Fertilizer Research and Education Program Pre-Proposal Template

Project Title: Nutrient Management: A Collaborative Approach between Agriculture and Regulatory Programs in the San Diego Region

Key Personnel

Role	Name	Affiliation	Contact Information
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Project Location
San Diego County, CA

Requested Funding Amount
The amount of funding requested is $200,000

Project Duration
Three years

Funding Category
☒ Outreach, Education, and Demonstration
☐ Research and Demonstration

Funding Priority Area(s)

☒ Outreach -1	☐ Research -1B	☐ Research -1D	☐ Research -2B
☐ Research -1A	☐ Research -1C	☐ Research -2A	

B. Project Summary

Problem: Agriculture is a high value component of the overall economy in San Diego County and is primarily composed of specialty crop production. The agricultural community is comprised of mostly small farms, with 69% of farms between 1-9 acres. Agriculture in San Diego area is unique and includes considerable crop and topographical variability; variability in grower experience and knowledge, languages spoken, race, heritage and age also exist. Farms are interspersed with many other uses, including residential, recreational, equine, industrial and preserved land. Agriculture in the San Diego area has long grappled with water quality regulations, particularly those focusing on nitrate contamination of surface and groundwater. Growers in the area are regulated under both the MS4 program and the General Agricultural Order, with many overlapping requirements. The San Diego Region Irrigated Lands Group (SDRILG), a third-party monitoring group, was developed to assist with grower monitoring requirements; approximately 1100 irrigated agricultural producers pay fees for monitoring group membership.
Recently, the San Diego Regional Water Quality Control Board (Regional Board) worked to establish a new Ag Order, including the required statewide implementation of the “Eastern San Joaquin Ag Order” as a condition for San Diego agriculture. There was considerable grower concern and comment regarding the process and after many collaborative attempts between the SDRILG and the Regional Board, staff ultimately found the application of the Eastern San Joaquin Ag Order to be unworkable for the San Diego Region. As a result, the very unusual decision was made by the Regional Board staff to shift the effort from current adoption of the Eastern San Joaquin Order to instead focus on BMPs for water quality management. This proposal is being submitted to analyze the specific BMP needs collaboratively with the regulatory program staff and to provide support that will allow the SDRILG to provide data-driven outreach and education to its members. This will allow for implementation of the most effective BMPs for the unique agricultural operations in our area and for education of the growers as to their effective use.

Impact

1. This project will impact both irrigated agriculture and regulators in the San Diego Region, assisting them in cooperatively meeting the terms of the water quality regulations.

Audience

1. The primary audience for this program is irrigated agriculture with the potential for contributions to nitrate loading in the San Diego Region, focusing on small and less resourced farms.

C. Project Objectives

1. **Objective #1**: Determine where and how BMP adoption will have the greatest impact by reviewing the most common nitrogen management-related violations found during farm inspections by Regional Board and MS4 programs during the past five years. Organize by watershed and prioritize violations that can best be addressed through appropriate BMPs.
2. **Objective #2:** Establish and extend BMPs that will assist growers in meeting regulatory requirements for runoff and groundwater contamination.

D. Approach

Methods

Activity #1: **(Year 1) Data Consolidation:** Program effectiveness will be determined by understanding where and how BMPs can have the most impact on nutrient management. Growers are inspected for water quality compliance under the MS4 program by the county Agricultural Water Quality Program (AWQP). The Regional Board also inspects the growers under the 2017 Ag Order. There is significant overlap between the two inspections.The inspection reports contain specific information on compliance violations and other considerations related to nitrogen management and runoff. Some violations are seen repeatedly and on many farms. Consolidation of this data into a decision-making tool will allow us to more effectively recommend priority BMPs and deliver Education and Outreach as part of this project. Development of a program of adoption of BMPs would be most effective by focusing on the most impactful problems that have been detected frequently and address methods to manage those first. The AWQP has agreed to support these efforts through providing numerical (anonymous) inspection data on violations and the SDRILG can provide (anonymous) data submitted by growers from the Regional Board inspections. Data will be categorized by violation type, farm type (tree crops, nursery etc.), farm size, water source, and watershed location to help us develop a targeted BMP, Education and Outreach program. Annual monitoring data from the SDRILG monitoring program will also be utilized to focus on the most impacted areas.

Activity #2: (Years 2 and 3) Demonstration and Education:
1.Many members of the SDRILG are farming as a secondary activity to another career, so educational materials will be developed to assist growers in learning about basic fertilization, irrigation, water testing, water management and other factors that are identified as problematic to nutrient management.
2. Demonstrations of properly installed BMPs will be established with grower-cooperators and will be used for on-site outreach and educational events.

3.Educational meetings and field demonstrations will be offered in-person, online and in Spanish as many growers' first language is Spanish. All meetings will also be available on-demand to facilitate opportunities for those who cannot attend in person.
4.Newsletters are sent quarterly by both the SDRILG and UC Cooperative Extension in San Diego County and will include information on various topics related to BMPs.
5. The Extension and Outreach program described will be designed and utilized to fulfill the education requirement for members of the SDRILG.

Evaluation: Project success will be determined by successful installation or utilization of appropriate BMPs, reduction in runoff and in nutrient levels in irrigation runoff upon inspection or self-monitoring, meeting attendance, utilization of newsletter information, and meeting educational requirements.

Outreach activities will include:
1.Meetings held at least semi-annually to educate growers and both wet-weather and dry-weather runoff issues

2.Semi-annual in-field workshops during years 2 and 3, where installed priority BMPs can be viewed

3.Quarterly updates published in the SDRILG newsletter and in the UC Cooperative Extension newsletter