



# NISA's Promotion of U.S. On-Farm Sustainability

## Linking Producers to the Supply Chain

*This document describes how the National Initiative for Sustainable Agriculture (NISA) is helping crop and livestock producers meet the “within farm gate” sustainability expectations of the agricultural supply chain.*

### Why NISA?

In the decades since the Dust Bowl, U.S. producers have worked to improve their farms and farming systems. New technologies and practices have been implemented to achieve gains in on-farm productivity, natural resource conservation, and worker safety while providing food, feed, fiber, and fuel to meet current and future consumer needs. These environmental, economic, and social fundamentals are the essential elements of sustainable agriculture.

Today there is growing pressure from outside the farm gate for producers to document sustainability efforts and achievements and to relate them to the desired outcomes and metrics that off-farm stakeholders consider essential to long-term agricultural sustainability. Numerous sustainability initiatives are underway to produce measurement tools and standards, or to identify best practices to “point farmers in the right direction.” ***One fact is clear: for sustainability initiatives to be widely adopted and succeed, producers must have a seat at the table to ensure that sustainability measures are valid, achievable, affordable, and compatible with realistic farm management systems.***

Producers will willingly embrace feasible initiatives that they have helped develop. NISA provides a framework for producers to work with stakeholder partners on a peer basis to develop farm-level sustainability initiatives that meet the expectations and needs of producers, the supply chain, and society at large.

***NISA provides a mechanism for producer groups to communicate with the supply chain and create a supportive and participatory process that meets common sustainability goals.***

### What will NISA do?

The overarching goals and expected outcomes related to environmental, economic, and social sustainability are similar regardless of farm location or the agricultural industries to which they belong. Beyond these overarching goals are the individual methods and specific approaches utilized by farming operations as they work to continuously improve on-farm sustainability. While such methods may be broadly similar across the country, most are also highly tailored to regional variables and specific crop, animal, or integrated production systems. Thus no “one size fits all” collection of best management practices can adequately reflect the complexity and variety of systems that collectively constitute U.S. agriculture.

***Rather than force conformity within such a rigid system, NISA is developing a consistent framework of overarching goals and expected outcomes that challenge producers to seek continual improvement and document previous and future achievements.*** NISA is facilitating regionally- and production system-appropriate programs and working to verify their alignment with these overarching goals and outcomes. This will be accomplished through a federation of producer-led sustainable agriculture initiatives working through diverse and uniquely-tailored means to achieve common outcomes for on-farm sustainability.

On the following two pages are examples of the environmental, economical and social sustainability criteria that form the foundation of the NISA framework.

## ENVIRONMENTAL SUSTAINABILITY

Agricultural production methods and environmental protection are closely woven aspects of sustainable agriculture, and both are vital to the long-term productivity and security of the U.S. food system. Key agronomic, animal husbandry, and environmental outcomes are fundamental to programs of agricultural sustainability, are commonly requested by the supply chain for marketplace access, and are essential elements of NISA-participating sustainable agriculture initiatives across the country.

### Land Use Criteria

- Contribute to food security while balancing land use and environmental issues
- Preserve topsoil and limit soil erosion from water and wind
- Preserve or enhance soil quality (soil friability, structure, tilth, productivity, and biological activity)
- Preserve or enhance ecosystem services (including watershed ecology, wildlife and beneficial species habitat)
- Preserve or enhance farm biosecurity (prevention of invasive species, pests, diseases)
- Preserve land for farming, woodlots, beneficial habitat and related activities

### Air & Water Criteria

- Optimize water use with consideration for long-term preservation of sources
- Preserve or enhance surface water and groundwater quality (with consideration for siltation, agrochemical and manure runoff/leaching, and introduction or movement of pests/pathogens)
- Preserve and enhance air quality (with consideration for dust, agrochemical drift, manure volatilization, odors, smoke, and GHG emissions)

### Input Criteria

- Efficient use of farming inputs (minimizing waste while maintaining productive and healthy crops and livestock)
- Limit environmental risks associated with agrochemical use (controlling off-target movement of inputs, judicious use and consideration of environmental risks)
- Preserve pesticide/antibiotic efficacy (with consideration of pest resistance management)
- Improve on-farm nutrient cycling (manure handling, composting, management of on-farm inputs, etc.)

### Energy & GHG Criteria

- Enhance productivity of direct energy inputs (fuel and electricity)
- Enhance productivity of indirect energy inputs (feed, crop/livestock health, human capital)
- Improve energy efficiency (on-farm renewable energy production etc.)
- Balance of carbon, nitrogen, and other GHG-related cycles (soil carbon, denitrification, barn management, manure processing, etc.)

*In achieving these agronomic, animal husbandry, and environmental sustainability outcomes, participating operations are likely to employ broadly-applicable practices such as (but not limited to) the following:*

- Applying current research, new technologies, and management systems to enhance plant and animal health, productivity, and efficiency
- Promoting proper application and safe storage of crop protectants, pesticides, fertilizers, antibiotics, cleaning agents, sanitizers, equipment fluids, and fuels
- Designing and implementing conservation programs to protect soil, water, and other natural resources on-farm and in surrounding watersheds
- Working to restore or conserve ecosystems that support a diversity of wildlife, pollinators, and beneficial insects
- Following manure or nutrient management plans that are optimized for the specific farming system, soil type, climate, etc.
- Applying Integrated Pest Management (IPM)
- Maintaining updated farm plans and high-quality records of key production practices, yields and pest pressures, and environmental impacts in order to continually inform future decision making

## ECONOMIC SUSTAINABILITY

On-farm economic sustainability is not just about survival and prosperity but also about dependable, long-term, high-quality supply of raw products for processing and manufacturing partners, distributors, retailers, and consumers. Economic sustainability is about planning, risk assessment and management, and delivery of goods needed for long-term success of U.S. and global economies. NISA-participating initiatives support successful farming enterprises able to maintain supply and meet growing value chain demand.

### Productivity & Profitability Criteria

- Contribute to food security, both nationally and globally
- Preserve or enhance farm productivity
- Sustain or enhance farm profitability and farmer livelihoods (i.e., operating profit margins, return on equity, etc.)
- Preserve or enhance economic resilience of farming operations (i.e., income variance, complementary enterprises, diversification and risk management strategies, savings and investments, insurance, etc.)
- Maintain long-term financial and managerial planning (farm financial management planning, succession planning, successor training, etc.)
- Contribute to viable local business development

*In achieving these economic sustainability outcomes, participating operations are likely to employ broadly-applicable practices such as (but not limited to) the following:*

- Developing and implementing farm marketing plans
- Implementing practices to address key economic variables such as cost of production analysis, maintaining balance sheets and income statements, disaster planning, and business liability coverage and appropriate insurance
- Training young farmers on business and market strategies
- Diversifying and expanding markets
- Actively working to increase farm profitability
- Utilizing diverse production systems that market multiple goods
- Maintaining a healthy asset to debt ratio

## SOCIAL SUSTAINABILITY

Social aspects of sustainability are usually the most difficult to implement and assess but are key elements of long-term sustainability. Social sustainability benefits farm families, farm workers, and the larger community and is often interwoven with economic and environmental goals. NISA-participating initiatives support vibrant rural communities able to support long-term agricultural sustainability in the U.S.

### Social Criteria

- Contribute to a high-quality, safe, and consistent agricultural product supply (i.e., food quality and nutrition, prevention of foodborne illness, etc.)
- Contribute to a vibrant rural community
- Adhere to safe and fair working conditions for farm employees
- Provide high-quality training for farm workers (for efficient job function and safety, promotion and advancement, and future entrepreneurship)
- Engage with local community/watershed activities
- Reflect shared values for animal health and welfare
- Engage community concerns regarding production practices and sustainability and work to balance these with achievable outcomes
- Integrate rural production with urban markets
- Contribute to improve the quality of life for agricultural producer families and rural neighbors

*In achieving these social sustainability outcomes, participating operations are likely to employ broadly-applicable practices such as (but not limited to) the following:*

- Managing natural resources to promote food security, clean water and air, wildlife habitat, and other ecological benefits on-farm and for the surrounding community
- Providing safety training, benefits, and job development opportunities to employees
- Engaging in community activities and providing leadership when possible and appropriate
- Analyzing economic and social impacts of local and national "hot button" issues (such as pesticide use and drift, animal welfare, antibiotics, and GMOs) as part of farm management decisions
- Providing affordable and high quality/nutritious agricultural products that promote healthy homes and communities across the USA



# NISA as a Sustainability Factor

Interest in sustainability has been advancing in the agricultural arena, and U.S. agriculture must engage in the sustainability discussion. NISA provides leadership in this discussion by engaging producers, producer organizations and others to identify achievable, affordable, and scientifically-based continuous improvement strategies for sustainable agriculture that are agreeable to both producers and the supply chain. Through this process, NISA helps both ends of the supply chain meet sustainability expectations.

***NISA assures the supply chain that participating initiatives meet commonly-held sustainability goals and expected outcomes through the implementation of regionally-appropriate practices and valid metrics across the crop and/or livestock sector. At the same time, NISA provides participating sustainability initiatives and their producers' marketing and production information, research results, and insight into supply chain needs.***

Through this ongoing leadership and interaction, NISA is building a federation of producer-led sustainability initiatives that meet basic expectations of the supply chain, public, and producers. Furthermore, these initiatives will reflect the unique nature of diverse agricultural enterprises, soils, climates, and markets where products are produced and sold.

NISA-participating sustainability initiatives document producers' pursuit of continual improvement in all aspects of the farming system—agronomic, animal husbandry, environmental, social, and economic indicators; farm productivity; natural resource protection; risk assessment and management; and long-term succession planning.

***All types of agriculture can be sustainable—it is not dependent on type of operation, size, scale or location, but rather on the knowledge, implementation and improvement in an individual system. All aspects of the sustainable farming system should be balanced to promote total farm viability for the long-term.***

In coming years, NISA participants will utilize convenient on-line tools to help participants measure achievement, advance innovation, and build confidence within the supply chain. Such tools are under development by a number of organizations and will help producers benchmark and track sustainability achievements. For more information about NISA and how it can help meet your sustainability goals, please visit [nisa.cals.wisc.edu](http://nisa.cals.wisc.edu).



For more information about NISA, please contact a provisional board member ([nisa.cals.wisc.edu](http://nisa.cals.wisc.edu)) or contact Jed Colquhoun at [colquhoun@wisc.edu](mailto:colquhoun@wisc.edu) or (608) 890-0980.