

US EPA ARCHIVE DOCUMENT

Primary Category: Environmental Management Systems (EMS)**Title: Profit-Centered Environmental Improvement for Livestock Operations in Texas**

Applicant: Texas Commission on Environmental Quality
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Federal Programs: This project is not being funded by any other federal program.

Regulatory Flexibility: No federal regulatory flexibility will be needed to conduct this proposed project. Federal regulatory flexibility may be required to implement some of the recommendations resulting from the completed project.

Commission Support: This proposal is supported by the Commissioners and Executive Director of the Texas Commission on Environmental Quality.

Project Description

The long term goal of profit-centered environmental improvement for livestock operations is to

Create EMS-based models for livestock operations that improve land, air, or water quality by reducing environmental impacts through: **1)** source reduction; **2)** waste minimization and beneficial reuse; **3)** improved operational practices; and **4)** development of new markets and products.

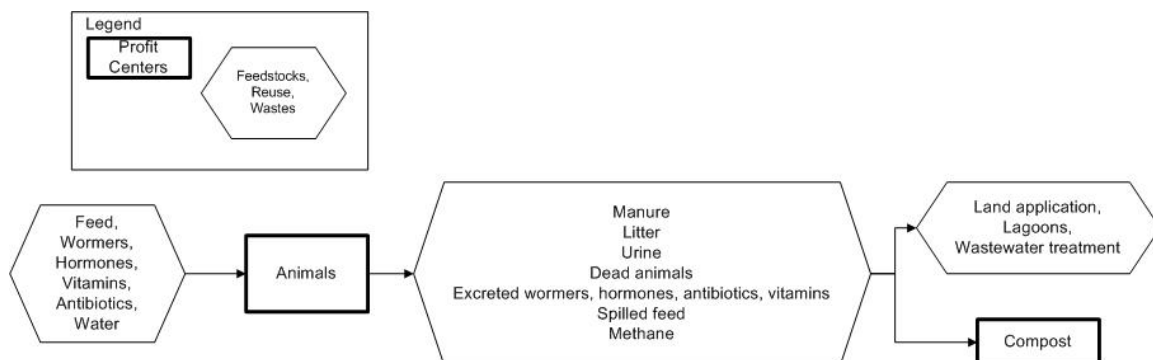
Many CAFOs and AFOs in Texas are located in watersheds that are becoming or already are impaired due to nutrient saturation of soils and runoff resulting from poor manure, wastewater, and hazardous and solid waste management practices. In addition, there are some regulatory and non-regulatory issues regarding air emissions management practices that may be particularly acute for livestock operations located in non-attainment or near non-attainment areas.

The TCEQ's voluntary environmental improvement program, Clean Texas, Cleaner World (CTCW), offers regulatory flexibility and incentives to facilities that implement a certified environmental management system (EMS). Although a few livestock operations have indicated interest in participating in CTCW, none have made significant progress toward a certified EMS.

Attempts in various states to increase participation in voluntary environmental improvement programs including EMS have revealed that the livestock industry often declines to participate unless some financial incentive or benefit will result from their participation. As operations become increasingly less profitable and more regulated and the economics of agriculture come under increasing national and international pressure to change, the livestock industry will be less interested in participating in voluntary compliance and environmental improvement programs that are perceived as burdensome, duplicative of regulatory requirements, and expensive.

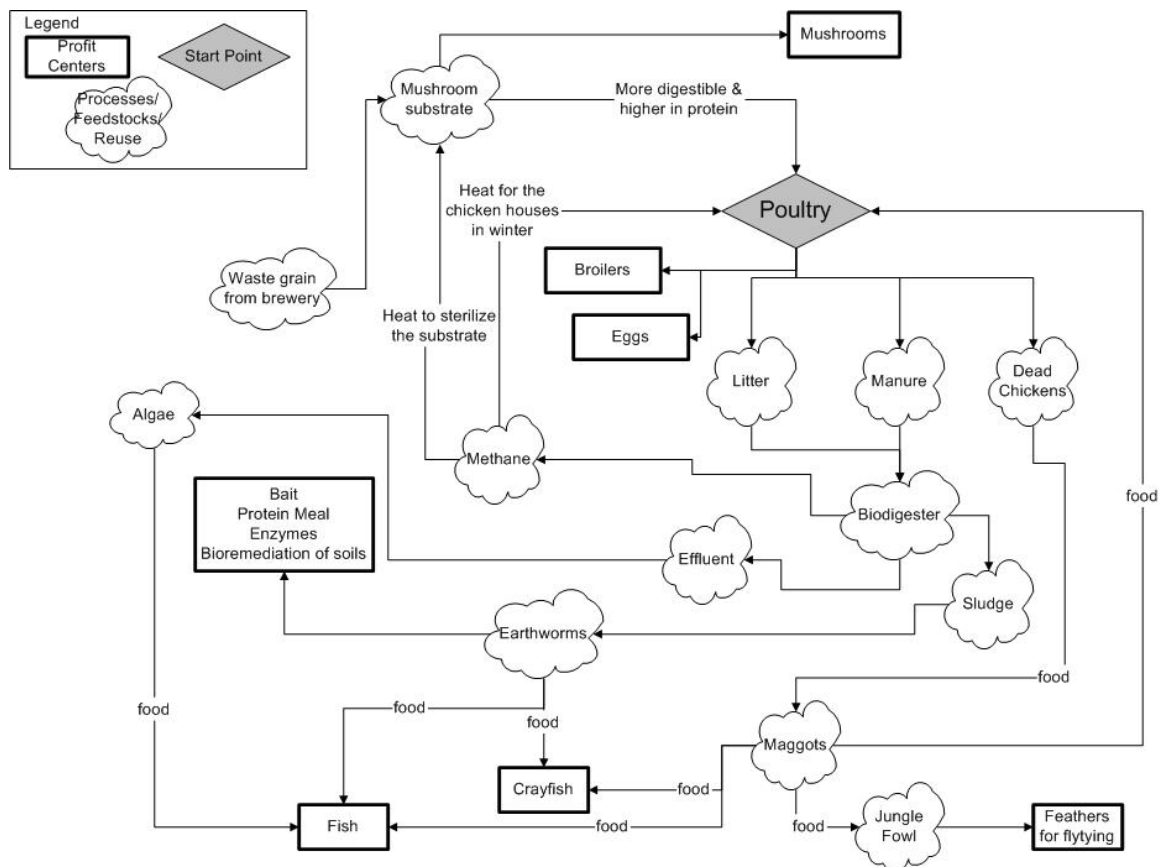
In order to attract participants from the livestock industry into CTCW and encourage them to implement an EMS, this project will develop profit-centered environmental improvement models for beef, dairy, pork, and poultry operations. This project will emphasize changing the traditional economic model as a way to reduce the environmental impacts of livestock operations. An EMS will be used to integrate the environmental impacts and benefits of each new economic model. Successful development in Texas could be applied to livestock operations in other states.

In the traditional livestock operation the economics are straight forward and the regulatory burden is heavy. It looks something like this:



Source: Adapted from EPA and TCEQ Rules and general industry research

A profit-centered model would seek opportunities to reduce environmental impact while making more money. One example of this is the current trend of making compost from manure. However, the cost of transportation (manure to composters and compost to users) is a major consideration, especially given the distances in Texas. What other opportunities for profit besides compost exist? What changes can be made at each step in the traditional livestock operation that would develop new markets and products, increase profits, and eliminate environmental impacts? This profit-centered model for poultry might look more like this:



This leading edge project would be the first step toward accomplishing the long-term goal. It would involve livestock operations, other businesses, and communities in looking for opportunities for profit and economic development while reducing environmental impacts.

The project would seek to answer the following questions: 1) Could implementation of the models impact the need for permitting under federal laws and state statutes by modifying the threshold levels or avoiding triggering the thresholds? 2) What other businesses could be created or partnered with livestock operations to facilitate streamlining the regulatory process due to source reduction or beneficial reuse opportunities, in addition to compost or land application? 3) What permitting requirements would apply to these other businesses? Permitting requirements affected might be those under any of the following federal laws or state statutes: Clean Air Act; Clean Water Act; Solid Waste Disposal Act; Toxics Substances Control Act; Federal Insecticide, Fungicide and Rodenticide Act; Resource Conservation and Recovery Act; Texas Water Code; Texas Health and Safety Code; or Texas Agriculture Code.

The project would further the following EPA goals:

Goal 1 - Clean Air and Global Climate Change

Enteric fermentation in animals is the third highest source of methane (CH₄) according to the EPA. The models could include modifications in feed type and quality as well as number and type of livestock. This could effect CH₄ production. Manure management activities produce both CH₄ and nitrous oxide (N₂O). Alternative management methods and uses of manure could effect the emissions of both gases. Soil management is the primary source of N₂O in agricultural operations. Alternatives to standard soil management could affect the amount of N₂O generated.

Goal 2 - Clean and Safe Water

Land application runoff and lagoon spills contribute to nutrient loading which causes water quality problems. The models would explore alternative uses for the nutrients as well as ways of reducing nutrient inputs.

Goal 3 - Land Preservation and Restoration

The model would explore land use as a necessary part of understanding possible future livestock and related operations. Some recommendations may be developed which could restore, preserve, or improve nearby lands.

Goal 4 - Healthy Communities and Ecosystems and

Goal 5 - Compliance and Environmental Stewardship

The long-term goal of reducing impacts would improve the health of communities and ecosystems and increase compliance and environmental stewardship.

Objectives, Tasks, Deliverables, Due Dates

We anticipate beginning the project upon receiving the award in October, 2006. The project would end August 31, 2009. Completion dates for the listed tasks are shown in parenthesis.

Objective 1: Obtain stakeholder input

Task 1.1: Identify and recruit stakeholders (2/07)

Task 1.2: Conduct five stakeholder meetings for input and feedback on model development (3/07, 6/07, 9/07, 12/07, 3/08)

Deliverables

- Stakeholder group
- Minutes from five meetings

Objective 2: Develop profit-centered environmental improvement models

Task 2.1: Contract with university(ies) to conduct research (2/07)

Task 2.2: Develop models for beef, dairy, pork, and poultry sectors and accompanying business plans and projected cash flow statements based on a specified number of animals such as 100 dairy cows or 100,000 chickens (8/08)

Task 2.3: Identify potential environmental impacts resulting from adoption of models (11/08)

Task 2.4: Calculate, based on NEPT environmental performance indicators, potential changes in air, land, and water impacts identified in the models, e.g., pounds of manure beneficially reused, gallons of water reused, pounds of CH₄ from enteric fermentation reduced, etc. (11/08)

Deliverables:

- Contracted university(ies)
- Model documentation
- Report on environmental impacts and calculations

Objective 3: Identify regulatory issues and develop regulatory implementation proposals

- Task 3.1: Organize workgroup of federal and state regulatory agencies (3/08)
 Task 3.2: Review current regulations, identify opportunities for flexibility and innovation in relation to proposed models (2/09)
 Task 3.3: Make recommendations regarding changes to be considered (4/09)

Deliverables:

- Workgroup
- Report on recommendations

Objective 4: Develop guidance documents

- Task 4.1: Develop EMS guidance documents for each model (7/09)
 Task 4.2: Develop summary sheet for each model (3/09)
 Task 4.3: Develop implementation workbooks for each model (7/09)

Deliverables:

- Four EMS guidance documents,
- Four model summary sheets
- Four implementation workbooks

Objective 5: Conduct outreach

- Task 5.1: Develop outreach plan (04/09)
 Task 5.2: Conduct outreach campaign (7/09)
 Task 5.2: Conduct conference regarding models, EMS guides, and regulatory issues (08/09)

Deliverables:

- Outreach plan
- Outreach campaign
- Conference
- Web pages

Roles and Responsibilities

This grant would involve partnering with stakeholders including state and federal agencies, regulated entities, communities, colleges and universities, trade associations, and non-governmental organizations. These partners would participate in the following ways:

Stakeholders: Provide input regarding livestock industry issues and practices and profit-centered environmental improvement model development and help publicize models when developed

Universities: Conduct research and develop models and accompanying business plans, cash flow statements, and environmental impact analysis; and participate in conference organization and presentations

Federal and state regulatory agencies: Participate in a workgroup to review and make recommendations regarding federal and state regulatory issues and permitting.

TCEQ: Manage the stakeholder and agency groups; work with universities regarding all research, environmental impact analysis, and documentation; develop the EMS guides; conduct an outreach campaign and conference to publicize the resulting models and guides; make the information available on its web site; and prepare and submit progress reports to EPA.

Long-term Outcomes

Beyond the scope of this grant and as a continuation of progress toward the stated long-term goal, the TCEQ would work with livestock operations (either private sector- or university-based) to implement all or portions of the models developed under this grant and reporting on reductions in impacts by those operation using the specific performance measures developed for each model

based on the NEPT Environmental Performance Table categories, indicators, and units. Additionally the TCEQ would be working with other state and federal agencies to implement the regulatory and permitting changes that might be necessary to implement the models in Texas.

As part of this project and beyond the completion date of this grant the TCEQ will assist other states' agencies interested in developing and implementing similar programs.

We anticipate that it would take five to ten years to fully implement one or more of the models. While we anticipate that some environmental improvements would be observed as soon as model implementation began, we expect that the full effects may not be observed for 10 or more years as the increasing changes and benefits would build upon and reinforce each other. We also anticipate that implementation of recommended regulatory changes and permitting process modifications would save significant agency resources in permitting, investigations, and enforcement. The environmental improvements and agency resource benefits should also accrue to other states in which the models and regulatory changes are implemented.

State: Texas

Agency: Texas Commission on Environmental Quality

Project Title: Profit-centered Environmental Improvement

Three-Year Budget

[withheld by EPA]