What is Sustainable Agriculture?

Agriculture is sustainable when it:

• Feeds and nourishes people
• Restores and protects the land, air, water and other species on our planet
• Is resilient to and helps mitigate climate change
• Provides livelihoods and dignity for farmers, workers, families and rural communities
A practice By Any Other Name...

- The many perspectives and approaches to sustainable agriculture
  - *Agriculture Environmental Management (USDA, Land Grant Universities, et. al.)*
  - *Sustainable intensification*
  - USDA organic
  - Agroecology
  - Climate-smart agriculture
  - Rotational grazing
  - Permaculture, restoration agriculture, holistic management
  - Local agriculture/foodsheds
  - Multi-trophic aquaculture

- What are we describing?
- How is this a departure from traditional and conventional agricultural systems?
Sustainable Intensification

A response to the challenges of increasing demand for food from a growing global population in a world where land, water, energy and other inputs are in short supply, overexploited and used unsustainably.

• The approach stresses that increasing food production must be matched by a concerted focus on making it sustainable.
• While farmers in many regions of the world need to produce more food, it is equally urgent that policy makers act on diets, waste and how the food system is governed.
• The approach emphasize that there is a need to produce more food on existing rather than new farmland because converting uncultivated land would lead to major emissions of greenhouse gases and cause significant losses of biodiversity.

Agroecology

• To address "the key challenges of mitigating environmental impacts of agriculture while dramatically increasing global food production, improving livelihoods, and thereby reducing chronic hunger and malnutrition over the coming decades."

• Definitions
  • “at present, agroecology can be interpreted as a scientific discipline, as a movement or as a practice”
  • “The integrative study of the ecology of the entire food system, encompassing ecological, economic and social dimensions.”

Climate-Smart Agriculture

An integrative approach to address the interlinked challenges of food security and climate change with three objectives:

• Sustainably increasing agricultural productivity, to support equitable increases in farm incomes, food security and development
• Adapting and building resilience of agricultural and food security systems to climate change at multiple levels
• Reducing greenhouse gas emissions from agriculture.

CSA aims to address these objectives together at different scales - from farm to landscape – at different levels - from local to global - and over short and long time horizons, taking into account national and local capabilities and priorities.

Climate-smart agriculture is being advanced by the UN Food and Agriculture Organization, http://www.fao.org/climate-smart-agriculture/en/
Figure SPM.7 | Summary of projected changes in crop yields, due to climate change over the 21st century. The figure includes projections for different emission scenarios, for tropical and temperate regions, and for adaptation and no-adaptation cases combined. Relatively few studies have considered impacts on cropping systems for scenarios where global mean temperatures increase by 4°C or more. For five timeframes in the near term and long term, data (n=1090) are plotted in the 20-year period on the horizontal axis that includes the midpoint of each future projection period. Changes in crop yields are relative to late-20th-century levels. Data for each timeframe sum to 100%. [Figure 7-5]
"Did Climate Change Help Spark The Syrian War? Scientists Link Warming Trend to Record Drought and Later Unrest"

"A new study coauthored by Richard Seager of Columbia University's Lamond-Doherty Earth Observatory says a record drought that ravaged Syria in 2006-2010 was likely stoked by ongoing manmade climate change, and that the drought may have helped propel the 2011 Syrian uprising.

Researchers say the drought, the worst ever recorded in the region, destroyed agriculture in the breadbasket region of northern Syria, driving dispossessed farmers to cities, where poverty, government mismanagement and other factors created unrest that exploded in spring 2011. The conflict has since evolved into a complex multinational war that has killed at least 200,000 people and displaced millions.

The drought "added to all the other stressors, it helped kick things over the threshold into open conflict. And a drought of that severity was made much more likely by the ongoing human-driven drying of that region."

A growing body of research suggests that extreme weather, including high temperatures and droughts, increases the chances of violence, from individual attacks to full-scale wars. Some researchers project that manmade global warming will heighten future conflicts, or argue that it may already be doing so.

Meeting the Challenge of Sustainable Agriculture

Individuals and organizations from across the agriculture sector are working to confront the challenge of feeding a growing and increasingly prosperous population while minimizing environmental, social and climate change impacts.

Our forum today will address this topic from the perspective of large US agribusiness corporations, profiling movement toward sustainable large-scale agricultural production.
Sustainable Agriculture From the Perspective of Corporate Sustainability

Andrew Winston will describe what he terms the "big pivot" occurring in the world of business, embracing resilient, sustainable and climate friendly modes of operation that reduce risks and costs and yield competitive advantage for the corporations that choose to chart this course.
"Corporate sustainable development is “not environmental or ethical but economic; if it fails economically as a business concept, as an engine of innovation (and value creation), then it fails. It succeeds when it celebrates economic growth that in turn grows ecological and social revenue."

The Value of corporate sustainability can be measured in terms of both "scale and velocity."

Source: The Upcycle: Beyond Sustainability -- Designing for Abundance, Michael Braungart and William McDonough, 2013, North Point Press
Our Presenters

• **Andrew Winston** -- Author, consultant and founder of Winston Eco-Strategies
• **Erin Fitzgerald** -- Senior Vice President for Global Sustainability with the Innovation Center for U.S. Dairy
• **Dennis Treacy** -- Executive Vice President and Chief Sustainability Officer with Smithfield Foods
Why a Forum?

"a place, meeting, or medium where ideas and views on a particular issue can be exchanged."
Thank you for your interest and participation!

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