United States Department of Agriculture

NRCS Natural Resources Conservation Service

National Animal Agriculture Conservation Framework

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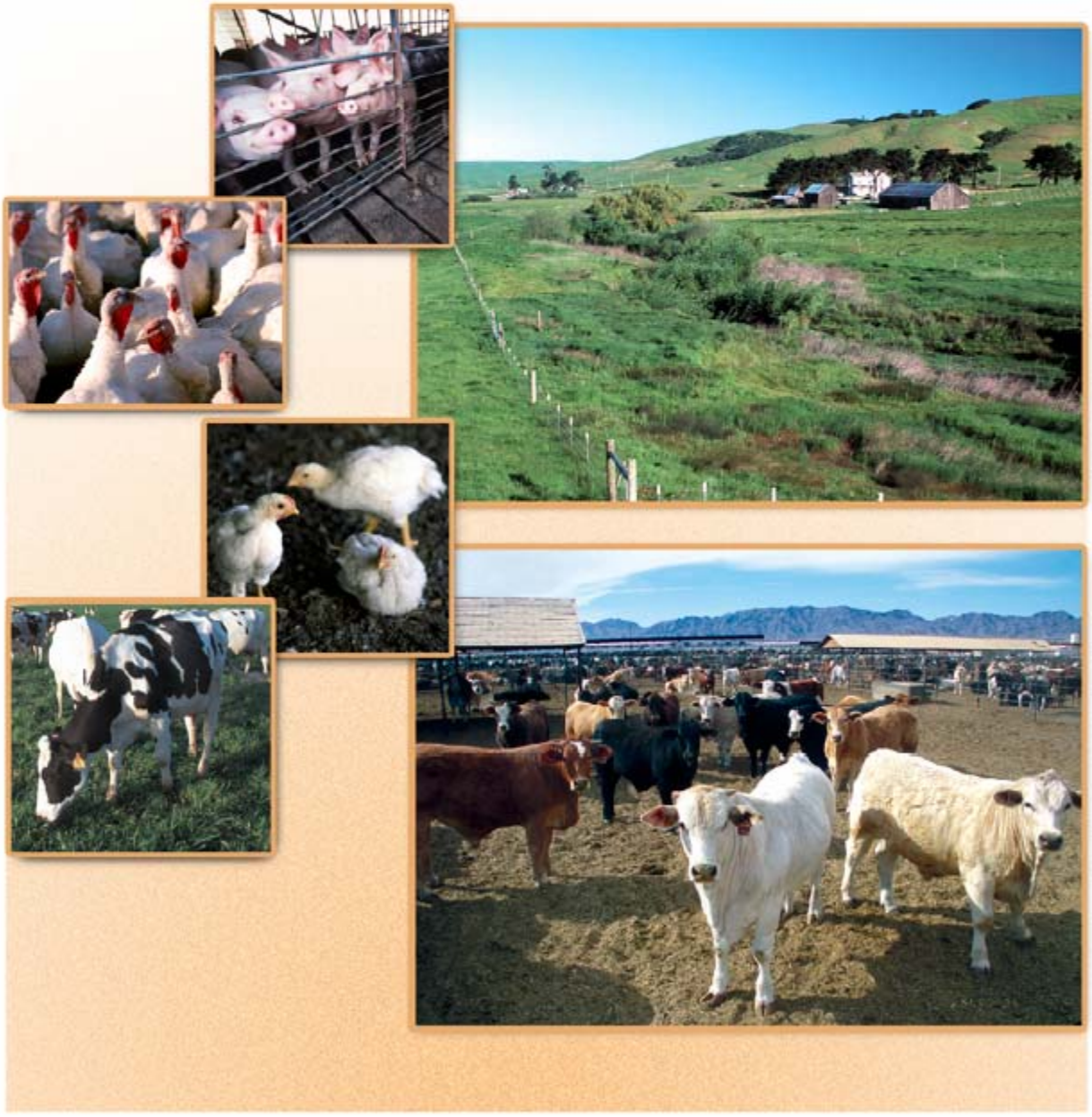

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I. Introduction

American consumers expect a great deal of the nation's food and agriculture system. And there is no doubt that it delivers – more nutritious food with wider variety; improved safety with fewer adverse environmental impacts; and, greater convenience than at any time in our Nation's history.

This dynamic and evolving sector has undergone a shift from the largely commodity focused agriculture of the 20th century to the much different and more demanding consumer-oriented focus of the 21st century. Part of this shift means increased public scrutiny of the interface between production agriculture and the natural environment. Environmental quality means a great deal to Americans, from maintaining water quality in rivers, streams, and lakes to improving air quality and minimizing greenhouse gas emissions. It also means open space and the preservation of farmland, ranchland and the communities that support these land uses.

Today, animal agriculture is responding to many and varied issues ranging from environmental and public health to biosecurity and economic concerns. As we enter the 21st century, the Nation's farm and food system as a whole is experiencing challenges created by an increasingly global economy, overlain with unprecedented rapid technological change.

II. Animal Production and the Environment: Trends and Challenges

Animal agriculture has undergone substantial shifts in structure, size, and productivity in the last century. At the outset of the 20th century, farms and ranches were diverse in their production mix and most included livestock and poultry in that mix. In the 1940s, technological advances promoted specialization and drove remarkable productivity increases in the livestock and poultry sector. Ensuing consolidation and concentration in the livestock and poultry sector resulted in significant declines in the overall number of operations, while productivity continued to rise.

In 1997, nearly 70 percent of the Nation's 1.9 million farms and ranches reported livestock or poultry production – representing 1.3 million operations nationwide. Most of these operations (56 percent) produced few or primarily pastured livestock. Operations with confined livestock types, such as fattened cattle, milk cows, swine, chickens or turkeys, veal, or heifers, accounted for 18 percent of all farms producing livestock and poultry. These confined operations accounted for about 40 percent of the total number of animals units produced – an estimated 38 million animal units in 1997. Grazing operations accounted for the remaining 60 percent of animal units produced. The Natural Resources Conservation Service's National Resources Inventory reported about 522 million acres of grazing land (405 million acres of rangeland and 117 million acres of pasture) in the contiguous states in 2001, about 5 percent less than in 1982.

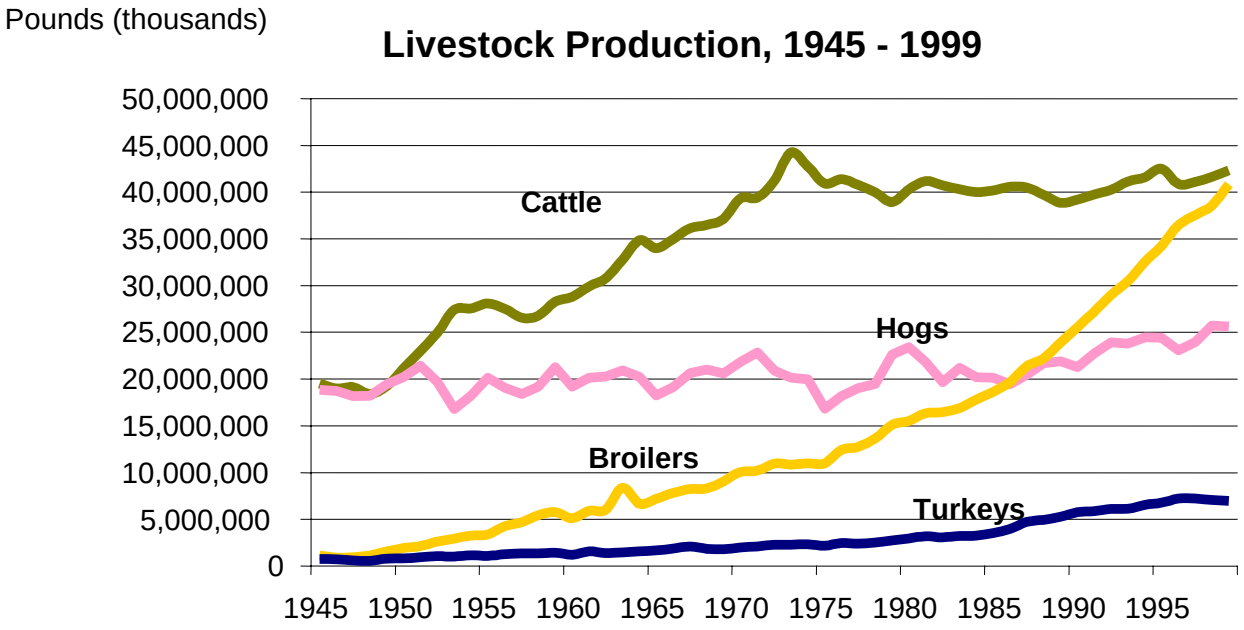
Figure 1 Historical Perspective, 1900 to 1997

Historical Perspective

	Beginning of the Century (1900)	End of the Century (1997)
Number of Farms	5,739,657	1,911,859
Average Farm Acreage	147 acres	487 acres
Livestock		
Percent of Farms Raising:		
Cattle	85 %	55 %
Milk cows	79 %	6 %
Hogs & pigs	76 %	6 %
Chickens	97 %	5 %
Government Payments	- 0 -	$5 billion
Percent Population Living on Farms	39.2 %	1.8% (1990)
Percent Labor Force on Farms	38.8 %	1.7 % (1990)

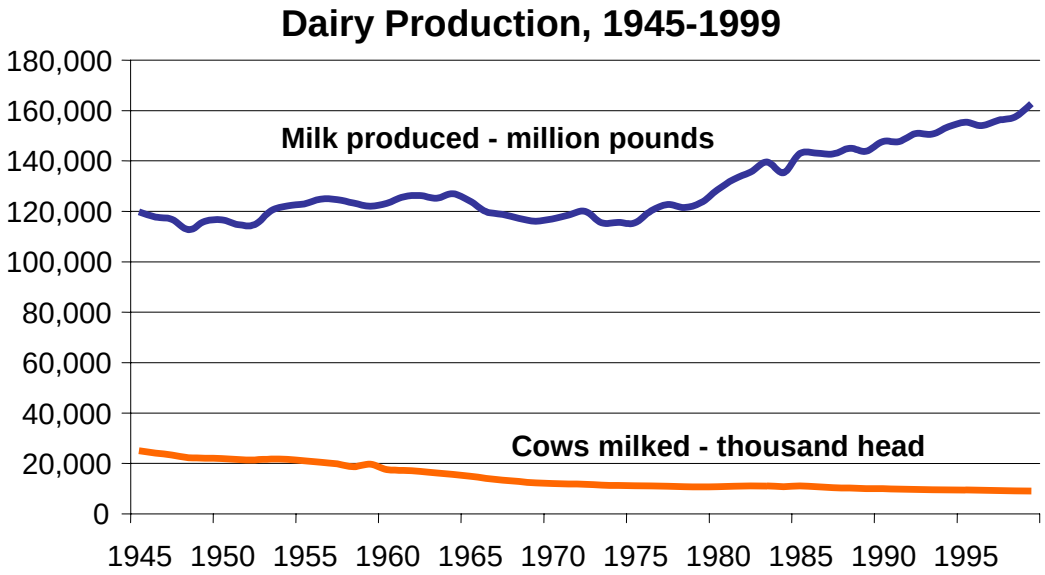
Source: USDA-NASS

Figure 2 Livestock Production from 1945 to 1999



Source United States Department of Agriculture

Figure 3 Diary Production from 1945 to 1999



Source United States Department of Agriculture

Figure 4 Trends in Rangeland, 1982 to 2001

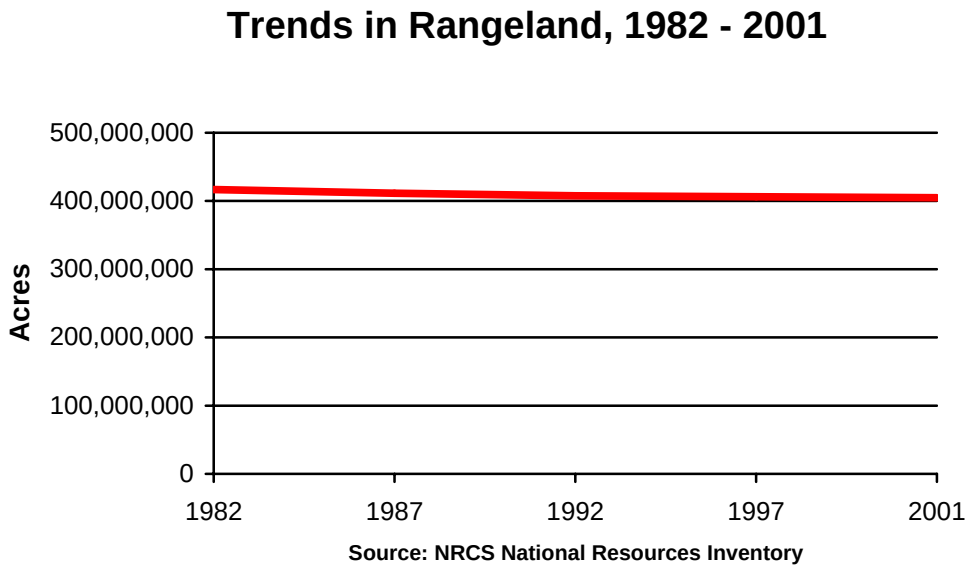


Figure 5 Trends in Pastureland, 1982 to 2001

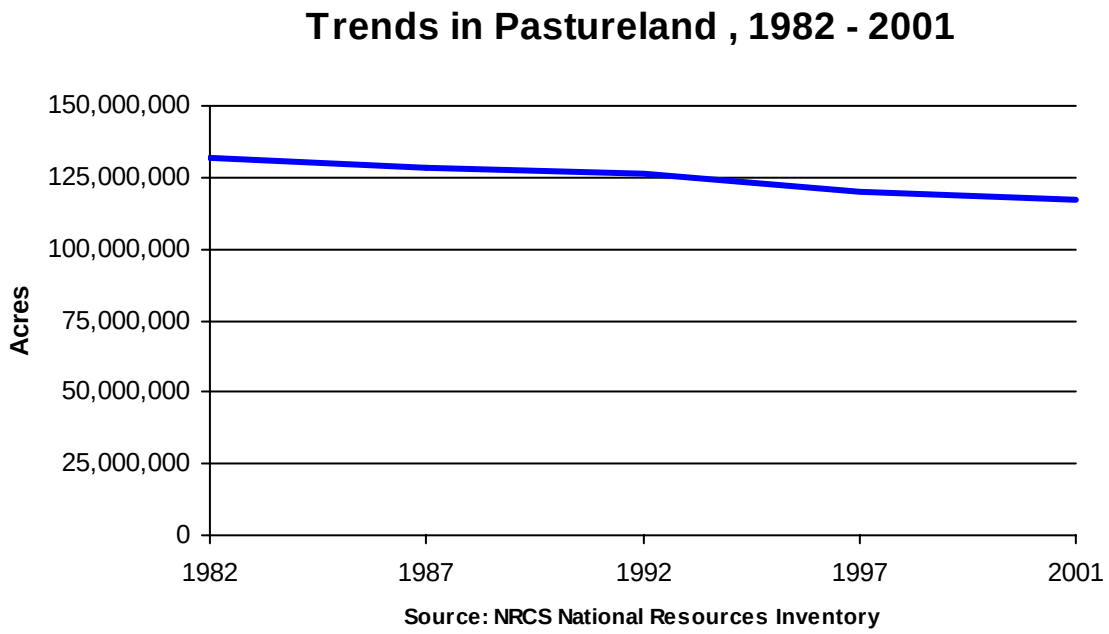
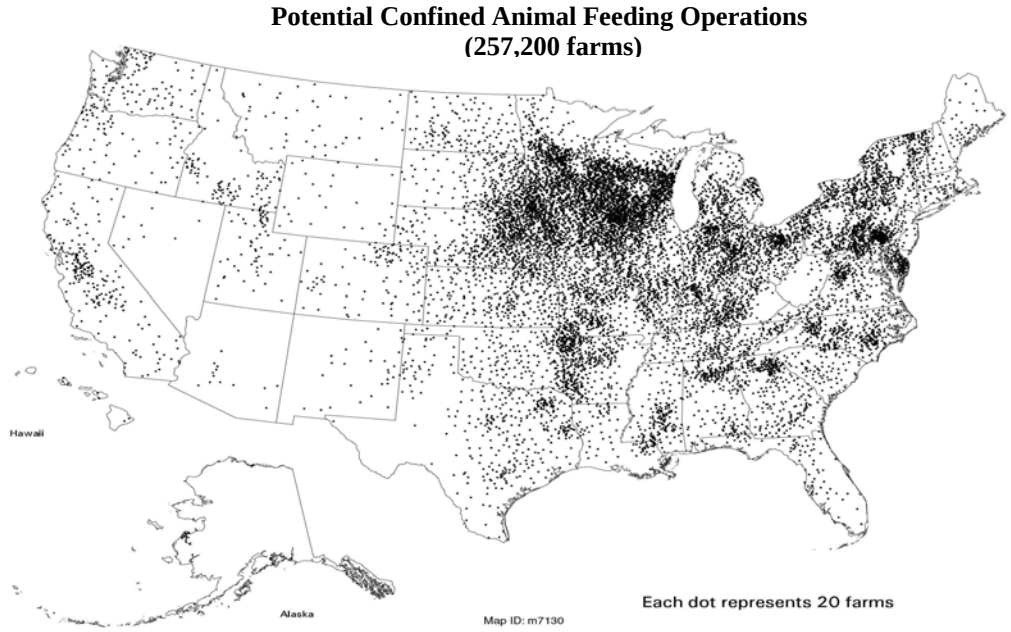


Figure 6 Potential Confined Animal Feeding Operations



Source: United States Department of Agriculture

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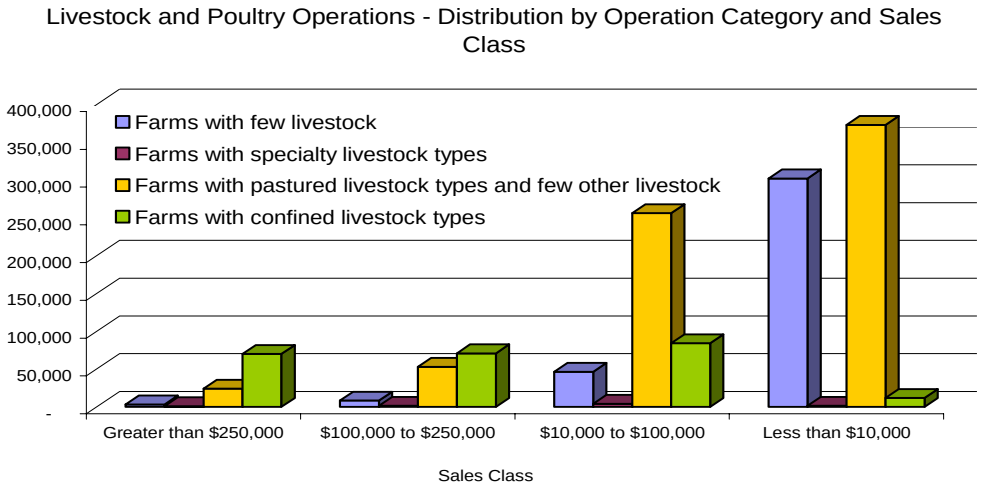
In 2000, animal agriculture generated $100 billion in agricultural revenue, accounting for more than one-half of the total value of agricultural sales. Livestock and poultry returns are a major contributor to the revenues in the Nation's agricultural sector. Nearly 70 percent of the Nation's farms with sales of greater than $250,000 have livestock or poultry as part of their production mix. But the majority of farms and ranchers that include livestock or poultry production as part of the operation have total sales below $250,000.

Today, exports of consumer-oriented, high-value products, such as meats, poultry, and processed products, are growing more rapidly than exports of basic commodities. This export market for meat, poultry, and processed products also is critical to sales of feed grains and oilseeds, because these products are fed to animals before they are processed and exported. In 1990, only 1.4 percent of the total value of U.S. grain output and 1.8 percent of the value of U.S. soybean output was exported as livestock and poultry products. In 2000, those numbers had grown to 4.3 percent and 5.4 percent, respectively. In the past 15 years, U.S. export sales of the three major meats—beef, pork, and poultry—have grown faster than the meat exports of the Nation's competitors. The U.S. has moved from primarily a meat importer ($3.7 billion) to a major exporter ($6.2 billion).

Figure 7 Livestock and Poultry Operation Category and Sales Classes



Source: United States Department of Agriculture

Along with the productivity increases characterized by U.S. animal agriculture, has come increasing scrutiny of the sector's potential impact on the Nation's natural resources. The array of potential environmental issues has grown. Today, concerns are as varied as the sector itself, including:

- Nutrient and sediment pollution of water resources
- Greenhouse gas emissions (e.g., methane, nitrous oxides, carbon dioxide)
- Air quality (e.g., odors, particulates)

- Non-nutrient animal waste issues (e.g., transport and fate of pathogens and pharmaceutically active compounds in manure)
- Wildlife habitat management
- Invasive species management

The science of some of these issues is well understood and there are well-developed production and conservation practices and systems to help producers address their environmental consequences. For some issues, however, scientific uncertainty remains as to their impacts and the best approaches to mitigate their consequences. Generally, there is even less certainty regarding mitigation strategies across these emerging natural resources issues.

Agricultural operations with livestock and poultry vary widely, as do their natural resource management and business needs. However, all of these producers are affected and challenged by society's interest in a quality environment and a healthful and safe supply of livestock and poultry products. The diversity in operators and operations as well as natural resource needs and challenges, makes it clear that a "one-size-fits-all" approach to meeting environmental stewardship needs will not be successful.

III. Animal Agriculture Conservation Opportunities

Environmental stewardship in animal agriculture is not a new idea, nor has it been neglected. Indeed, livestock and poultry producers have been among agriculture's most active adopters of conservation measures.

The core of U.S. Department of Agriculture (USDA) conservation programs features landowners taking the lead. These voluntary programs have a solid track record. The conservation partnership between USDA, conservation districts, state conservation agencies, and other conservation interests assists private landowners and managers in developing and implementing site-specific, science-based conservation plans that work on their farms and ranches, in their communities, and in their watersheds. In 2002 alone, the USDA Natural Resources Conservation Service (NRCS) and its conservation partners worked with farmers and ranchers to help them:

- Plan or implement 8,600 comprehensive nutrient management plans to manage manure, wastewater, and by-products to minimize potential adverse environmental effects;
- Implement resource management systems on 11.9 million acres of grazing land to address grazing land health, soil erosion, wildlife habitat, and water quality and quantity;
- Apply prescribed grazing on 20.5 million acres to improve the quality of forage and promote economic stability through grazing land sustainability;
- Reduce erosion on grazing land resulting in 5.3 million tons of soil saved through erosion control efforts; and,
- Apply nutrient management on 1.6 million acres of cropland and pastureland associated with animal feeding operations.

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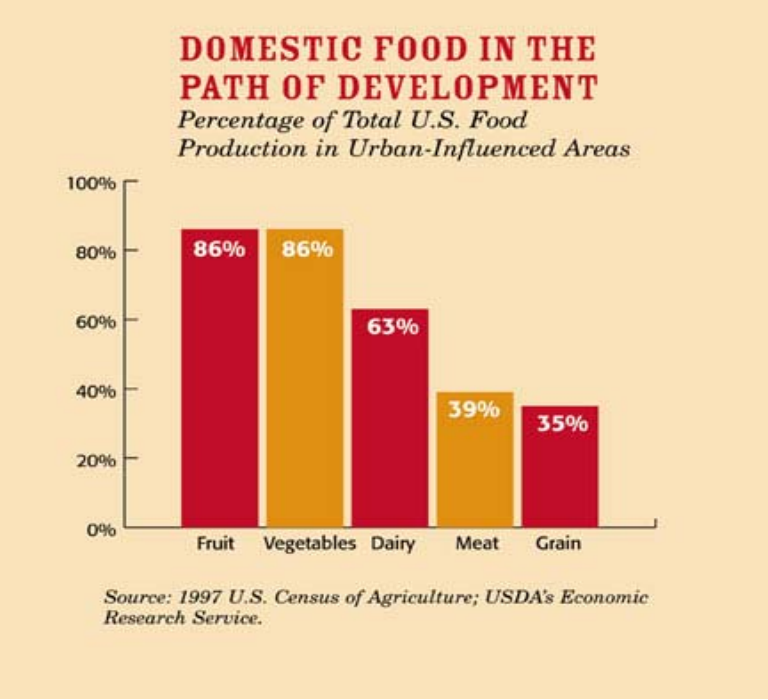
Clearly, farmers and ranchers invest an enormous amount in environmental stewardship. Yet, the challenges continue, driven by a combination of factors including increasing demand for animal agriculture products, changing economic conditions, the advent of new technologies, a dynamic natural
environment, and development pressures bringing population centers in closer proximity to animal production. Significant and highly-charged social conflicts often emerge when animal agriculture land uses intersect with expanding non-farm communities.

Figure 8 Domestic Food in the Path of Development



The effects of cyclical weather patterns, production cycles, and other factors often serve to heighten these tensions.

It is against this backdrop that the Farm Security and Rural Investment Act of 2002 (2002 Farm Bill) was developed and signed into law. Congress recognized the mounting pressures in agriculture, and animal agriculture specifically, and authorized new authorities and historic increases in funding. In the 2002 Farm Bill Managers' Report, Congress specifically articulated that the…*Environmental Quality Incentives Program (EQIP) is a valuable tool to help producers avoid the need for future regulation, and the Secretary shall manage the program to maximize this purpose.* While much of the focus was on the anticipated delivery of new regulations affecting confined animal production, the Managers also pointed to opportunities in grass-based systems to…*encourage the use of grazing systems, such as year-round, rotational or managed grazing systems, that enhance productive livestock operations.*

Thus, with regard to regulatory challenges, EQIP has two compatible, if not somewhat different, objectives. The first is to help producers comply with local, State, and Federal regulatory requirements. The second is to help producers address natural resource concerns in a manner that makes regulatory action unnecessary. These, along with the many other EQIP objectives, can and should be pursued. The challenge for USDA is to manage the program expectations to ensure the full range of EQIP objectives receive the attention they merit, while minimizing the potential disappointments that can occur if program applicants are denied assistance because the total financial need to address all objectives exceeds EQIP's available funding.

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Farm Security and Rural Investment Act of 2002 (PL107-171)
Environmental Quality Incentives Program

The purposes of the environmental quality incentives program … are to promote agricultural production and environmental quality as compatible goals, and to optimize environmental benefits, by—
(1) assisting producers in complying with local, State, and national regulatory requirements concerning—
(A) soil, water, and air quality;
(B) wildlife habitat; and
(C) surface and ground water conservation;
(2) avoiding, to the maximum extent practicable, the need for resource and regulatory programs by assisting producers in protecting soil, water, air, and related natural resources and meeting environmental quality criteria established by Federal, Tribal, State, and local agencies;
(3) providing flexible assistance to producers to install and maintain conservation practices that enhance soil, water, related natural resources (including grazing land and wetland), and wildlife while sustaining production of food and fiber;
(4) assisting producers to make beneficial, cost effective changes to cropping systems, grazing management, nutrient management associated with livestock, pest or irrigation management, or other practices on agricultural land; and
(5) consolidating and streamlining conservation planning and regulatory compliance processes to reduce administrative burdens on producers and the cost of achieving environmental goals.

Resource and operational issues vary significantly in animal agriculture, thus a "one-size-fits-all" regulatory approach is not effective in addressing these issues. Good policy choices, however, can effect changes that will help farmers and ranchers sustain the Nation's natural resources and support a strong and flourishing agriculture.

Compliance with regulations that protect the environment must be consistent with farmers' and ranchers' production and environmental objectives. Meeting water and air quality regulatory requirements for example, can increase costs as production practices are altered or new technologies are adopted. Regulations that recognize the valuable role that agriculture plays and incorporate an agricultural systems perspective can help to encourage the adoption of environmentally friendly practices. Public investments to defray costs or offset the perceived risk of new systems and approaches can encourage adoption and help to protect U.S. producers' competitive edge in international markets.

Six guiding principles lay the groundwork for approaching environmental stewardship:

- Local Decision-making and Action – Defining the locally important issues, opportunities, and needs as the basis for developing workable objectives and actions. It is based on the principle that local stakeholders are best suited to deal with local resource challenges and opportunities.
- Building and Enhancing Partnerships – A broad cross section of partners with interests and concerns related to animal agriculture, and new partners not traditionally engaged in agriculture, will be needed.

- Flexible and Practical – To be workable, approaches must be practical and adaptive in order to respond to changes in animal agriculture and its environmental, social, and economic conditions. Animal production is dynamic, and approaches must be flexible to respond to the demands of changing conditions.
- Progressive Implementation – The progression toward complete resource management systems must be based on the implementation of individual decisions over a reasonable period of time. Progressive conservation implementation ensures steady and logical advancements in achieving environmental objectives. Incremental achievement of environmental benefits enables the producers to remain economically viable while progressing toward the attainment of environmental objectives.
- Forward Looking and Innovative – Innovative approaches and technologies will be needed to bring new solutions to current resource concerns, as well as providing solutions for emerging concerns.
- Science-based – Sound science must form the basis for solutions to ensure that that they deliver what is expected by producers and the public. Through advancements in science, new innovations that are more effective and practical will be discovered, proven, and justified.

These six guiding principles set the tone and expectations for the collaborative approach that will be needed to help animal agriculture address the strategies established in the National Animal Agriculture Conservation Framework.

IV. Animal Agriculture Conservation Framework

Addressing the conservation needs of America's livestock and poultry producers is a public policy priority. The 2002 Farm Bill made clear that producers should receive assistance to improve their operations' environmental performance, address Federal, Tribal, State, and local environmental regulatory requirements, and maintain economically viable operations.

In January 2003, Bruce I. Knight , Chief, USDA NRCS called for NRCS State Conservationists and Area Directors to work with their livestock and poultry association counterparts and other partners through their State Technical Committees to develop State Frameworks with the objective of meeting the conservation challenges facing animal agriculture over the next 10 to 15 years. Importantly, this Framework recognizes that the meaningful action will take place on farms and ranches across the Nation, and that programmatic objectives and concrete goals appropriately will be established at the local level in a manner consistent with the authorized and required purposes and objectives of the underlying programs. This Framework also envisions that these locally established goals, consistent with the underlying national guidance, would become agency objectives through established agency planning processes that build national priorities from local input.

This National Framework is built from these State and Basin Area efforts and presents a vision for voluntary, proactive efforts to foster environmentally sound and economically viable livestock and poultry production. It envisions collaboration among Federal, Tribal, State, and local governments; producers; the public; and, the private sector to bring the initiative, resources,

and commitment to support environmental stewardship in animal agriculture. Importantly, this Framework is consistent with the 2002 Farm Bill, which promotes agricultural production and environmental quality as compatible goals and places emphasis on assisting producers in complying with regulatory requirements. Keeping the six guiding principles in mind, four objectives guide this vision:

- Helping producers to meet environmental regulatory requirements;
- Helping producers reduce the need for further regulation through flexible, results-based multi-natural resource solutions;
- Promoting innovation and market-based opportunities; and,
- Sharing knowledge and increasing accountability.

The National Framework is intended as a blueprint to be used by the NRCS in focusing its efforts in working with America's livestock and poultry producers to help them address their conservation needs. The next step in this process will be to institutionalize the critical activities needed to carry out the intent of this National Framework through NRCS's strategic and business planning processes.

It is important to understand in addressing the Objectives, Strategies, and Opportunities contained in this National Framework that technical assistance, although not explicitly stated in all cases, provides the foundation for success in achieving meaningful actions on the Nation's working lands. It should be kept in mind that as references are made to "programs" and "assistance" throughout the document, that technical assistance is an integral component that needs to be addressed.

Meet Regulatory Requirements

Agriculture is challenged to comply with resource protection requirements promulgated through a number of Federal statutes, including the Clean Water Act; the Clean Air Act; the Comprehensive Environmental Response, Compensation, and Liability Act; the Emergency Planning and Community Right-to-Know Act –SARA Title III; and, the Endangered Species Act. In addition, there are numerous state and local regulations that may be as, or even more, restrictive than those associated with the Federal statutes. Local regulations, in addition to being potentially more stringent, are generally more reflective of emerging environmental concerns given the more direct connection between the local concern and the regulatory process. The result for the Nation's farmers and ranchers is a complex and uncertain regulatory environment that is sometimes characterized by more disincentives than incentives for compliance. Assisting operators to meet regulatory requirements yields an economic and environmental benefit to society in general, and rural communities specifically.

This Framework calls for public and private collaboration to assist livestock and poultry producers to meet the regulatory requirements established to protect the environment. Collaboration and cooperation also are needed in the setting of regulatory requirements to ensure a foundation of sound science, realistic targets, and public and private commitments that make success possible. Strategies include:

- Focusing public conservation assistance on locally identified priorities; and,

- Promoting coordination of regulatory timetables with conservation program assistance.

Strategy: Focusing public conservation assistance on locally identified priorities.

Focusing public conservation assistance on addressing the most pressing regulatory challenges facing animal agriculture can accelerate progress. The 2002 Farm Bill made clear that assisting operators in meeting regulatory requirements is a priority for EQIP. Other Federal, Tribal, State, and local programs that provide sources of technical and financial assistance, such as the local soil and water conservation districts and the Extension Service, also might be focused on assisting operators to meet regulatory challenges. Opportunities include:

- Working with partners at the state and local level such as the local soil and water conservation districts and the Extension Service, to identify and assess the potential regulatory compliance workload and priorities.
- Coordinating at the Federal, Tribal, State, and local level to craft strategies to bundle conservation assistance to meet producer regulatory compliance needs.
- Targeting outreach to those facing the most immediate compliance issues; for example, in areas where producers are challenged by the Concentrated Animal Feeding Operation (CAFO) or Total Maximum Daily Load (TMDL) rules, and other comparable issues.
- Evaluating options for program flexibility to allow the use of program funds to provide conservation assistance on sites and facility areas associated with animal agriculture, such as auction yards, to address natural resource concerns.
- Conducting outreach to and education for producers and partners regarding environmental regulatory requirements.

Strategy: Promoting coordination of regulatory timetables with conservation program assistance.

Regulatory requirements can be implemented in a way that fosters innovation and improved environmental performance. Alternative compliance strategies and phased compliance schedules, consistent with the underlying regulatory program's legal requirements, can help producers implement environmentally superior technologies and systems on schedules that fit within their plans of operation.

Fitting compliance schedules with equipment replacement schedules could work to harmonize production and environmental objectives. Permit lengths can be varied to a certain extent and could be used to reward the degree of innovation and environmental protection provided through the systems and operating practices implemented by producers.

Similarly, incorporating alternative compliance strategies into regulatory requirements can stimulate innovation. Regulations and the supporting program guidance developed at the Federal, Tribal, State, and local levels could adopt this performance-based approach to stimulate innovation, encourage multi-natural resource approaches, and increase options for producers

while conforming to the letter and intent, and retaining the basic environmental protections afforded by, environmental statutes. Opportunities include:

- Working with partners to increase opportunities for alternative compliance strategies in regulatory programs. For example, the 'voluntary alternative performance standards' included in CAFO Rule provides options for producers to adopt alternative compliance technologies that perform as well as or better than the technology-based permit requirement.
- Coordinating with regulatory partners to develop phased compliance schedules that fit with practical implementation schedules on the farm or ranch (e.g., harmonize with producer's schedule for depreciation of long-term assets).
- Working with regulatory partners to develop opportunities for regulatory flexibilities that could promote higher performance levels; for example, flexible permit lengths based on degree of environmental protection.
- Coordinating with regulatory partners at the Federal, Tribal, State, and local level to establish compliance schedules that are reasonable and realistic.

Reduce the Need for Further Regulation Through Flexible, Multi-natural resource Solutions

Implementing multi-natural resource solutions can help avoid further regulation and attain an extra measure of conservation. Addressing environmental issues independently (e.g., clean air, clean surface water, clean groundwater, etc.) may result in programs working at cross-purposes, create disconnects in compliance strategies, multiply compliance burdens, or create disincentives for voluntary conservation. For example, strategies to protect water quality may adversely affect air quality, or vice versa. This Framework calls on Federal natural resource conservation agencies to apply their collective resources and technical expertise to foster multi-natural resource solutions to avoid further regulation and to provide an extra measure of assistance where operators want to take additional steps to conserve natural resources. Strategies include:

- Developing options for proactive, pre-regulatory improvements that reduce the need for regulations;
- Enhancing programmatic flexibility to encourage multi-natural resource approaches;
- Improving incentives for multi-natural resource solutions; and,
- Providing certainty and regulatory assurance for good faith efforts.

Strategy: Developing options for proactive, pre-regulatory improvements that reduce the need for regulations.

Much of the regulatory pressure facing animal agriculture is associated with Clean Water Act related regulations (CAFO Rule, TMDL Rule). In addition, the Endangered Species Act creates pressures in specific areas, and State and local ordinances also are significant. Clean Air Act regulations are likely to become an increasing issue, particularly for confined operations. These regulations also have relevance for grazing land management (i.e., prescribed burning). For

some operation types or locations, there may be options to avoid potential for regulation through the adoption of alternative practices, transition to new systems, availability of mitigation opportunities, or relocation of activities to lower vulnerability zones. Opportunities include:

- Assessing the economic and environmental viability of new technologies and innovations that, if adopted, would preclude the need for regulatory action; for example, transitions from confined production systems to grazing systems for some livestock types under the proper natural resource conditions.
- Ensuring program flexibility so that financial assistance is available for new promising technical options that would preclude the need for regulatory action.
- Creating program flexibility to allow for financial assistance for closures and relocations that would result in permit avoidance or otherwise minimize potential adverse environmental impacts of production.
- Working with national, state, and local regulatory partners and others to develop options for environmental credit trading associated with regulation and permitting.
- Developing additional conservation implementation options for proactive producers that cannot make drastic changes to their operations.

Strategy: Enhancing programmatic flexibility to encourage multi-natural resource approaches.

Program rules may inadvertently eliminate potential innovative approaches to achieving enhanced or multi-natural resource environmental benefits. Often, in grazing rotations the problems and solutions cross the public-private fence line as exemplified by strategies to manage fires and invasive species, wildlife habitat, and drought (e.g., grass-banking). These principles have been demonstrated through isolated projects, such as the Gila River and Malpai Borderlands Projects in the Southwest. Many livestock operations in the West include some combination of private and Federal, Tribal, or State lands for grazing. Public grazing land use and management decisions often limit the options on adjacent private lands. Coordinated management strategies are crucial in addressing grazing land health needs, as well as compliance with the Endangered Species Act, National Environmental Protection Act, and others. Promoting multi-natural resource benefits, such as blending wildlife habitat development with grazing operations, could be encouraged by providing flexibility to producers to use program lands for designated compatible uses. Opportunities include:

- Evaluating opportunities to increase program flexibility to allow compatible grazing uses on program lands; for example, rotational grazing on Conservation Reserve Program (CRP) land.
- Evaluating opportunities for use of program funds to address resource issues on companion public lands.
- Developing opportunities to compensate landowners for losses associated with enhancing the natural resource value of private lands (e.g., production losses associated with wildlife).

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Strategy: Improving incentives for multi-natural resource solutions.

The basis for conservation planning is a holistic approach to treating the entire array of natural resource conservation needs. In some cases, this superlative objective is beyond the means of producers, who opt for single resource strategies for economic or other reasons. Financial incentives could be used to encourage adoption of multi-natural resource strategies. This approach mirrors the philosophy embodied in the Conservation Security Program, as the statute establishes that superior environmental performance would be accorded higher payment levels. Opportunities include:

- Focus conservation planning on resource management systems (RMS) that address multi-natural resource solutions where producers are willing and able to adopt needed systems of practices and approaches. Use progressive planning approaches more liberally to assist producers in moving incrementally to RMS-level conservation systems.
- Develop sliding scale financial incentives to provide higher payments for more integrated or multi-natural resource measures that provide greater degrees of conservation.
- Develop financial incentives to encourage greater use of renewable energy, biobased products, and related technologies and systems that convey multi-natural resource benefits.
- Review and update conservation practices standards as needed to ensure support for multi-natural resource approaches.

Strategy: Providing certainty and regulatory assurance for good faith efforts.

Producers making decisions on investing in operational changes to achieve an extra measure of environmental stewardship do so against a backdrop of regulatory uncertainty. Many conservation practices and systems that can achieve environmental improvements and meet one set of regulatory requirements also may create conditions that later may be regulated (e.g., creation of habitat). Operators concerned about future liabilities associated with producing these benefits may back away from taking steps that would provide near-term benefits for the environment and society. Opportunities include:

- Work with regulatory partners to develop an “agricultural assurance strategy” to provide producers with certainty that investments made to improve environmental stewardship can afford regulatory relief as new requirements emerge.
- Work with regulatory authorities, industry, and technical service providers to ensure conservation systems are implemented by certified individuals and validated using sound quality assurance principles.
- Work with regulatory partners to increase opportunities for safe harbor approaches to provide incentives for undertaking additional environmental improvements.
- Work with industry to develop and implement programs for certification processes involving environmental quality assurance and environmental compliance.

Promote Innovation and Market-Based Approaches

The emerging conservation era will be characterized by improved integration of public and private sector environmental and economic objectives. Well-understood, effective, and profitable conservation technologies and systems will be the foundation of efforts to foster sustained environmental stewardship. This Framework calls on strengthened public-private partnerships to promote innovative solutions to natural resource concerns confronting animal agriculture. Effective public-private sector participation in market development can ease transitions and increase economic opportunities, while minimizing the negative environmental impacts of animal production. Strategies include:

- Strengthening existing alternative markets;
- Fostering development of new markets;
- Developing and verifying alternative technologies and tools; and,
- Promoting innovative approaches.

Strategy: Strengthening existing alternative markets.

Alternative or value-added markets can help provide opportunities and incentives to operators to address environmental issues or undertake additional environmental improvements. For example, lack of well established markets to handle excess manure nutrients is a key constraint for nutrient balancing and contributes to ongoing concentration of manure nutrients in areas distant from those producing the feed grains. Other opportunities may be in the form of enterprise diversification, including hunting, fishing, or other outdoor activities that depend on high quality habitat or other environmental amenities. Such opportunities, however, require investment in new skills and increased staff or management time. Operators may find that cooperative efforts are needed to achieve the needed economies of scale or support assistance to advance market development. Opportunities include:

- Working with Resource Conservation and Development (RC&D) Councils, local soil and water conservation districts, the Extension Service, and other community-based organizations to leverage funding and expertise to support expansion of existing markets (e.g., regional waste transfer or treatment facilities, composting, pelletizing facilities).
- Working with RC&D Councils and other community-based organizations to develop cooperative efforts to address community-based natural resource issues. For example, energy production on a single operation may be insufficient to be attractive to energy cooperatives; however, at a community-based level, critical mass may be achieved to develop a reliable and cost-effective energy source.
- Exploring opportunities for public-private partnerships to address natural resource priorities. For example, develop facilities to manage residuals from both animal agriculture and municipal sources to treat the waste and produce value-added by-products, such as energy.

- Working with USDA Rural Development to strengthen established, yet inadequately distributed, alternative markets through targeting small business loan or grant programs.
- Convening national dialogues on topical areas to identify institutional and technological barriers and opportunities to expanded implementation of technologies and systems that support alternative markets.

Strategy: Fostering development of new markets.

New markets and approaches founded on the basis of improved integration of public and private sector economic and environmental objectives are beginning to emerge. In some cases, the needed technologies and processes exist currently, and in other cases technical or institutional challenges need to be addressed to support further development of these approaches. For example, research and development efforts have demonstrated the potential for formulating biobased products and biofuels from animal residuals. Resources to promote expansion have been authorized through the research and energy titles of the 2002 Farm Bill.

Newer opportunities for environmental credits and credit trading are less well developed, although major steps have been taken recently (e.g., EPA's Water Quality Trading Policy, carbon credits). Meaningful implementation of these approaches will depend on quantifying the environmental benefits of practices and systems, verifying that trading approaches can deliver the desired environmental outcome, and developing approaches to minimize the generally high transaction costs associated with trading or credit approaches (e.g., developing the standard frameworks for monitoring, determining offsets, and conducting trades needed for a successful market). Opportunities include:

- Coordinating with Federal, Tribal, State, and local agencies and partners such as local soil and water conservation districts and the Extension Service, to identify steps needed to develop and promote new market opportunities.
- Targeting resources to promote development of opportunities for biobased products and fuels based on animal residuals.
- Quantifying environmental benefits of practices and systems to support the development of environmental credit trading for carbon credits and water quality trading.
- Evaluating potential programmatic constraints and opportunities for promoting environmental credit markets; for example, allowing operators to 'sell' credits on the open market as a result of improvements made using conservation programs (e.g., CRP and EQIP policies allow it).

Strategy: Developing and verifying alternative technologies and tools.

Innovative technologies and approaches are needed in order to make advances on the Nation's most difficult environmental and conservation challenges in animal agriculture. Some current technologies and conservation systems are not effective enough to eliminate or minimize potential environmental and human health risks posed by animal production, are too costly to be economically feasible, or are too complex to be operationally viable. The draft Frameworks

developed by States and Basin Areas identified a number of specific tools and technologies needed to advance environmental stewardship in animal agriculture (see Appendix A).

Promotion of new technologies, or new agricultural applications of existing technologies, will depend on verifying performance. Producers' ability to choose among alternative technologies in some cases is hampered by a lack of credible, unbiased information on technology performance or adequate economic evaluation. Technology verification efforts can help provide a basis for informing producers, regulators, and the public about the performance of proposed technologies. Opportunities include:

- Increasing funding for and focusing research on developing new technologies and practices or enhancing existing ones that producers can implement to meet specific regulatory needs; for example, technologies for emission controls and water conservation.
- Supporting the development and implementation of grant programs to support the research, development, and demonstration of alternative technologies aimed at animal agriculture conservation issues.
- Developing demonstration sites and centers of excellence in key production areas to showcase alternatives and validate performance.
- Coordinating with Federal, Tribal, State, and local agencies and other partners, such as local soil and water conservation districts, the Extension Agencies, and Land Grant Universities, to establish protocols and approaches for technology verification, and the development of technology management and deployment strategies across agencies.

Strategy: Promoting innovative approaches.

Existing conservation and regulatory approaches to achieving environmental objectives have benefited the Nation over the past decades. Changes in technologies, economics, and social preferences, however, argue for re-examining overall approaches to achieving the Nation's agricultural and natural resource objectives. New strategies that pull private sector and public sector resources together more effectively to achieve common objectives are needed. Opportunities include:

- Developing programmatic options to promote innovative approaches to achieving natural resource conservation and environmental protection.
- Emphasizing coordinated public-private lands management approaches that convey benefits to producers and the natural resource base (e.g., grass-banking)
- Investigating economic incentives that could promote industry participation in conservation and natural resource enhancement (e.g., tax incentives).
- Promoting non-economic incentives that reward and recognize producers for sound environmental stewardship, for example, certification as an "environmental stewardship farm", public recognition programs, etc.

Sharing Knowledge and Increasing Accountability

Clear, accurate, and timely information and educational materials provide the foundation for building understanding of the value of, and the challenges to, animal agriculture; and, will ultimately lead to better understanding by the public, and more informed policy decisions. Assessing and evaluating progress and results increases the accountability of the programs and all who are participating in them, sets the stage for informed decision making, and should lead to improved environmental stewardship. This Framework calls on Federal agencies, State and local partners, university and Extension Service educators, and interested stakeholders to improve the quality of information and education available regarding the relationships between animal agriculture and natural resources, as well as the results of conservation activities. Strategies include:

- Developing and reporting information on the benefits of, and challenges in, animal agriculture;
- Providing clear and consistent information on regulatory requirements and conservation opportunities;
- Educating natural resource, environmental, and agriculture students on the conservation and environmental benefits provided by animal agriculture; and,
- Evaluating progress and reporting results.

Strategy: Developing and reporting information on the benefits of, and challenges in, animal agriculture.

Increased public scrutiny of animal agriculture and its potential impact on the environment has not been accompanied by parallel efforts to clarify the overall benefits provided by the sector and the benefits that flow from compliance with existing and new regulatory requirements. These benefits include amenities such as wildlife habitat and aquifer recharge zones, stronger functioning rural economies, and contributions to national food security. The general public will benefit from balanced information on the benefits and costs of animal agriculture. Opportunities include:

- Developing a USDA–stakeholder effort to compile existing information on the role that animal agriculture plays in natural resource management and enhancement, as well as its contributions to other important societal objectives.
- Instituting a periodic reporting strategy to convey to the public the progress being made by animal agriculture in meeting regulatory requirements and contributing additional environmental benefits as described in the State, Area, and National Frameworks.
- Developing a suite of information products to generate interest in the private sector for market development and for producers to participate in alternative market approaches to resolving natural resource concerns.
- Conducting field days or similar programs targeted toward both agricultural and non-agricultural interests to demonstrate progress being made in animal

agriculture. Demonstrate value-added or other business options to stimulate private sector market development related to animal agriculture.

Strategy: Providing clear and consistent information on regulatory requirements and conservation opportunities.

Clear, concise, and understandable information on regulatory requirements and conservation opportunities is essential. Inconsistent or complicated materials regarding regulatory requirements create apprehension and confusion, and can lead to poor implementation. Similarly, consistent and clear information on technical and financial assistance and types of conservation practices and systems that can help producers meet regulatory requirements are needed. Opportunities include:

- Coordinating with Federal, Tribal, State, and local regulatory partners to develop and distribute consistent and clear information on regulatory requirements and potential conservation solutions to address regulatory requirements.
- Identifying opportunities for single portal access for livestock and poultry producers to obtain information on regulatory requirements, conservation opportunities, enterprise diversification, and other relevant issues.
- Expanding use of demonstration projects and field days to provide information and education to producers on regulatory requirements, conservation opportunities, and value-added or enterprise diversification opportunities.
- Developing information on natural resource and environmental issues to inform producers about new and emerging challenges (e.g., air quality, landuse conversion/development pressures, pathogens and pharmaceutical concerns) and opportunities (e.g., enterprise diversification, value-added products or new markets).

Strategy: Educating natural resource, environmental, and agriculture students on the conservation and environmental benefits provided by animal agriculture.

It is vital that natural resource, environmental, and agricultural education portrays animal agriculture accurately and objectively, and that the environmental stewardship alternative systems are understood by students. This educational effort, supported by the Federal agencies, State and local partners, university and Extension Service educators, and interested stakeholders, provides for the development of educational curricula and supporting materials that are objective and accurate. Opportunities include:

- Strengthening the conservation and environmental stewardship elements of 4H and Future Farmers of America programs in communities throughout the nation.
- Working with educational institutions to have curriculum available to students where animal agriculture is portrayed objectively and accurately, both with regard to conservation and environmental challenges and opportunities.

Strategy: Evaluating progress and reporting results.

Assessing progress and results of the actions taken will be essential to informing decision makers at all levels. For conservation practices or systems that are installed with the assistance of NRCS and its conservation district partners, mechanisms are in place to track progress – through the NRCS performance reporting system. Efforts to evaluate the environmental benefits produced by these actions are underway, and will be essential to explain the public benefits provided through public investment on private land. Integration of State and local framework objectives and activities into agency planning processes, such as business and performance planning, would provide the basis for tracking other activities. Opportunities include:

- Developing approaches to describe the environmental benefits of conservation practices and systems implemented by livestock and poultry producers.
- Identifying opportunities to integrate newly identified resource needs, objectives, and targets into the planning processes of relevant agencies at all levels.

V. Conclusion

The opportunity exists for achieving improved environmental performance in animal agriculture production while sustaining this essential economic sector. It is significant and helpful that the growing recognition of the challenges faced by animal agriculture has been accompanied by an equal and focused interest in solutions that can address these challenges. The far-reaching nature of animal agriculture, and its importance to U.S. agriculture, the magnitude of the natural resource issues needing to be addressed, and the diversity of stakeholder interests means that solutions to the challenges ahead will not come from agriculture or any other interest alone. In fact, many proposed solutions will depend on market developments and adjustments or actions in sectors that traditionally may not have been engaged in animal agricultural issues.

In crafting farm conservation policy, Congress took extraordinary steps to be clear that assisting the Nation's livestock and poultry producers with their environmental stewardship efforts is a national priority, and that the private sector is to be an important participant in seeking solutions and delivering opportunities. Unprecedented funding and new authorities pave the way for conservation approaches to leverage involvement effectively in other economic sectors.

The Federal investment in conservation research, information and education, and technical and financial assistance is leveraged through the activities of State agencies, universities and colleges, commodity and industry groups, and private landowners and managers. This nationwide public-private partnership will be essential in creating the workable solutions to environmental, social, and economic challenges facing animal agriculture. NRCS is committed to working effectively with its current partners in the agricultural and environmental communities, and to bringing new partners to the table, to develop and implement approaches to help the Nation's livestock and poultry producers achieve environmental and economic objectives.

APPENDIX A

Highlights of State and Basin Area Animal Agriculture Conservation Frameworks

The following describes the highlights of the individual State and Basin Area Animal Agriculture Conservation Frameworks. Natural Resources Conservation Service (NRCS) State Conservationists and Basin Area Directors worked with their State and local livestock and poultry association counterparts, conservation districts, Tribes, and many other partners, through their State Technical Committees to develop State and Basin Area Frameworks with the objective of meeting the conservation challenges facing animal agriculture over the next 10 to 15 years. The National Framework is built from these State and Basin Area efforts.

Conservation Program and Technical Assistance Needs

All States and Basin Areas identified ways in which Federal, Tribal, State, and local conservation programs could be used more effectively. Many Frameworks identified incentives to reward good conservation, not just to provide financial assistance for new conservation practices and systems. Some Frameworks indicated a need to use conservation programs on impaired water bodies and for Total Maximum Daily Load implementation. Many Frameworks indicated attention will be needed to effectively use Technical Service Providers to add capacity to NRCS and conservation partner efforts. Some identified the large workload affiliated with Comprehensive Nutrient Management Plan (CNMP) preparation and revisions.

One State Framework reminds us that “once a CNMP is developed there are many changes that are common on most farms that will trigger the need for plan revisions.”

Market Development Needs

Market development needs are of importance in many States and Basin Areas. Various types of markets, or activities associated with markets, were identified, including environmental credit trading; cooperatives and brokerages; and niche or unique markets.

Enhancing a producer’s income by creating markets for the environmental credits they produce was identified as an emphasis in many Frameworks. Some examples of environmental credit trading markets that were identified as needing development included those related to carbon trading, greenhouse gas emission trading, and nutrient trading. Additional incentives for pollution reduction need to be explored, such as providing for energy bonuses, tax credits, and odor reduction credits.

New cooperatives and brokerages create economies or efficiencies of scale and are needed to deal with the distribution and/or processing of manure, wastewater, and animal carcasses in many States and Basin Areas. For instance, cooperatives could be used to establish regional manure composting facilities. Brokerages or clearinghouses are suggested in many areas so that sellers of excess manure can be efficiently introduced to potential buyers. Research and evaluation is needed on other types of innovative nutrient relocation programs. Improved local and regional transportation systems for marketing solutions were identified in some State and Basin Frameworks.

Niche or unique markets for livestock and poultry byproducts was a common theme in many State and Basin Area Frameworks. Biobased products need to be developed that are value-added for non-farm use, such as biogas carbonated products; nutrient recycling; and bio-oil and bio-fuel; among others. Several Frameworks indicated that agri-tourism market development is needed to help sustain farm and ranch income.

Producer Needs

State and Basin Area Frameworks indicated that livestock and poultry producers are in need of increased and focused technical and financial assistance from Federal, Tribal, State, and private funding sources to help in achieving their environmental stewardship goals and compliance with regulations. Many Frameworks identified an emphasis on assisting producers in developing natural resources management plans that address economic considerations that help them to be successful and sustainable. Many States and Basin Areas intend to place greater technical and financial assistance emphasis on the conservation needs of limited resource farmers, minority farmers, and Tribes. Outreach to producers with existing or high risk for pollution problems will be the intent in most States and Basin Areas. Priority assistance to producers needing to comply with Federal and State Concentrated Animal Feeding Operation (CAFO) rules, especially newly defined or designated CAFOs, was frequently identified.

Technology Needs

Numerous and varied technology needs were identified in State and Basin Area Frameworks as of high importance for development and implementation. Emphasis was placed on low-cost and high reliability. The technologies can be categorized as techniques, practices, and systems; and monitoring and assessment tools, and included the following priorities:

Techniques, Practices, and Systems:

- Particulate matter, odor, and greenhouse gas emissions reduction
- De-watering manure storage structures
- Pelletization techniques to turn manure into fertilizer pellets
- Improved treatments, storage, utilization

- Nutrient management planning tools
- Alternative manure uses (energy products)
- Alternative manure handling, other than trucking
- Reduction in manure nutrients (e.g., using feed management)
- Digester operation at cooler temperatures
- Adoption of sustainable, land-based systems in lieu of concentrated/confined systems
- Improved grazing management techniques and systems
- Improved forage production (adaptability, production volume, protein content, and weight gain)
- Composting agricultural waste, including mortalities
- Effluent filtration techniques
- Plant material with high phosphorus uptake potential for reclaiming soils
- Strategic location of processing facilities to minimize negative environmental effects of transportation of manure
- Develop technology demonstration sites in high AFO/CAFO concentration areas
- Regional waste transfer, composting, bio-gas generation and distribution systems
- Work with poultry integrators to add phytase to feed mills to reduce phosphorus excretion
- Opportunities for carbon sequestration and credit trading on grazing lands
- Use of poultry litter as on-farm energy source or locality energy source through farm cooperatives

Monitoring and Assessment Tools:

- Odor and greenhouse emissions assessment tools
- Seepage from storage assessment tools
- Methods to measure nutrient levels of rangeland soils and vegetation
- Phosphorus index calibration and validation
- Nitrogen index upgrade to account for leaching
- Assessment of transport and fate of pathogens
- Assessment of transport and fate of pharmaceuticals
- Impacts of feed management on nutrient reduction, animal health, and production
- Develop nutrient leaching indexes, by region

Many Frameworks include aggressive activities aimed at bringing innovation to the forefront of the potential solutions to livestock and poultry environmental problems. One State, for instance, has an activity to "increase the number of 'grazing dairies' and spread them out from original concentrated groups." In another example, a State has developed the "Odor from Feedlots Setback Estimation Tool (OFFSET)" to help producers control odor.

Information Needs

Providing information to producers, regulators, and the public will be an emphasis in all States and Basin Areas. Frameworks identified content and methods of providing the information. The content of the information most frequently identified in the Frameworks included the benefits of animal agriculture to sustaining environmental quality; principles of range and pasture land management; technical and financial assistance available; and, regulatory requirements. The methods of providing the information identified most are increasing electronic availability of information for producers, including a suggestion to establish a "virtual" information center; conducting symposia, workshops, field days, and demonstrations; using agri-businesses to help deliver the message and to target information and education efforts; and, traditional media and information sources, such as newsletters and magazines.

Training and Certification Needs

All Frameworks have significant emphasis on the training and certification of livestock and poultry producers and for all providers of technical service. Special emphasis training and certification needs were identified for various subjects, including: conservation planning and application; nutrient management; grazing land health; On-Farm Assessment and Environmental Review (OFAER) or other environmental audit activity; sensitivity for urban/suburban encroachment issues; Federal, Tribal, State, and local regulations; and, language and cultural sensitivity training to outreach effectively to all producers. Techniques and methods of delivering the training also were identified in many Frameworks, including: information meetings, field days, tours, written materials, and on-line materials; evening and weekend activities to better meet producers' time constraints; web-based and in-home training (CD, DVD); and, education programs for youth interested in animal agriculture. Several Frameworks identified the need to foster cooperative training programs, such as developed by NRCS and the University of Tennessee on CNMP planning and implementation; or the Livestock and Poultry Environmental Stewardship Curriculum sponsored by Cooperative State Research, Education, and Extension Service, U.S. Environmental Protection Agency, and a consortium of land grant universities.

Partnership Needs

States and Basin Areas did an outstanding job of identifying a broad-based, diversified list of partners that will be involved in the implementation of their respective Frameworks over the next 10 to 15 years. Many Frameworks identified the formation of a nutrient or manure management committee or work group. Some of the typical partners included: livestock and poultry organizations, associations, cooperatives, and councils; Federal, Tribal, and State agricultural, natural resource, and environmental agencies;

natural resource and environmental non-government entities and foundations; landowner and tenant associations; technical service providers, consultants, and farm advisors; Tribal councils and associations; grazing associations and coalitions; universities and centers of high education; and, veterinarians, animal nutritionists, and animal feed suppliers.

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APPENDIX B

Related Reference Documents

Feed Management Dialogue: Challenges and Opportunities for Reducing Nutrient Output

The U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), convened a national dialogue on feed management and diet manipulation in confined livestock production on June 17 and 18, 2002. About 80 professionals with varying interests and responsibilities related to feed management participated in this dialogue to share their thoughts and perspectives. The dialogue was a first step in identifying technical and institutional challenges associated with broader implementation of feed management strategies. The report summarized the dialogue findings and recommendations. For a copy of the report contact: AHCWP Division, USDA Natural Resources Conservation Service at (301) 504-2196.

The Natural Resources Conservation Service's Comprehensive Nutrient Management Planning Technical Guidance

In December of 2000, the Natural Resources Conservation Service (NRCS) released the Comprehensive Nutrient Management Planning (CNMP) Technical Guidance to be used in assisting livestock and poultry producers voluntarily address their water quality concerns. The Technical Guidance is contained in the NRCS National Planning Procedures Handbook, the agency's policy on conservation planning procedures to be used in implementing USDA voluntary conservation programs. The objective of a CNMP is to document the AFO owner's/operator's plan to manage manure and organic by-products by combining conservation practices and management activities into a conservation system that, when implemented, will achieve the goal of the producer and protect or improve water quality. You may access this technical guide at: http://policy.nrcs.usda.gov/scripts/lpsiis.dll/H/H_180_600.htm.

Costs Associated with the Development and Implementation of Comprehensive Nutrient Management Plans, Part I – Nutrient Management, Land Treatment, Manure and Wastewater Handling and Storage, and Recordkeeping

To satisfy the growing demand in the public and private sectors for information concerning the costs associated with developing and implementing Comprehensive Nutrient Management Plans on livestock and poultry operations nationwide, USDA

initiated the development of a National cost assessment. The report addresses the financial costs of implementing CNMPs and the cost of technical assistance needed to develop CNMPs and assist in their implementation. The report makes use of 1997 U.S. Agricultural Census information to analyze CNMP development and implementation regionally and by animal sector. The report is intended to provide information to decision-makers in addressing water resource conservation efforts. This report is expected to be available for public distribution in July, 2003.

Some of the information contained in the report is available in NRCS Bulletin 460-3-1, which can be found at the website: http://policy.nrcs.usda.gov/scripts/lpsiis.dll/NB/NB_460_3_1.htm.

U.S. Environmental Protection Agency (EPA) and U.S. Department of Agriculture (USDA) Cooperation on the Implementation of the Clean Water Act Regulations for Concentrated Animal Feeding Operations -- Statement of Involvement

EPA's National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitations Guidelines and Standards for Concentrated Animal Feeding Operations, 40 CFR Parts 122 and 412 (CAFO Rule) regulations, became effective on April 14, 2003. The new regulations expand the universe of CAFOs that are required to obtain National Pollutant Discharge Elimination System permits to address the discharge of pollutants to waters of the United States. On May 16, 2003, EPA and USDA signed a statement of involvement reflecting mutual interest in meeting the needs of CAFO owners and operators that result in the implementation of the revised rule. It is the responsibility of EPA and State Permitting Authorities to implement and ensure compliance with the CAFO Rule. USDA will assist EPA and States to be aware of the needs of producers in meeting CAFO Rule requirements. USDA has substantial interest in the CAFO Rule implementation because of the Department's role in helping producers to develop and implement Comprehensive Nutrient Management Plans (CNMPs) that promote natural resource management and protect water quality. You may access the Statement of Involvement at: http://www.nrcs.usda.gov/programs/afo/.

National Research Council of the National Academies' Report on Air Emissions from Animal Feeding Operations-Current Knowledge, Future Needs

The increasing concentration of food production-meat, eggs, milk-from animals in very large feeding operations has focused public attention on associated environmental issues. This report, prepared by a committee appointed by the National Research Council, proposes two major ways to improve information and the nation's ability to deal with the effects of air emissions. One is to change the way in which the rates and fate of air emissions are estimated and tracked. The other proposal is for a research program that views air emissions as one part of the overall system of producing food from animal

feeding operations with the goal of eliminating the release of unwanted emissions into the environment. You may access this publication at: http://www.nap.edu/books/0309087058/html/.

United States Environmental Protection Agency's Concentrated Animal Feeding Operations-Final Rule

On December 15, 2002, the U.S. Environmental Protection Agency (EPA) Administrator signed the revised National Pollutant Discharge Elimination System (NPDES) and Effluent Limitation Guidelines (ELG) Rule affecting concentrated animal feeding operations (CAFO). The revised Rule contains changes that will affect mostly large livestock and poultry operations nationwide. The Rule now requires CAFO operators to develop and implement a nutrient management plan as a permit requirement. The EPA recognizes that U. S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) defined comprehensive nutrient management plans (CNMP) satisfy EPA nutrient management plan requirements. You may access the Rule at: http://cfpub.epa.gov/npdes/afo/cafofinalrule.cfm.

Natural Resources Conservation Service's Environmental Quality Incentives Program Final Rule

On May 13, 2003, OMB approved the final EQIP rule, which was published in the Federal Register on May 30, 2003. The final EQIP rule contains five significant changes from the proposed rule: American Indians, Alaska Natives, and Pacific Islanders to use a unique identification number as an alternative to a social security number; the definition of limited resource producer was revised; a $450,000 cap was established for each EQIP contract; State Conservationists, with Regional Conservationist concurrence, are authorized to approve the EQIP cost lists used in the State rather than each individual contract that contains a cost-shared practice greater than 50 percent; and, land that has been irrigated two of the last five years rather than three of the last five is eligible for EQIP assistance to improve irrigation efficiency. You may access a summary of the Rule at: http://www.nrcs.usda.gov/programs/farmbill/2002/pdf/EQIPRLSm.pdf.

Comprehensive Nutrient Management Planning Training Opportunities Available from the Natural Resources Conservation Service and Other Sources

To ensure that there are training opportunities for nutrient management planning practitioners, NRCS developed a listing of some Comprehensive Nutrient Management Planning training opportunities available from various sources. This list is available at: http://www.nrcs.usda.gov/programs/afo/pdf/CNMP%20Training%20table.pdf

National Animal Agriculture Conservation Framework

Natural Resources Conservation Service's Field Office Technical Guide and the National Handbook of Conservation Practices

The Natural Resources Conservation Service's Field Office Technical Guide and the National Handbook of Conservation Practices contain the conservation practice standards that are science based and economically feasible. State Conservation Practice Standards are available through the eFOTG (Electronic Field Office Technical Guide). If no State conservation practice standard is available in the eFOTG, you should contact the appropriate State Office or your local USDA Service Center. These guides may be accessed at: http://www.nrcs.usda.gov/technical/efotg/, and http://www.ftw.nrcs.usda.gov/nhcp_2.html.

State Technical Committees

The Natural Resources Conservation Service State Conservationists chair these State level committees, which are bodies that have wide representation from agricultural related entities and address Farm Bill programs implementation issues. To learn more about the State Technical Committees contact your Natural Resources Conservation Service State Conservationist. You may access the State Technical Committee Final Rule at: http://www.nrcs.usda.gov/programs/StateTech/.

Natural Resources Conservation Service Grazing Lands Technology Institute's Publications on Grazing Lands Management

The Natural Resources Conservation Service's Grazing Lands Technology Institute publishes information about grazing land management in order to achieve environmental stewardship objectives. To access GLTI information, visit the NRCS Website at: http://www.glti.nrcs.usda.gov/technical/publications/index.html. An example of two publications by GLCI:

The Dairy Farmer Profitability Using Intensive Rotational Stocking publication contains information on maximizing the value of forage and can be accessed at: ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/dairy-profitability.pdf.

The National Forage Quality and Animal Well Being - A 74-page booklet developed by GLTI, dated October 2000, gives results from 44 states that participated in this national NRCS project from 1997-99. Nutritional monitoring using fecal samples allows assessment of diet forage and grazing management can be accessed at: ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/forage-quality.pdf.