

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Sustainable Energy

- Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	0%		2%	
111	Conservation and Efficient Use of Water	0%		1%	
123	Management and Sustainability of Forest Resources	22%		0%	
133	Pollution Prevention and Mitigation	0%		1%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		10%	
202	Plant Genetic Resources	0%		5%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	0%		17%	
204	Plant Product Quality and Utility (Preharvest)	0%		6%	
205	Plant Management Systems	0%		3%	
206	Basic Plant Biology	0%		24%	
212	Diseases and Nematodes Affecting Plants	0%		2%	
402	Engineering Systems and Equipment	22%		1%	
403	Waste Disposal, Recycling, and Reuse	0%		1%	
503	Quality Maintenance in Storing and Marketing Food Products	0%		1%	
511	New and Improved Non-Food Products and Processes	0%		16%	
605	Natural Resource and Environmental Economics	22%		7%	
608	Community Resource Planning and Development	34%		0%	
609	Economic Theory and Methods	0%		1%	
610	Domestic Policy Analysis	0%		1%	
611	Foreign Policy and Programs	0%		1%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	0.5	0.0	9.7	0.0
Actual Paid	0.3	0.0	2.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
37471	0	325233	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
37471	0	325233	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
184334	0	8331042	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

UC ANR's integrated research and extension activities will conduct research projects, workshops, education classes and demonstrations, as well as one-on-one interventions. In addition, the programs will use PSAs, newsletters, mass media, web sites and collaborations with other agencies and organizations to create and deliver programs.

2. Brief description of the target audience

- Relevant agency and private-sector partners
- Lawmakers working on issues related to energy
- Members of the public in general
- Agricultural producers of crops for use as biofuels

3. How was eXtension used?

UC ANR academics used eXtension to participate in and contribute to Communities of Practice, to answer "Ask an Expert" questions, and for other networking purposes. The Division looks forward to the re-invention into a system of greater value to California Extension.

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2014
 Actual: 3

Patents listed

1. A Colorimetric Bioessay for Perchlorate
2. Identification of New Genes and Proteins Associated With Plant Cell Wall Deconstruction in the Filamentous Fungus, Neurospora Crassa
3. Maize Mutant Variety with High Glucan Content

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	0	29	29

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Classes/Short Courses Conducted
 Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Workshops Conducted
 Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Demonstrations and Field Days Conducted
 Not reporting on this Output for this Annual Report

Output #4

Output Measure

- Newsletters produced
Not reporting on this Output for this Annual Report

Output #5

Output Measure

- Web Sites Created or Updated
Not reporting on this Output for this Annual Report

Output #6

Output Measure

- Research Projects Conducted

Year	Actual
2014	12

Output #7

Output Measure

- Videos, Slide Sets and Other AV or Digital Media Educational Products Created
Not reporting on this Output for this Annual Report

Output #8

Output Measure

- Manuals and Other Printed Instructional Materials Produced
Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	New sustainable management method adopted by one solar power company.

Outcome #1

1. Outcome Measures

New sustainable management method adopted by one solar power company.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

A new solar farm covering 4,200 acres, formerly dry land farmed was being installed, and it was important to identify which species would provide the appropriate vegetative ground cover within the project site to prevent erosion and provide habitat for endangered species like the kit fox, kangaroo rat and burrowing owl. In addition, long term vegetation management is needed to prevent shading of solar panels and reduce fire risks.

What has been done

UCCE developed a re-vegetation study for the solar farm, working with scientists from Cal Poly and a consulting firm. UCCE helped to set up a grazing trial to determine if sheep could be used to control vegetation instead of mowing or use of chemicals.

Results

The trial was successful and sheep are now used to control the vegetation around the panels. This allows for multi-purpose use including solar energy generation, grazing and wildlife habitat.

4. Associated Knowledge Areas

KA Code	Knowledge Area
605	Natural Resource and Environmental Economics

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

During FY 2014, California continued to face its worst drought in decades. Water supply and quality for agricultural, urban, and environmental systems has become one of the state's biggest challenges. UC ANR has focused efforts to serve as a resource both in offering everything from near-term management advice to farmers and ranchers to the innovative work being carried out by researchers on a vast array of issues from drought resistant crops to snow sensors to climate change.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

UC ANR's quantitative and qualitative outcomes recorded from the evaluation studies are reported under the State Defined Outcomes section.

Key Items of Evaluation

The Report Overview's federal Planned Program summary of accomplishments highlights UC ANR's most significant work during FY 2014, especially the research developments. In addition, significant success stories are reported as qualitative outcomes under the State Defined Outcomes section.