Final Report to USDA NRCS CIG Program on Behalf of The University of Georgia

Summary:

The use of Environmental Management Systems (EMS's) is a possible way to help improve farmers' efforts in ensuring environmental compliance. The objectives of this project included evaluating the use of the EMS process on farms in Georgia, identifying and prioritizing environmental concerns, and promoting farm environmental record keeping. Due to difficulty in recruiting row crop producers and fluctuations in project leadership, implementation of an actual EMS system on individual farms proved extremely difficult. While the row crop and dairy farmers we worked with were proactive in resource conservation and environmental protection, they saw little value in establishing true EMS's and were unwilling to invest the time and resources needed to establish farm EMS's. Ultimately however, the project was successful in addressing priority environmental concerns of several dairy producers, communicating the environmental efforts being made by dairy producers to the general public, and providing record-keeping materials to dairy producers to ensure regulatory compliance.

Introduction:

Environmental Management Systems are a process by which a business or industry can assess environmental and business performance in order to continually improve their operation efficiency through environmental assessment, identification of priority concerns, implementation of practice to address concerns, and evaluation of impact to ensure continual improvement. EMS in agriculture has been implemented in other areas to varying degrees of success. Although an EMS plan can vary in complexity depending on the size and type of farm, the basis of the system follows a: plan, do, check, act process. It is consistent with the NRCS conservation planning processes, however, it is farmer led rather than being done by a conservationist.

Reason for Project and Objectives:

Environmental regulatory compliance and the need to encourage farmers to personally identify and address environmental issues while implementing conservation practices were seen as reasons for this project. The specific objectives were:

- Understand farm and watershed-level environmental interactions and impacts
- Assess and prioritize farm environmental concerns
- Implement effective and innovative management practices to address priority concerns
- Keep clear and up-to-date environmental records on cooperating farms
- Enhance communication skills to better manage farm personnel, interact with farm neighbors, and provide environmental leadership for other farmers

Project Location and Size:

A majority of the work for this project took place in a three county area in northeast Georgia (Morgan, Putnam, and Greene). These three counties hold 15% of dairy production in the state and served as the ideal location to work with a large number of dairymen in a close area. Our initial proposal also indicated that we would work with row crop producers in South Georgia. We did conduct meetings with selected row crop farmers as well as with a local conservation tillage group. However, after several attempts at recruiting farmers to participate in the project from that area failed, most of our efforts were focused on the dairy producers.

What was Done:

During initial stages of the project, Dr.'s Bellows and Hawkins met with selected/interested row crop farmers and county agents. The main objective of this meeting was to inform these leaders about the EMS process and to get their cooperation. The result of this meeting left the participants with more questions about the implementation of EMS on row crop farms. Other small discussions occurred after this initial meeting. As a result, a staff member from the National Soybeans Growers Association was invited to be a speaker at the Upper Suwannee Conservation Tillage Association meeting. At this meeting the EMS process was explained by the NSGA staff member. He provided methods, timelines, actions, and expected outcomes he has seen with and from farmers implementing the program in Iowa. Even with this presentation, it was difficult to get any farmer investment in developing and implementing an EMS on their farm.

Shortly after this work had been done, the project's principal investigator, Dr. Barbara Bellows, left the university. Project leadership transferred to Dr.'s Gary Hawkins and Mark Risse for over a year, which hindered initial project development and achievement of project goals.

Work with the dairy industry was initiated during the first year of the project (2007), two meetings were held for dairy producers which allowed for presentation on the concept and purpose of EMS, how to develop an EMS including writing an environmental policy statement, conducting an environmental assessment, and indentifying critical needs. During the first meeting, participants were asked to rank a list of priority environmental concerns and draft an environmental policy statement. The second meeting provided an overview of environmental assessment tools that could be used by dairymen to determine priority concerns. Examples included University of Georgia Farm*a*Syst publications, record keeping, and regulatory assessment tools that allowed participants to evaluate their compliance with environmental policies.

Adam Speir, hired in August of 2008, took control of operation of the grant under direction of Dr. Mark Risse. Upon his hiring, Mr. Speir began to reevaluate the concerns first brought up by dairy farmers back in October of 2007. The primary concerns that were brought up at this time were public perception of the dairy industry and clarification and assistance in regulatory record-keeping compliance. Also, due to a lack of volunteers for involvement in the EMS project, project leaders decided to follow a slightly different approach. A letter was sent out to all the dairy farmers that had previously taken part in meetings explaining that money would be

available to producers if they followed an EMS strategy of creating an environmental policy statement, conduct an environmental assessment, prioritize the results of that assessment, and submit a plan and budget to address the environmental concern. Of the twenty letters sent out to farmers, only one was mailed back to project leaders. This submission proposed the conversion of a diesel irrigation pump to an electric pump which would save money and reduce use of diesel fuel and air emissions and also suggested a no-till grain drill which would be used to decrease erosion risks on pastures.

Rather than using funds for both of these recommendations, a compromise was reached in which assistance would be provided to the farmer for conversion of the diesel pump and efforts would be made through partnership with the Oconee River Resource Conservation and Development Council to provide a no-till drill to be available to all the farmers in the area. Over a one year period, this partnership resulted in two field days, five hundred acres of land planted in clover, fescue, orchard grass, and sorghum, and a low-cost option for farmers across a fourteen county area to provide an environmental benefit to their pastures, fields, and waterways.

Two of the original concerns voiced by the dairy farmers we worked with were public perception of the dairy industry and record keeping requirements. Project collaborators attempted to address these concerns through the development of a video product describing the environmental practices of these farmers and development of a news article describing the dairy farmers' current issues. We also developed dairy-specific record books and distributed these to farmers at several trainings.

The video project was achieved through working with a local production company who was interested in capturing the human dynamic involved with farming and attempting to capture the difficult economic pressures these farmers have been faced with as well as pressures from individuals unfamiliar with farming practices and the importance of such practices as land application of manure. The company conducted interviews of individual farmers and shot footage of daily practices involved in dairy farming, interviewed county Extension agents, shot footage of lagoon pumpouts, and also shot footage of several UGA Extension meetings with farmers and field days that were hosted through this project. The video will initially be shown to the farmers and then will be shown in various venues to the general public.

Through coordination with the Office of Communications in UGA's College of Agricultural and Environmental Sciences, a magazine/newspaper article was developed for publication in various media outlets. The article contained interviews of county Extension agents, Extension specialists, and

Record keeping is an important regulatory compliance component on dairy farms and having complete and current records that are easy to keep updated was a concern by the dairymen involved in the project. In coordinating with collaborator Melony Wilson, UGA animal waste specialist, record-keeping workbooks were created in order to help dairy farmers keep more organized and updated records on nutrient management, lagoon inspections, rainfall, soil tests, and crop rotations. Several trainings were held for dairy producers in the three county area and elsewhere in the state. Producer feedback was used to make changes to the record books in order to better facilitate ease of use for the farmers. At the three trainings held, over 40 farmers were trained on the record books. As a result of compiling materials for the record books, it was

determined that training for Hispanic workers might also be necessary. Hispanics comprise a large percentage of the workforce on dairy farms in the area and these workers also often handle many of the tasks associated with required record keeping. With assistance from Jonael Bosques, Greene County Extension agent, our record books were translated into Spanish along with a presentation on the importance of proper nutrient management. A joint meeting for both English speaking dairy operators and Spanish speaking workers was planned to accomplish the goals of training the operators on record keeping and regulatory compliance and training the workers on why record keeping and proper nutrient management are important. These materials will continue to be used by Extension agents and specialists for training in the future.

With the success of record keeping training for dairy producers in this project, investigators attempted training and outreach for row crop farmers on record keeping. Record keeping for row crop farmers typically consists of fertilizer and chemical use, irrigation use, fuel and energy costs, and costs of crop planting and yields. Row crop farmers often have to keep tax, ownership, and rental records for USDA Farm Service Agency office and insurance records. To provide a means to keep all of this information updated, several copies of a software program known as Easi Suite produced by Map Shots Inc., was purchased to provide to farmers and allow for training. To provide this training, a local crop consultant with experience in using the software was asked to train several farmers on the software.

Education and Outreach:

Meetings and Field Days:

As part of CIG's purpose in disseminating information to farmers, several events were held to educate farmers and demonstrate technology that would benefit their operations. Many of these events were accomplished through partnerships with NRCS personnel and RC&D Council staff. Two formal field days were held to demonstrate the no-till grain drill provided through a partnership with the Oconee River RC&D Council. (Appendix A). The meeting held August 19 demonstrated the grain drill on a pasture overseeding and had approximately 25 people in attendance. This meeting was also filmed for inclusion in the dairy video project previously mentioned. A total of 6 meetings were held during this project to train farmers on EMS and record keeping with 2 meetings demonstrating the no-till grain drill equipment.

March 1, 2007 – Initial meeting with row crop producers held in conjunction with Upper Suwanne Conservation Tillage Alliance to discuss CIG project and EMS principles, 30 attendees

August 28, 2007 – Meeting discussing EMS concepts and purpose with dairy producers, 17 attendees

October 1, 2007 – Follow up meeting with dairy producers discussing EMS principles, prioritization tables for environmental issues, 12 attendees

December 7, 2007 – Meeting with row crop producers and leaders of Iowa soybean growers association to discuss their success with EMS application on farm in Iowa, 19 attendees

September 4, 2008 – Meeting with past participants in the CIG project to reevaluate needs associated with prioritization tables and plan for future goals associated with the project, 10 attendees

July 30, 2009 – Meeting with producers on dairy record keeping and NRCS Conservation Stewardship Program, 8 attendees

August 19, 2009 – No-till grain drill field day, 25 attendees

December 15, 2009 – Meeting with dairy farmers on EMS principles and record keeping workshop, 15 attendees

June 1, 2010 – Irrigation energy conservation workshop with demonstration of no-till grain drill, 20 attendees

August 24, 2010 – Joint English/Spanish workshop on nutrient management and record keeping, 20 attendees

Presentations:

One poster was created as a result of this project and was displayed at the 2009 annual meeting of the Georgia Association of County Agricultural Agents (GACAA). (Appendix B). This poster won an award for its description of work done on this project. Presentations on nutrient management were created and also have been translated into Spanish for use with Hispanic dairy workers. Copies of the first slide of each presentation can be seen in Appendix

Benefits and Drawbacks:

As a result of this project, project coordinators have determined using an EMS approach in agriculture has both benefits and drawbacks to implementation:

Benefits:

- Environmental Management Systems allow a farmer to take personal stock in the overall management of the farm and how their actions may have environmental impact
- EMS allows for continual evaluation and improvement in system operation
- EMS can help facilitate farmer participation in programs such as CSP
- Farmers like the policy statement portion and value the positive PR an EMS provides

Drawbacks:

- The complexity of an EMS will depend on the type and size of farm and number of employees
- Farms often do not have an individual whose sole responsibility would be management of EMS as in a business setup
- Promoting the benefits of an EMS to promote adoption can be difficult before any work has been done

- EMS may be more suitable in farming systems with more regulatory compliance issues and risk (poultry operations over row crop systems for instance)
- Farmers/owners have a hard time grasping the overall concept of an EMS, especially if they try to apply it to operations with multiple parts

Lessons Learned:

As a result of this project using EMS on agricultural operations, we have learned a few things:

- Farmers were interested in the development of environmental policy statements that described their operation and dedication to regulatory compliance
- Likelihood of implementing and EMS on a row crop farm is less likely than a poultry operation or dairy operation
- Having NRCS promote the implementation of EMS in order to receive higher ranking on CSP program would help further promotion of system
- An EMS for agriculture would likely be much less in depth than a third-party audited system used in business or industry
- Farmers are very concerned with public perception of their operations, especially if they are already being good environmental stewards

Conclusions:

Overall, we achieved some successes in addressing aspects of an environmental management system. Farmers were enthusiastic about developing environmental policy statements but we had difficulty in finding farmers willing to go through an entire EMS development process. It is likely that any future use of EMS on farm operations would require financial assistance in going through the work involved in developing the system. It may be possible to require the development of an EMS for inclusion in the CSP program or have a higher ranking for farmers who are using an EMS as they are already following many of the aspects involved in the CSP program.

Appendix A

Materials for Meetings, Field Days, and Articles

Dairy Production Record-Keeping Workshop

Tuesday, December 15

Madison Farm Bureau Building

10:00-12:00

Agenda

10:00-10:05	Introduction	Bobby Smith, UGA
10:05-10:15	Background on EMS Project	Adam Speir, UGA
10:15-10:45	Conservation Security Program	Amos Jones, NRCS
10:45-11:30	Overview of Record Books	Melony Wilson, UGA
11:30-12:00	Q & A	Melony Wilson, UGA

Mrs. Melony Wilson, UGA Animal Waste Specialist, training dairy farmers on record keeping books on December 15, 2009.

Mr. Adam Speir, Ag Pollution Prevention Specialist, discussing the CIG Project and partnership with Oconee River RC&D council to provide no-till grain drill to dairy producers.

Demonstration of no-till grain drill for dairy producers. Drill was provided through partnership with Oconee River RC&D Council.

Ms. Melony Wilson, UGA Animal Waste Specialist, explains to dairy producers the importance of record keeping at August 24, 2010 meeting.

Jonael Bosques-Mendez, Greene County Extension Coordinator, gives a presentation simultaneously in Spanish for Hispanic dairy workers.