large untapped pool of scientists and educators could benefit from knowing about the RECs and how to work with them. Increasing visibility of the REC system among these groups will help increase collaboration and utilization by new users for both research and extension purposes, bring new revenue for financial stability, and increase the public value of the RECs by strengthening and expanding the vital role of the REC system in answering key questions for California and beyond.

Proposed Solution:

Develop a key campus-based Lead Scientist (LS) role for each REC to develop tighter linkages with UC campuses. Conduct various methods of outreach (surveys, workshops, personal contacts) to relevant audiences (researchers, commodity groups, agencies, legislators, educators) to determine best targets (individuals and organizations) for outreach and collaboration. Use this input to craft and enact targeted outreach plan and use ongoing feedback to continually improve successful approaches. Develop regional networks to foster deeper collaboration. Partner with relevant educators, scientists, industry groups, and various stakeholders to solicit information and develop ongoing relationships. Work in concert with Strategic Communications, Advocacy, and Development Services.

Benefits:

1. Greater awareness of REC system among audiences including academics, educators, students
2. Greater utilization of REC system by scientists, educators, and students, as well as relevant non-profit, governmental, and academic organizations leading to increased revenue and improved financial stability
3. Greater awareness of the public value and impacts of ANR as a whole, improved working relationships with a broad range of collaborators

#	Goal/Key Strategies & Timeline	20-21	21-22	22-23	23-24	24-25
6a	By December 2021 Create Research Advisory Committee (RAC) and REC Lead Scientist (LS) in charge of advocating for REC within relevant academic societies, institutes, and educational organizations, and develop systemwide consortium of REC LSs and Directors in semi-annual meetings to share ideas and coordinate planning and actions					
6b	By December 2021 implement targeted survey of relevant individuals and organizations and use results to identify and enact best potential outreach methods to engage desired audiences (sponsorships, advertising, memberships, conference participation, personal contact)					
6c	Starting by December 2021 develop an engagement plan for directors, supporters, and UCANR leadership to engage on a continuing basis through workshops and consultations with universities, industry groups, scientific organizations, legislators, and governmental agencies to get feedback and generate ideas for future direction and potential collaborations					
6d	By June 2022, in partnership with Strategic Communications, develop and disperse concise information packages (printed, digital, online) with asset inventory, climate data, etc. across targeted organizations and individuals to highlight the benefits of the RECs and how to access and use them for educational purposes					
6e	By December 2022, develop initial regional networks (adding to them as new partners come online) of land-based research and extension facilities, both public and private and use these networks to cross-market to various users by placing information about other network members at all partner locations and websites					

REC System Goal 6 Increase Utilization & Visibility of REC System

Goal: Increase visibility of the REC system via targeted outreach and advocacy campaigns among relevant scientific and educational organizations to develop and expand partnerships, encourage new users, bring new funding by January 2024

Assumptions:

1. Pricing, along with clear and transparent explanation of costs, for outside collaborators that is not prohibitive for non-UC entities and individuals (see Goal #5)
2. There is consistent collaboration between RECs to coordinate activities, learn from others, and build systematic approaches
3. UC researchers will have a true desire and motivation to work with broader range of collaborators outside of UC system to benefit entire state and beyond
4. Non-UC collaborators will increasingly see the value of collaborating with UC, and more specifically ANR researchers, at the RECs
5. There remains an emphasis on education and extension as an important part of the overall mission and programs of RECs
6. There is not a significant decrease in the population of REC-relevant educators and scientists

Metrics and Targets:

1. Number of projects; target = 15% annual increase over 2019/2020 number of 271
2. Number of new projects relative to total projects; target = 10% annual increase over 2019/2020 number of 56
3. Number of total users; target = 10% increase over 2019/2020 number of 157 by 2022
4. Number of first-time users; target = 10% annual increase over 2019/2020 number of 38
5. REC funding from users; target = 15% annual increase in over 2019/2020 numbers ($2,133,908)