

Desert Research and Extension Center **STRATEGIC PLAN**

2017 - 2037



University of California
Agriculture and Natural Resources

Research and Extension Center System

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INTRODUCTION

The Desert Research and Extension Center (DREC) is one of the University of California (UC) Division of Agriculture and Natural Resources' (ANR) nine Research and Extension Centers (RECs). The REC system is a strong, vibrant organization of research and education academics supported by extraordinary research management capacity to conduct agriculture, natural resource and human resource programs of the highest quality science to foster healthy people and thriving communities. The centers, located throughout California's various climatic zones and representing nearly every type of agricultural and natural resource system in California, offer **University researchers places to conduct field experiments and outreach programs.**

DREC is located on 250 acres of low desert in California's Imperial Valley, the southeastern section of the region's Sonoran Desert. The Imperial Valley produces most of the nation's green vegetables during the winter months. This region receives about three inches of rain per year and is irrigated exclusively from the Colorado River. The center has strong partnerships with diverse stakeholder groups locally and in Arizona and Mexico.

DREC focuses on advancing irrigated desert agriculture, livestock environmental and feedlot management, and crop management in arid regions. Research includes vegetable crop breeding and culture, irrigation management, soil

salinity, improved varieties of grain and forage crops, emerging bio-energy crops, and feedlot cattle studies. DREC is also home to the widely recognized and reaching Farm Smart agricultural education program.

Looking to the future, and striving to be the leader in agricultural and environmental research and extension in the Sonoran Desert region, DREC will conduct the most critical, relevant research, catalyze state of the art technology, and increase community engagement. DREC plans to capitalize on its high speed internet capacity to develop an e-learning campus to connect local stakeholders to UC and access to higher education and training. The center will strengthen local, regional and international collaborations and partnerships to **ensure relevance and financial stability.**

STRATEGY FRAMEWORK

UC ANR Vision Statement

ANR envisions a thriving California in 2025 where healthy people and communities, healthy food systems, and healthy environments are strengthened by close partnerships between the University of California and its research and extension programs and the people of the state. The University remains connected and committed to the people of California, who enjoy a high quality of life, a healthy environment, and economic success in the global economy.

Desert REC Mission Statement

Desert Research and Extension Center conducts innovative and relevant agricultural, natural resources, and environmental research and education programs in arid regions.



STRATEGIC PLANNING PROCESS

REC system overarching goals

In 2012, UC ANR launched a coordinated, future-oriented strategic planning effort for all nine RECs. The strategic planning charge is to develop a long-term and big picture strategic plan centered on stakeholder input. The strategic plan is **designed to serve as a “living document,” a flexible framework to set direction and focus effort over the next 20 years.** The strategic planning effort is intended to be inclusive, future-oriented and with a focus on implementation and assessment of plan deliverables through time.

The REC system’s overall strategic planning effort is structured to include the following guiding goals:

- Develop an effective and organized approach for research and outreach at the centers and among the centers.
- Increase collaboration across the UC ANR network, including collaborations with surrounding University of California Cooperative Extension (UCCE) programs.
- Engage the local community in planning and implementation (local community is not necessarily place-based but also subject area-based).
- **Engage partners not previously affiliated** (e.g., non-ANR UC campuses, CSUs and other colleges, agencies, organizations).
- Align the REC strategic plan with the UC ANR Strategic Vision 2025.
- Develop an effective communication and outreach program to increase visibility and programmatic impact of the REC system.

- Ensure REC resources are effectively and efficiently utilized, and explore new and diverse opportunities.
- Reconstruct the REC system identity by enhancing programming and facility resources.

Planning process

In the fall of 2016, an eighteen-member strategic planning committee was formed (see table next page) with members broadly representing major DREC stakeholder groups. These core committee members served as assessment and feedback links with the diverse stakeholder groups vested in the long-term future of DREC. In November 2016, the DREC Strategic Planning Committee kicked off its strategic planning process that included assessment, strategy formulation and implementation accountability. The committee had four, one-day, **in-person meetings. The first meeting provided an overview of UC ANR’s vision, the UC REC system’s long-term goals, and DREC’s mission, history, and operations.** The committee conducted a situational analysis that included obtaining input from other key stakeholders to identify DREC’s strengths and challenges, as well as outline potential future opportunities. The second meeting focused on understanding and exploring the stakeholder input and synthesizing this input into broad strategic directions. **The third meeting focused on refining the scope of the strategic directions through developing goals and key actions associated with each strategic direction.** Committee members then went

back to key stakeholder groups to get feedback on the committee’s proposed strategy, which was discussed during the fourth meeting and helped refine the content of the draft strategic plan. The committee then finalized the draft strategic plan including the implementation accountability elements, e.g. intended outcomes, implementation responsibility and deliverables during the summer of 2017.

Implementation of strategic plan and assessment of outcomes

Early in the REC system’s strategic planning process, it was recognized that the strategic planning process must be intimately linked to a streamlined and executable implementation and assessment plan. Toward this end, committee members were asked to help identify deliverables associated with each key action as well as the persons/organizations with implementation authority. This broad matrix that links strategic directions, goals, and actions with implementation responsibility and deliverables will be used as the framework for identifying implementation priorities and assessing implementation progress through time. The DREC Director in conjunction with REC system administrators will develop annual priorities for plan implementation. Deliverables associated with goals and key actions will be used by REC administrators and the DREC Director to jointly set outcome targets and annually review progress toward agreed upon priorities.

COMMITTEE MEMBER	COMMITTEE MEMBER STAKEHOLDER AFFILIATION	STAKEHOLDER GROUPS THAT PROVIDED INPUT	
Jairo Diaz-Ramirez, Chair	UC ANR Desert Research and Extension Center, Director	• Universidad Autonoma de Baja California, Mexico	• San Diego State University, Imperial Valley campus
David Bradshaw	Imperial Irrigation District, Assistant Water Manager	• Imperial Irrigation District	• U.S. Bureau of Reclamation, Yuma AZ*
Khaled Bali	UC ANR Kearney REC, UC Cooperative Extension Specialist in Irrigation Water Management	• Universidad Autonoma de Baja California, Mexico	
Oli Bachie	UC Cooperative Extension Imperial County, Agronomy Advisor and County Director	• DREC Research Advisory Committee	• Sugar Beet Growers Association
Claudia Diaz	UC Cooperative Extension Riverside County, 4-H Youth Development Advisor	• Imperial Valley Unified School District, Board of Trustees	• Imperial Valley Economic Development Corporation
		• Imperial County Superintendent of Schools*	
Samuel Sandoval	UC Davis, Department of Land, Air, and Water Resources, Professor and Cooperative Extension Specialist in Water Resources	• UC Davis CE Specialists and Agricultural Experiment Station faculty	
Ray Anderson	USDA- Agricultural Research Service (ARS), Salinity Research Soil Scientist	• USDA-ARS, Salinas, CA	• USDA-ARS, Madison, WI
Alexander Putman	UC Riverside, Department of Plant Pathology and Microbiology, Cooperative Extension (CE) Specialist in Plant Pathology	• UC Riverside, Department of Plant Pathology, CE Specialists and Agricultural Experiment Station faculty	• Melon Commodity Board
		• Lettuce Commodity Board	• Carrot Board
Al Kalin	Grower in Brawley, Imperial County	• Imperial County Farm Bureau, including TMDL Program (total maximum daily load)	• Onion and Garlic Board
Kay Pricola	Imperial Valley Vegetable Growers Association, Executive Director	• Imperial Valley Vegetable Growers Association	• Cantaloupe Board
Richard Zinn	UC Davis, Department of Animal Science, Agricultural Experiment Station faculty and professor	• California Cattlemen's Association	• Imperial County Air Pollution Control District
Anita Oberbauer	UC Davis, Department of Animal Science, Agricultural Experiment Station faculty, professor and Department Chair	• UC Davis, Department of Animal Sciences	• Organic growers
		• UC Davis Department. of Biological and Agricultural Engineering	• Cattle producers and consultants
Robert Hutmacher	UC West Side Research and Extension Center, Director	• Alfalfa Commodity Board	• Food safety advisers
Fernie Miramontes (Ex-Officio)	UC Desert Research and Extension Center, Superintendent (retired)	• UC Davis, Department of Plant Sciences	• Meat producers
Deb Driskill (Ex-Officio)	UC Desert Research and Extension Center, Business Manager	• Imperial County Ag Commissioner	• UC Cooperative Extension Advisors
Lisa Fischer (Ex-Officio)	Director, UC ANR Research and Extension Center System		• University of Arizona
Katherine Webb-Martinez (Facilitator)	Associate Director, UC ANR Program Planning and Evaluation		• USDA Natural Resource Conservation Service
Lauren McNees (Staff)	Analyst, UC ANR Program Support Unit		

*contacted but no response



STRATEGIC DIRECTION #1

Lead crop and animal agriculture and environmental research in the Sonoran desert region

DREC is located in the southeastern corner of California in the Sonoran Desert which covers approximately 100,000 square miles of California, Arizona, and most of the states of Sonora and Baja California, Mexico. DREC's unique niche for arid agriculture and environmental research were identified as major strengths by stakeholders. The focal area is both on the climate's effect on agriculture as well as agriculture's impact on the environment. Research areas of regional and international interest include agricultural adaptation to climate change; plant breeding; livestock, feedlot and manure management; water, salinity, and nutrient management; organic agriculture; and watershed management. Strategic direction #1 identifies goals and key actions that will enable DREC to be the prime location for agriculture and environmental research in arid regions.

Goals

1. Advance research and extension on agricultural adaptation to climate change.
2. Leverage unique winter climate for crop research and nursery and plant breeding opportunities for both private and public entities.
3. Diversify and increase relevant animal related research for projected future challenges.
4. Improve feedlot/feed mill facility.
5. Expand research and extension in water conservation and salinity and nutrient management.
6. Be the bridge between the local agricultural community and the drainage effects on the Salton Sea.
7. Maintain and improve infrastructure.

Intended Outcomes

- Methods for agricultural adaptation to climate change are developed and disseminated.
- Increase in nursery and plant breeding are adopted by industry and growers.
- The DREC feedlot/feed mill facility is fully utilized and meets stakeholder needs.
- Expanded water conservation and salinity and nutrient management research and education results in water savings and improved water quality.
- Increased research and extension on agricultural drainage effects on the Salton Sea improves management practices and ultimately water quality.

STRATEGIC DIRECTION #1

Goal 1: Advance research and extension on crop and animal agricultural adaptation to climate change

KEY ACTIONS	IMPLEMENTATION RESPONSIBILITY	DELIVERABLES
A. Identify and develop partners to conduct research on extreme heat tolerance and adaptation	DREC Director, REC System Director, and UC and non-UC academics	<ul style="list-style-type: none"># of new partners for research on extreme heat tolerance and adaptation
B. Identify funding opportunities and collaborators in the Sonoran desert region to leverage resources	DREC Director in coordination with DREC's Research Advisory Committee (RAC) and regional partners	<ul style="list-style-type: none">Increased funding for crop and animal agricultural adaptation to climate change

Goal 2: Leverage unique winter climate for crop research and nursery and plant breeding opportunities for both private and public entities

KEY ACTIONS	IMPLEMENTATION RESPONSIBILITY	DELIVERABLES
A. Stay relevant to consumer preferences and industry trends by working with growers and commodity associations and groups	DREC Director in coordination with UC ANR, researchers, and industry stakeholders	<ul style="list-style-type: none">Findings from input from growers and commodity associations and groups
B. Identify top research needs for crop, nursery and plant breeding	DREC Director in coordination with CE Specialists and Advisors	<ul style="list-style-type: none">Summary of existing needs assessmentsFindings from input from growers and commodity associations and groups
C. Promote the many and diverse crops that grow at DREC to the identified clientele and key commodity groups	DREC Director and DREC staff in coordination with UC ANR, researchers, and industry stakeholders	<ul style="list-style-type: none">List of key nursery commodity groups and other clienteleIncreased marketing materials promoting crop research and nursery and plant breeding opportunitiesIncreased awareness of crop research opportunities grown in the winter; findings from survey of growers and commodity associations and groups
D. Identify and secure equipment necessary to support the research	DREC Director and Superintendent in coordination with REC System Director, researchers, and industry stakeholders	<ul style="list-style-type: none">List of available equipment to support this type of research

Goal 3: Diversify and increase relevant animal related research for projected future challenges

KEY ACTIONS	IMPLEMENTATION RESPONSIBILITY	DELIVERABLES
A. Conduct needs assessment to identify high priority topics for the Sonoran desert region livestock industry	UCCE Imperial County and DREC Director	<ul style="list-style-type: none">Findings from survey of livestock industryIncreased number of research projects on high priority topics
B. Increase awareness of DREC's relevance to local livestock industry	UCCE Imperial County and DREC Director working with key academics	<ul style="list-style-type: none">Marketing materials and outreach methodsIncreased reachFindings from survey of livestock industry
C. Identify and expand partnerships for researchers, industry and funding entities	UCCE Imperial County and DREC Director working with academics and industry stakeholders	<ul style="list-style-type: none"># of new livestock industry partnerships

Goal 4: Improve feedlot/feed mill facility

KEY ACTIONS	IMPLEMENTATION RESPONSIBILITY	DELIVERABLES
A. Develop long-term funding sources for the facility	DREC Director and REC System Director working with ANR Development Services, UC Davis Department of Animal Science, and industry and government partners	<ul style="list-style-type: none">Multi-year fund development plan
B. Promote REC as facility for feedlot research	DREC Director and REC System Director working with ANR Communications Service	<ul style="list-style-type: none"># of marketing materials developed# of projects and collaborations on feedlot research at DREC
C. Utilize REC as a demonstration site for state of the art feedlot technologies	DREC Director in collaboration with academics and industry stakeholders	<ul style="list-style-type: none"># of demonstrations of precision agriculture at DRECParticipationOutcomes
D. Secure technologies to remain relevant and state of the art to drive research (refer to strategic direction 3 goal 3)	DREC Director in coordination with RAC, academics, and industry partners	<ul style="list-style-type: none">Secured new high-tech equipment

Goal 5: Expand research and extension in water conservation and salinity and nutrient management

KEY ACTIONS	IMPLEMENTATION RESPONSIBILITY	DELIVERABLES
A. Improve infrastructure for irrigation and drainage	DREC Director and REC System Director in coordination with UC ANR Administration	<ul style="list-style-type: none">Improved irrigation and drainage systems
B. Identify most critical issues for Imperial Valley growers given potential future crops and pressures to conserve water including deficit irrigation	UCCE Imperial County, RAC and DREC Director	<ul style="list-style-type: none">Needs assessment
C. Identify researchers working on water, salinity and nutrient management and reach out for potential collaborative projects at DREC	DREC Director and academics	<ul style="list-style-type: none"># of new water conservation collaborative projects
D. Establish partnership with industry to set up demo site for water conservation	UCCE Imperial County, DREC Director, academics and industry partners	<ul style="list-style-type: none">Water conservation demonstration area established
E. Secure technologies to remain relevant and state of the art to drive research (refer to strategic direction 3 goal 2)	DREC Director in coordination with RAC, academics, and industry partners	<ul style="list-style-type: none">Secured new high-tech equipment

Goal 6: Be the bridge between the local agricultural community and the drainage effects on the Salton Sea

KEY ACTIONS	IMPLEMENTATION RESPONSIBILITY	DELIVERABLES
A. Raise awareness of opportunities to conduct Salton Sea research on DREC (e.g. with consultants)	UCCE Imperial County Irrigation Advisor	<ul style="list-style-type: none">Distribution of marketing materials
B. Partner with state and federal agencies and Salton Sea stakeholders	DREC Director, working with RAC and Salton Sea Authority	<ul style="list-style-type: none"># of new partnerships
C. Identify the critical issues to the agricultural community related to the Salton Sea	UCCE Imperial County, DREC Director, RAC, and regional stakeholders	<ul style="list-style-type: none">Findings from needs assessment survey of agricultural community

Goal 7: Maintain and improve infrastructure

KEY ACTIONS	IMPLEMENTATION RESPONSIBILITY	DELIVERABLES
A. Conduct regular short and long term capital needs assessments	DREC Director and Superintendent, working with ANR Facilities, Planning and Management	<ul style="list-style-type: none">Consistent and up to date capital needs assessments
B. Improve the feasibility of sharing infrastructure/ equipment between RECs (e.g. funding, availability)	DREC Director and Superintendent, working with REC Directors	<ul style="list-style-type: none">Increased frequency of equipment sharing
C. Secure technologies to remain relevant and state of the art to drive research (refer to strategic direction 3)	DREC Director in coordination with RAC, academics, and industry partners	<ul style="list-style-type: none">Secured high-tech equipment



STRATEGIC DIRECTION #2

Increase outreach and education through e-learning campus

High speed internet capacity allows educational opportunities including interactive environments to support learners, connect local stakeholders to UC and world information resources, and improve access to higher education and training. Opportunities for DREC include strengthening agricultural literacy programs for children and adults and improving communication strategies to effectively deliver science-based information that benefit stakeholders. Strategic direction # 2 identifies goals and key actions that will enable DREC to increase collaborations, community engagement and education to better involve stakeholders with DREC programs, and provide relevant educational opportunities that fit the needs of a large and highly diverse audience in the region.

Goals

1. Capitalize on and strengthen Farm Smart program.
2. Engage community college and university students in the U.S. and Mexico.
3. Strengthen outreach and education to the regional agricultural community.
4. Increase the visibility of DREC.
5. Secure new educational infrastructure for e-learning campus.

Intended Outcomes

- DREC better meets clientele needs and measures expanded outcomes and impact.
- Research is advanced and student achievement is improved.

STRATEGIC DIRECTION #2

Goal 1: Capitalize on and strengthen Farm Smart program

KEY ACTIONS	IMPLEMENTATION RESPONSIBILITY	DELIVERABLES
A. Build capacity to expand and enhance program reach from kindergarten through post-secondary education	DREC Director and program staff working with ANR Strategic Communications, including News & Information Outreach in Spanish	<ul style="list-style-type: none">Increased reach
B. Develop e-learning opportunities for kindergarten through post-secondary education (refer to action 1A above)	DREC Director and program staff	<ul style="list-style-type: none"># of educational programs and activities
C. Strengthen partnership with the Imperial County Office of Education and other county offices on areas of mutual interest	UCCE Imperial County Youth, Family, and Community (YFC) advisor working with DREC Director and County Director	<ul style="list-style-type: none"># of connections
D. Strengthen connection between Farm Smart and REC research projects	DREC Director and program staff in collaboration with academics	<ul style="list-style-type: none"># of research projects highlighted through Farm Smart programming
E. Advance the academic leadership and sustainability of the program	UCCE Imperial County YFC advisor working with DREC Director and County Director	<ul style="list-style-type: none"># of connections with UCCE Imperial CountySecured long-term funding to continue program, i.e. # of grantsComprehensive program evaluation plan and findings

Goal 2: Engage community college and university students in the U.S. and Mexico

KEY ACTIONS	IMPLEMENTATION RESPONSIBILITY	DELIVERABLES
A. Enhance internship program and provide service-learning opportunities for local and regional students through hands-on and e-learning	DREC Director, regional partners, and academics	<ul style="list-style-type: none">Increased # of community college and university student participantsImproved student outcomes
B. Streamline the administrative processes to develop an efficient process and plan of action to enable international students and scholars to participate (e.g. collaborate with the UC Davis international students program)	DREC Director in collaboration with UC ANR Human Resources and UC Davis Services for International Students and Scholars	<ul style="list-style-type: none">Increased # of international student and scholar participants
C. Collaborate in developing and implementing graduate research program in agriculture at Universidad Autonoma de Baja California, Mexico, and include e-learning opportunities	DREC Director and County Director in collaboration with Universidad Autonoma de Baja California administrators	<ul style="list-style-type: none">Collaborative graduate research program in agriculture at Universidad Autonoma de Baja California launched# of participants annually
D. Explore opportunities for shared resources with other academic institutions in the region including San Diego State University – Imperial Valley Campus, Universidad Autonoma de Baja California, Mexico, and Imperial Valley College	DREC Director in collaboration with regional academic institutions	<ul style="list-style-type: none">Shared resources

Goal 3: Strengthen outreach and education to the regional agricultural community

KEY ACTIONS	IMPLEMENTATION RESPONSIBILITY	DELIVERABLES
A. Identify priority topics to better respond to challenges facing regional growers and ranchers	UCCE Imperial County advisors in coordination with DREC Director	<ul style="list-style-type: none">Needs assessmentListening sessionsDocumented critical issues for regional agricultural community
B. Collaborate with growers and other stakeholders as hosts/sponsors	UCCE Imperial County advisors in coordination with DREC Director and academics	<ul style="list-style-type: none"># of collaborative outreach and education events
C. Offer continuing education units, through on site and e-learning opportunities	UCCE Imperial County advisors in coordination with DREC Director, academics, and UC ANR Online Learning Management System	<ul style="list-style-type: none"># of people receiving continuing education units
D. Expand extension events to livestock industry, on site and e-learning	UCCE Imperial County Livestock Advisor in collaboration with key academics, DREC Director, and UC ANR Online Learning Management System	<ul style="list-style-type: none"># of new events to expanded target audiences
E. Increase Extension events for regional growers, on site and e-learning	DREC Director in collaboration with UCCE Imperial County advisors, RAC, academics, industry, and growers	<ul style="list-style-type: none">Updated commodity databaseIncreased # of outreach methods to local agricultural communityIncreased # of educational activities to complement existing opportunitiesIncreased # of updates and presentations to groups such as Farm Bureau, Imperial Valley Vegetable Growers Association, and landowner events

Goal 4: Increase the visibility of DREC

KEY ACTIONS	IMPLEMENTATION RESPONSIBILITY	DELIVERABLES
A. Review and update communications strategy/technologies on a regular basis	DREC Director working with ANR Communications Services	<ul style="list-style-type: none">Communications plan
B. Develop a newsletter with calendar of events and highlight of activities and initiatives via e-mail to keep stakeholders informed and connected	DREC Director and key staff	<ul style="list-style-type: none">DistributionAnalytics
C. Engage Community Educator in REC communications/social media platform	DREC outreach staff and Director	<ul style="list-style-type: none">Increased social media presenceAnalytics
D. Develop symposia and forums, on site and e-learning, to highlight Sonoran Desert regional issues and how DREC can help address them	DREC Director working with, UC ANR's Desert Workgroup, academics and Universidad Autonoma de Baja California, Mexico	<ul style="list-style-type: none">Increased awareness of DREC at the end of these events
E. Host an annual event to intentionally integrate researchers with education and outreach programs	DREC Director and academics	<ul style="list-style-type: none">Annual event
F. Coordinate with UC and non-UC department tours and engage with local stakeholders (i.e., California ag tours)	DREC Director, academics, growers, ranchers, and industry	<ul style="list-style-type: none"># of tours

Goal 5: Secure new educational infrastructure for e-learning campus

KEY ACTIONS	IMPLEMENTATION RESPONSIBILITY	DELIVERABLES
A. Explore funding opportunities	DREC Director working with UC ANR Development Services	<ul style="list-style-type: none">Multi-year fund development plan
B. Develop a facilities plan to include new building	DREC working with UC ANR administration, including Facilities, Planning and Management	<ul style="list-style-type: none">Multi-year fund development plan
C. Identify e-learning equipment needs	DREC Director and program staff in collaboration with UC Learning Center and UC ANR Facilities, Planning and Management	<ul style="list-style-type: none">Multi-year fund development plan





STRATEGIC DIRECTION #3

Catalyze state of the art technology to advance research and extension innovation

Stakeholders envision DREC to be an innovation leader by building on its strength of convening diverse groups to catalyze state of the art technology to help solve 21st century agricultural and natural resources challenges. Stakeholders identified the following three areas as the most critical for technological investment: precision agriculture, irrigation and feedlot. DREC is strategically able to address these because of its unique location (e.g. temperature, humidity, irrigation water, salinity) and the fact it is the largest research feedlot in terms of replication in the United States. Investing in new technology and facilities for research and extension is critical to enhance DREC's ability to attract researchers and deliver programs to a wider audience. Strategic direction # 3 identifies goals, key actions and deliverables that will ensure DREC to be the pioneer facility for researchers to test new technologies and deliver scientific-based information.

Goals

1. Expand precision agriculture capacity to provide research and extension opportunities.
2. Improve infrastructure for irrigation and drainage.
3. Enhance the current technology of the feedlot/feed mill facility.

Intended Outcomes

- Advanced precision agriculture methods and technologies are developed and adopted.
- Cutting edge irrigation and drainage methods and tools are developed and adopted.
- Innovative feedlot/feed mill applied research findings, methods and technologies are developed and adopted.

STRATEGIC DIRECTION #3

Goal 1: Expand precision agriculture capacity to provide research and extension opportunities

KEY ACTIONS	IMPLEMENTATION RESPONSIBILITY	DELIVERABLES
A. Explore funding opportunities to get new equipment (e.g. remote/proximity sensing)	DREC Director working with UC ANR Development Services	<ul style="list-style-type: none">Funding for new equipmentNew equipment
B. Develop partnerships with technology companies	DREC Director working with key academics and industry stakeholders	<ul style="list-style-type: none"># of partnerships with technology companies for precision agriculture technologies
C. Conduct collaborative trainings (e.g. working with ANR's Informatics and GIS Statewide Program, ANR's Precision Ag Workgroup, and industry)	Key academics and DREC Director	<ul style="list-style-type: none"># of collaborative trainingsParticipationOutcomes
D. Build capacity of existing staff to operate the equipment needed to support the research	DREC Director and Superintendent	<ul style="list-style-type: none"># of trained staff to operate precision agriculture equipment
E. Provide outreach and education on precision agriculture to growers	Key academics, UCCE Imperial County advisors and DREC Director	<ul style="list-style-type: none"># of outreach methods for precision agricultureReach of outreach methods on precision agriculture
F. Utilize DREC as test bed/demonstration site for precision agriculture	DREC Director in collaboration with RAC and industry stakeholders	<ul style="list-style-type: none"># of demonstrationsParticipationOutcomes
G. Develop affordable technological solutions for precision agriculture	Key academics and DREC Director	<ul style="list-style-type: none"># of methods/tools developedAdoption of methods/tools

Goal 2: Improve infrastructure for irrigation and drainage

KEY ACTIONS	IMPLEMENTATION RESPONSIBILITY	DELIVERABLES
A. Explore funding opportunities to get new equipment (e.g. flow meters, water quality sensors, irrigation systems)	DREC Director working with UC ANR Development Services	<ul style="list-style-type: none">Funding for new equipmentNew equipment
B. Develop partnerships with technology companies	DREC Director working with key academics and industry stakeholders	<ul style="list-style-type: none"># of partnerships with technology companies around irrigation and drainage technologies
C. Utilize DREC as test bed/demonstration site for cutting edge irrigation and drainage technologies	Key academics working with DREC Director and industry stakeholders	<ul style="list-style-type: none"># of demonstrations of precision agriculture at DRECParticipationOutcomes
D. Identify and introduce new technologies for irrigation and drainage	Key academics, UCCE Imperial County irrigation advisor and DREC Director	<ul style="list-style-type: none"># of outreach methods for new irrigation and drainage technologiesReach of outreach methods for new irrigation and drainage
E. Promote DREC as facility for irrigation and drainage research	DREC Director and academics	<ul style="list-style-type: none"># of marketing materials developed and distributed# of research projects and collaborations on irrigation and drainage at DREC
F. Develop affordable technological solutions for irrigation and drainage	Key academics in collaboration with DREC Director	<ul style="list-style-type: none"># of methods/tools developedAdoption of methods/tools

Goal 3: Enhance the current technology of the feedlot/feed mill facility

KEY ACTIONS	IMPLEMENTATION RESPONSIBILITY	DELIVERABLES
A. Explore funding opportunities to get new equipment and upgrade infrastructure (e.g. lab equipment)	DREC Director working with UC ANR Development Services	<ul style="list-style-type: none">Funding for new equipmentNew equipment
B. Develop partnerships with technology companies on feedlot facility technologies	DREC Director working with key academics and industry stakeholders	<ul style="list-style-type: none"># of partnerships with technology companies around feedlot/feed mill technologies
C. Promote DREC as facility for feedlot research	DREC Director working with UC ANR Strategic Communications	<ul style="list-style-type: none"># of marketing materials developed and distributed# of projects and collaborations on feedlot research at DREC
D. Utilize DREC as a demonstration site for state of the art feedlot technologies	Key academics in collaboration with DREC Director	<ul style="list-style-type: none"># demonstrationsParticipationOutcomes





STRATEGIC DIRECTION #4

Broaden and strengthen collaborations in research and extension

DREC is at the heart of one of the most productive agricultural ecosystems with abundant and reliable freshwater resources and major source of renewable energies like solar, wind, and geothermal. To maintain its importance for Californians, the arid region, and the world, DREC needs to strengthen local, regional and international collaborations and partnerships. Strategic direction #4 identifies goals and key actions to build new and strengthen existing partnerships and collaborations to ensure the financial stability and relevance of the center.

Goals

1. Formalize partnerships with organizations in Mexico and Arizona.
2. Ensure key academic positions are located at DREC and the onsite UCCE Imperial County Office.
3. Improve resources and infrastructure working with stakeholders.

Intended Outcomes

- Increased partnerships and key academic positions located on site result in greater clientele outcomes and impact.
- Increased collaborative research improves the center's relevance and financial stability.
- Increased funding improves infrastructure and supports expanded research and extension programs.

STRATEGIC DIRECTION #4

Goal 1: Formalize partnerships with organizations in Mexico and Arizona

KEY ACTIONS	IMPLEMENTATION RESPONSIBILITY	DELIVERABLES
A. Explore opportunities to reach National Council of Science and Technology in Mexico (CONACYT) and other arid areas	DREC Director in collaboration with partner organizations	<ul style="list-style-type: none">Increased partnerships with other higher education institutions in the Sonoran Desert region
B. Host and sponsor research and educational activities on both sides of the borders with Mexico and Arizona	Academics in coordination with DREC Director and partner organizations	<ul style="list-style-type: none"># of events
C. Sustain ongoing, regular communications to maintain collaborative opportunities and explore areas of mutual interest to increase reach	DREC Director, in collaboration with UCCE County Director, academics, and regional organizations	<ul style="list-style-type: none"># of DREC formal communications with other institutionsIncreased reach
D. Inventory, document and communicate existing trans-border collaborations and partnerships (e.g. number of students, number of publications)	Academics in coordination with DREC Director and Mexico and Arizona partners	<ul style="list-style-type: none">Inventory of trans-border collaborations and partnershipsIncreased communication about trans-border collaborations and partnerships

Goal 2: Ensure key academic positions are located at DREC and the onsite UCCE Imperial County Office

KEY ACTIONS	IMPLEMENTATION RESPONSIBILITY	DELIVERABLES
Coordinate with UC ANR affiliated colleges/school Deans and Department Chairs to develop academic position proposals located at DREC and the UCCE Imperial County Office	DREC Director and UCCE Imperial County Director	<ul style="list-style-type: none">Academic position proposals developed collaboratively with campus partners
Invite academics (e.g. pathologists) from other universities (e.g. University of Arizona) to be involved in onsite research and extension programs to leverage their expertise	DREC Director in collaboration with academics	<ul style="list-style-type: none"># of academics from outside UC ANR working on research or extension at DREC
Explore opportunity to expand existing UC ANR travel funds program to better enable CE Specialists to have ANR network collaborations at the RECs	UC ANR administrators	<ul style="list-style-type: none"># of CE Specialists utilizing UC ANR travel funds program to collaborate at DREC

Goal 3: Improve resources and infrastructure working with stakeholders

KEY ACTIONS	IMPLEMENTATION RESPONSIBILITY	DELIVERABLES
Enhance communication with commodity groups, agencies and private industry to identify funding opportunities	DREC Director working with UC ANR Development Services	<ul style="list-style-type: none">Multi-year fund development plan
Encourage faculty from campuses to be involved in collaborative, onsite research at DREC	DREC Director in coordination with REC System Director	<ul style="list-style-type: none">Increased # of research projects# of new collaborations
Seek capital funds to improve infrastructure	DREC Director working with UC ANR Development Services	<ul style="list-style-type: none">Multi-year fund development planFunding secured for capital projects

UC ANR Desert

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