

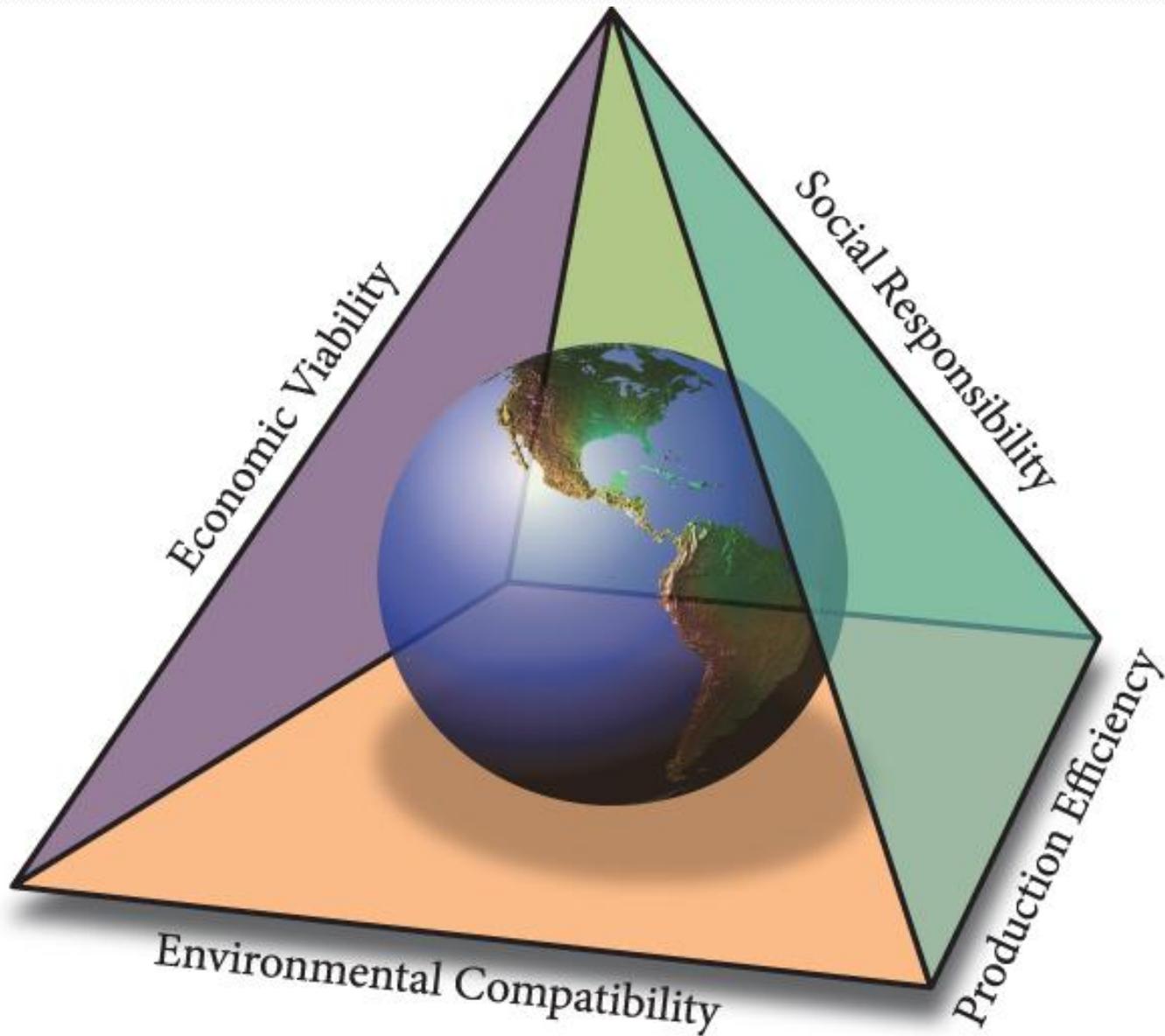


Grand Challenge I

***Enhance the sustainability,
competitiveness, and profitability of U.S.
food and agricultural systems***

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“Sustainability is more than a buzz word”

- Enhancing environmental quality and the natural resource base upon which the agricultural economy depends
- Enhancing efficient use of nonrenewable and on-farm resources and, where appropriate, integrating natural biological cycles and controls
- Sustaining the economic viability of farm operations and the entire agricultural industry
- Improving the quality of life for farmers, ranchers, and society as a whole
- Providing for adaptive management that can meet climatic changes or other megatrends

Research Needs and Priorities

- Water Resources – quality and quantity
- Develop New Plant Products, Uses, and Crop Production Systems
- Develop New Animal Production Technologies, Practices, Products and Uses
- Improve the Economic Return to Agricultural Producers
- Improve the Productivity of Organic and Sustainable Agriculture
- Improve Agricultural Productivity by Sustainable Means, Considering Climate, Energy, Water and Land Use Challenges
- Maintain a Sustainable Environment

Expected Outcomes - 1

With investment in, and adaptation of, these new and universal approaches, agriculture will be subject to evaluation and assessment using the same sets of tools and metrics and the same vocabulary as that used to evaluate energy use, carbon footprints, fair trade, etc., in a variety of land uses.

Evaluating agriculture using a framework that places agricultural production, and ultimately stewardship, within this broader context will benefit farmers as well as consumers.

Expected Outcomes - 2

Without the investments in the research areas outlined above, agricultural systems that continue to have a narrow focus primarily on productivity will be highly vulnerable to increases in energy costs, loss of key fertilizer sources (e.g., phosphorus deposits), and climate variability.

Without development of data sets and holistic analytical tools with which to evaluate sustainability in agriculture, we will not be equipped to meet the enormous challenges anticipated in the near future.