AGRICULTURAL ENVIRONMENTAL MANAGEMENT SYSTEMS

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Voluntary, self-directed systems of environmental management are proving to be good business tools for a diverse set of manufacturing sectors. Rather than approach environmental management as a necessary cost of doing business to satisfy government regulators, businesses are finding that a proactive, self-directed program of continuous improvement in environmental management has benefits for profits, investor relations, and enlightened regulatory relations. Such environmental management systems (EMS), appropriately adopted, appear to have much to offer farmers.

Why EMS in Agriculture?

Reasons that EMSs merit consideration by the agricultural enterprises include observations that:

- Voluntary, self-directed environmental management systems in some form are part of the next generation of environmental regulation,
- Customers and community stakeholders are increasingly asserting their standing on agriculture's impact on the environment,
- Agriculture's impacts on the environment are significant and increasingly regulated, and,
- Product differentiation based on verifiable environmentally sound production methods offers farmers a strategy for improved profitability.

The next generation of improvements to water and air quality will most likely come from voluntary self-management by businesses, as parts of collaborative agreements between government regulators and individual firms or associations of like firms. The stunning progress in improving environmental quality during the 1970s and 1980s came about because it was possible to identify a relatively small number of relatively important pollutants and polluters. Conditions were so obvious that broad public commitment was relatively easy to orchestrate.

Today most water quality impairment derives from a very large number of relatively small sources scattered widely on the landscape; i.e., nonpoint source pollution. Additionally, some of the most significant environmental impacts, such as loss of wildlife habitat or energy use, while not specifically regulated at the level of the individual business, are significant issues of public concern.

Interest in regulatory reform related to the environment is widespread as governments find it increasingly difficult to allocate resources to enforce existing rules and provide timely and high quality reviews of new proposals. Businesses are increasingly intolerant

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of wasteful regulatory review and compliance requirements as globalization of capital and information flows increases competitive pressures.

Thus the increasingly diffuse nature of pollutant sources, tight government resources, and refined business management are leading both the public and private sectors to explore innovative ways of encouraging environmental stewardship as part-and-parcel of sound business practice.

Farmers in many parts of the country are finding that a range of stakeholders now assert their standing to object to agriculture's contributions to water (surface and groundwater) and air pollution (emissions and odor). This is most readily seen when rural non-farm residents raise objections to new and expanded large-scale livestock facilities near their homes and communities. There are broader examples, though, such as recreational anglers seeking lessened impacts on streams.

Farming is responsible for about 40% of water bodies falling short of the goals articulated 30 years ago in the Clean Water Act. Pollution caused by agriculture is largely nonpoint, and so tracking its origins is difficult. Most soil erosion occurs in rare events, and managing for such worst-case scenarios is difficult in a business that offers relatively low returns on investment. It is not clear the extent to which political interest in increasing environmental regulation of agriculture will prevail in the coming decades.

What does seem likely is that new technologies will improve our ability to monitor environmental performance and ascribe with greater certainty the sources of pollutants. The public's demands on agriculture to demonstrate "due diligence" relative to environmental performance is also not likely to subside. Thus it appears in agriculture's best interest to learn techniques for minimizing negative impacts on the environment and making this goal systemic in management.

Finally, farming within the framework of an EMS may soon play a role in product differentiation, allowing the farmer to obtain a price premium. Organically-grown products are one example of how independent third-party organizations assure consumers that products adhere to certain production criteria or standards. While an EMS is about the system by which a farmer continuously works to improve environmental performance, rather than particular production technology, independent external audits are a component of the complete EMS model.

Wisconsin's legislature passed SB61, creating the "Environmental Results Program," which gives the EMS a role in state environmental regulation. The significance of this for agriculture remains to be seen, but it is possible, for example, that a cheese maker and associated dairy farmers could be granted a unique set of operating conditions by state regulators, as a result of (among other conditions) their following an EMS. Food products made by this collaboration could be labeled with a (yet-to-be-designed) logo that businesses in the product chain are regulated under the Environmental Results Program.

What's an EMS?

An Environmental Management System, or EMS, is a systematic way to manage impacts on the environment that covers all levels of farm management, from daily operations to long range planning. An EMS is farmer-directed and voluntary and focuses on business efficiency.

The EMS process is built on the proven "Plan, Do, Check, Act" model of continual improvement. It ensures environmental matters are systematically **identified, controlled,** and **monitored** so that environmental performance **improves** over time.

An EMS is not a specific document or set of documents, nor is it a specific practice, set of practices, technology or engineering. While all these things are important parts of an EMS, it is the disciplined commitment to continually improving environmental stewardship and business efficiency that make it a true system. Management systems can be used to address additional aspects of farming operations, such as: product quality; worker health and safety; livestock health and welfare; crop production and financial management.

Farmers' decisions and actions on the landscape impact the environment in significant ways. Farmers have a special responsibility in this regard as they manage 100's or 1,000's of acres of land that often includes forests, wetlands and riparian areas. If you stop and think about it, *almost every activity on a farm affects or has the potential to affect the environment*. Increasingly, farmland is also boarded by housing developments and other non-farm land uses that may come in conflict with farming operations.

The goal of an EMS is to ensure that, over time, negative environmental impacts from farming operations are minimized and positive impacts like clean water, clean air and wildlife habitat are enhanced.

Most farms already have many practices related to environmental management in place. Current environmental plans and practices may be recorded and scattered in a variety of file folders, computer disks, three-ring binders, at the LCD or NRCS office, managed by a consultant, or in the farmer's head. By undertaking a formal EMS, a farm would not be duplicating, replacing or negating what has already been accomplished. *Implementing an EMS does not mean starting from scratch.*

With an EMS efforts are organize into a coherent system that includes feedback loops for evaluating effectiveness and making further improvements. It is a system that emphasizes the benefits of sharing information with family, employees, consultants, suppliers, specialists, and neighbors. This sharing of information can lead to greater recognition of the good things already in place to protect the environment and provides fresh ideas that can help improve business management.

Potential Benefits of an EMS:

- A mechanism for finding cost savings and improving efficiency.
- A pro-active atmosphere and commitment to environmental improvement.

- Improvements in employee training, knowledge, responsibility and morale.
- Improvement in communications among family and employees.
- Better organize and integrate ongoing environmental improvements.
- Improved relationships with regulators, neighbors, community members.
- Improved long-term productivity of farmland.
- Opportunity to negotiate lower insurance or interest rates.
- Formal registration or recognition of the EMS as a way to realize market premiums or maintain or obtain access to markets.
- Cleaner water and air, more abundant wildlife and a beautiful, healthy place to live, work and play.

Key Concepts:

- An EMS focuses on improving efficiency and reducing waste
- Farm owners and managers lead their own unique EMS
- It is a thoughtful, deliberate *process,* not a static final product
- It is a commitment to improving all aspects of farm management
- The EMS process can redefine *farmer* leadership in agriculture

For more on EMSs in agriculture see: http://www.uwex.edu/AgEMS/

The Challenge of AgEMS

While most people would agree that the potential benefits of an EMS are laudable, bringing theory into practice on real farms is, however, quit another matter. The development of an EMS takes considerable time and effort directed at thoughtful, deliberate management of a farm's impact on the environment. Time is a very precious commodity on farms. It is difficult for most farm owners and managers to take the time necessary to learn about and incorporate a new approach to business management. A major drawback to the EMS process is that any benefits are not readily apparent and take time to accrue.

An EMS is unlike the adoption of a specific "BMP" that has measurable, predicable outcomes that a farm manager can evaluate. It is difficult for a farmer to spend a lot of time and effort on a major new project where the benefits are ambiguous at the outset. The very largest farms with staff dedicated to the management of the farm business are the most likely to be able to incorporate and benefit from an EMS.

The Wisconsin Dairy EMS Livestock Project (www.uwex.edu/AgEMS/livestock/) has been working with farmers and farm managers researching and testing EMS educational approaches and delivery methods. One of the goals was to create an EMS process that is functional, farmer-friendly and results focused. A simplified process has been developed that incorporates the main components of the ISO 14000 EMS standard, the recognized standard used by businesses world-wide. Collaborators in nine other states have been engaged in similar research in dairy, beef and poultry farms. Educational approaches and AgEMS guidebooks, templates, environmental assessment tools and worksheets have been

designed, through on-farm pilot testing, that address many of the challenges of the EMS process.

Opportunity for "TSPs"

One of the lessons learned is that the development of EMSs on farms, and other small businesses (even the largest farms would be considered small enterprises compared to the typical EMS-certified firm), will require "coaches" to assist farms with EMS implementation. Agricultural consultants, or "technical service providers", could fill this role. If the Green Tier program and similar voluntary, verifiable environmental management and marketing programs gain in popularity there will be a need for consultants versed in management systems and environmental assessment and sustainability.

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The EMS, ISO and the 14000 Standard

The most well-known EMS standard is the International Standards Organization (ISO) 14001. An ISO registered EMS has to conform to the specific requirements of the ISO and will need to be audited and approved before you can enjoy marketing or other benefits. Registration to the ISO standard means that a farm has complied with an internationally recognized process for demonstrating commitments to pollution prevention, regulatory compliance and continual improvement. For more information on ISO 14001, go to: http://www.iso14000.com/

Elements of an ISO 14001 EMS: A Snapshot

- **Environmental Policy -** Develop a statement of your organization's commitment to the environment. Use this policy as a framework for planning and action.
- **Environmental Aspects -** Identify environmental attributes of your products, activities and services.
- **Legal and other requirements** - Identify and ensure access to relevant laws and regulations (and other requirements to which your organization adheres).
- **Objectives and Targets -** Establish environmental goals for your organization, in line with your policy, environmental impacts, views of interested parties and other factors.
- **Environmental Management Program -** Plan actions to achieve objectives and targets.
- **Structure and Responsibility** - Establish roles and responsibilities and provide resources.
- **Training, Awareness and Competence** - Ensure that your employees are trained and capable of carrying out their environmental responsibilities.
- **Communication -** Establish processes for internal and external communications on environmental management issues.
- **EMS documentation -** Maintain information on your EMS aid related documents.
- **Document Control -** Ensure effective management of procedures and other system documents.
- **Operational control -** Identify, plan and manage your operations and activities in line with your policy, objectives and targets.
- **Emergency Preparedness and Response -** Identify potential emergencies and develop procedures for preventing and responding to them.
- **Monitoring and Measurement -** Monitor key activities and track performance.

- **Nonconformance and Corrective and Preventive Action -** Identify and correct problems and prevent recurrences.
- **Records -** Keep adequate records of EMS performance.
- **EMS audit-** Periodically verify that your EMS is operating as intended.
- **Management Review -** Periodically review your EMS with an eye to continual improvement.