



Economics of Farm and Agribusiness Sustainability

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Introduction

Consumer demand for food grown using sustainable farm practices is at an all-time high (Nielsen, 2018). This is compelling farmers to explore various options to improve sustainability.

This handout, which accompanies a webinar on “Business Goals and Sustainability”, provides an overview of the economics of farm and agribusiness sustainability. The webinar and handout are part of the *Virginia Sustainable Farms and Agribusiness Education Initiative* offered by Virginia Tech’s Department of Agricultural and Applied Economics and Virginia Cooperative Extension. More information about the program is available at <https://aaec.vt.edu/extension/va-sustainable-farms-agribusinesses.html>.

What is sustainability?

“Sustainability” has become a buzzword, overused and often misunderstood. Sustainability is generally associated with the environment. Long-run economic viability and social responsibility are also essential components of sustainability.

In 1987, the UN World Commission on Environment and Development presented the following definition: “Sustainable development seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future.”

“Sustainable agriculture” has been defined in U.S. federal law (7 USC §3103) to mean “an integrated system of food and fiber production that will, over the long-term... (A) satisfy human food and fiber needs; ... (B) enhance environmental quality and the natural resource base... (C) make the most efficient

use of nonrenewable resources and on-farm resources... (D) sustain the economic viability of farm operations; and (E) enhance the quality of life for farmers and society as a whole”.

The various components of the definition interact with and enhance one another. In today’s marketplace, economic viability requires that businesses address environmental and social issues.

Why is sustainability important?

Corporate social responsibility (CSR) and sustainability have been topics of conversation for decades. In 2019, the CEOs of 181 major American corporations signed a “Statement on the Purpose of a Corporation”. In this statement, the CEOs committed to “deliver value to all” stakeholders, including customers, employees, and communities. The statement also pledged to “protect the environment by embracing sustainable practices” (Business Roundtable, 2019). In the coming years, it will become more important than ever for farm businesses to incorporate sustainability goals.

In Virginia, which is rapidly becoming more urban, these issues are more critical than ever. Farmland is being converted to other uses, which means that farmers must become more profitable to stay in the farming business. At the same time, regulations on farming are becoming more stringent.

Globally, the population is expanding rapidly while agricultural productivity is slowing. These changes are creating major challenges for agriculture. The growing population is also increasingly wealthy, so demand for meat and fresh fruit and vegetables is also rising. Furthermore, farmland is being

converted into other uses in many places. In other places forests, which help to slow climate change, are being converted into farmland. These challenges have made environmental sustainability more critical than ever.

What kinds of issues relate to farm and agribusiness sustainability?

The most essential component of sustainability is long-run economic viability. Long-run economic viability is intricately connected with environmental and social impacts. A sustainable farm is one that the owner's great-granddaughter would be happy to inherit—not just content to inherit, but happy to inherit. To preserve a farm's value over many decades, efficient production practices must be adopted. A farm's soil and water resources should be conserved. Farm operators should consider marketing particularly desirable attributes of their products. Attention should be paid to ensuring that farm workers and operators maintain good quality of life. Policymakers should also consider the aesthetic value of open farmland (as compared with housing or other uses). It is also important to consider the affordability of food and the economic viability of rural communities.

For a more in-depth discussion of sustainable agriculture and practices that can be used to improve sustainability, please see Feenstra et al. (undated).

What are the main economic challenges facing farms and agribusinesses?

Throughout the 20th and 21st centuries, farms have become more efficient and consolidated (Sumner, 2014). This consolidation has led many farm families to leave the industry. Often, they sell their farmland for development of housing and move into urban areas. To remain competitive, farms must invest in expensive equipment that can help improve efficiency. Farms may also have to consider rebranding and diversifying their marketing channels. New marketing strategies may include

selling directly to consumers. Many farms have also successfully transformed their businesses into agritourism operations.

What are the main environmental impacts of agriculture?

The main environmental impacts of agriculture include water, soil, and air pollution. In addition, expansion of agriculture and runoff from existing farms threaten wildlife habitat. Furthermore, soil erosion threatens the viability of agriculture. Runoff from farms can also lead to dead zones in offshore areas such as the Gulf of Mexico.

What are the main social-responsibility challenges facing the farm and food industries?

Some of the main social-responsibility challenges include food affordability and ensuring a safe, healthy, and nutritious food supply. The continued viability of rural communities is essential to ensuring that future generations will remain in agriculture. Safe working conditions are especially important in light of the COVID-19 pandemic (Taylor et al., 2020).

What are some solutions to improving agricultural sustainability?

Farms and agribusinesses can improve their sustainability by adopting environmentally friendly and socially responsible production practices. Farmers may want to consider adopting no-till or low-till agriculture to improve soil conservation. They may also consider precision agriculture to improve efficiency of water and chemical use. By setting aside land for wildlife habitat, farms can improve water quality and may also benefit from USDA payment programs (CRP and CREP). Other practices, like crop diversification and planting cover crops may generate environmental benefits. Farmers may also consider producing renewable energy by installing solar panels on buildings. Other

types of renewable energy that farms may produce include wind and geothermal. Some consumers value the environment and may pay more for “eco-friendly” products. But farms must clearly document their environmental practices to see such dividends. Other consumers value social practices like increased worker wages.

Lastly, some farmers should consider adopting high-tech production systems, which can be more efficient than traditional systems. Genetically engineered (GE) seeds typically allow for the reduced use of harmful chemicals. Recently, new GE varieties with health or cosmetic benefits have been introduced. Other high-tech production systems include greenhouses, hydroponics and aquaponics. Robots are also available for milking cows, picking tomatoes, and many other uses.

Farms can become more sustainable by setting environmental and social goals. To become more profitable, farms should then market their environmental and social responsibility.

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