

PRECISION AGRICULTURE: INCREASING FOOD AVAILABILITY THROUGH EFFICIENCY IN AMERICA'S FOOD SYSTEMS

Global oil and food systems are both operating near full capacity, and demand is on the rise. As a result, rising prices are hurting Americans today, and the United States is at risk of food and fuel shortages in the future. Complicating matters are the increasing linkages of our food and fuel markets through the mechanisms of corn-based ethanol and oil usage in the food system.

To help head off an impending food and fuel crisis, Sustainable America aims to reduce U.S. oil consumption by 50% by 2030 while increasing U.S. food availability by 50% by 2035. Several solutions are within reach. Increasing our industrial food production through precision agriculture methods that increase efficiency is one way to increase food availability and create a more secure and stable food supply. Here's a little background:

Population Trends Drive Increased Demand, Increased Food Insecurity. As the global population surges from 7 billion (2012)¹ to approximately 9 billion in 2035² and demand from growing middle and upper classes in emerging market nations increases, the amount of food needed to feed people will grow from approximately 20 trillion calories per day to 25 trillion calories per day³, a 25% increase that will strain already stressed food systems.

Already, we're able to see the pressure on the food system and food prices here in the United States, as reflected by the nearly 50 million Americans living in a state of food insecurity, meaning that they cannot always meet their basic food needs.

FOOD INSECURITY IN AMERICA



6 IN 10 AMERICANS KNOW SOMEONE PERSONALLY WHO HAS STRUGGLED RECENTLY TO AFFORD FOOD

Our Goal: Increase Industrial Food Production By 25% Through Increased Efficiency. Large-scale farming accounts for between 96% and 99% of total agricultural production in the United States, and thus remains critical to the present and future of American and global food supplies. While consumer interest in local and organic farming is growing, these methods alone cannot deliver the scale necessary to accommodate the growing need for calories, either domestically or globally, meaning that large-scale agriculture will continue to have a place as the major source of food for the planet. While crop yields in the United States have grown in the last decade, finding additional acreage to plant crops may mean moving further into marginally productive farmland and climates. Sustainable America believes that large-scale farming can be pursued more efficiently and sustainably, and is an important part of meeting global food demands.



SUSTAINABLE
— A M E R I C A —



SUSTAINABLE AMERICA SUPPORTS

Food Waste Solutions
Alternative Farming
Precision Agriculture
Natural Gas Vehicles
Electric Vehicles
Fuel Efficiency
Advanced Biofuels

¹ US Census Bureau

² UN World Population Division

³ Bridgespan Group and Sustainable America estimate, based on data and projections from the Food and Agriculture Organization of the UN, and the International Institute for Applied Sciences. & US Census Bureau

Precision Agriculture: More Efficiency, More Food. Precision agriculture seeks to use new technologies to increase crop yields and profitability while lowering the levels of traditional inputs needed to grow crops (land, water, fertilizer, herbicides and insecticides). We see great promise in these new methods that increase production efficiently, including:

GPS devices on tractors that allow farmers to plant crops in more efficient patterns and proceed from point A to point B with more precision, saving time and fuel.

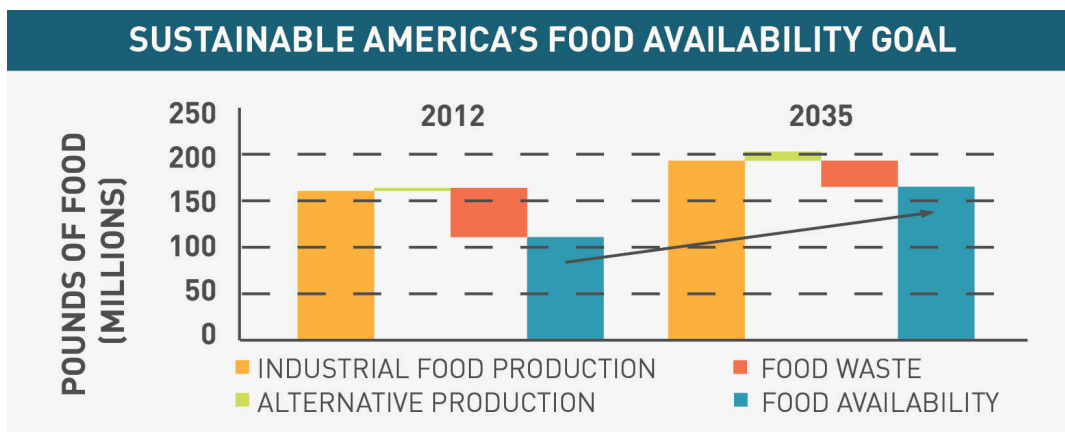
Laser leveling of fields, which means water can be applied more efficiently and with less farm effluent, such as fertilizer, running off into local streams and rivers.

Precision application of pesticides and herbicides with more advanced equipment, which helps prevent over-saturation and soil degradation.

We support other initiatives to improve crop yields, as well as soil health and crop diversity that can make our food supply more resilient in the face of drought, pests, and crop diseases. For example, the “Marsden process” mixes precision agriculture concepts with traditional organic farming techniques, where mono-cropping is swapped out for strategically planned crop rotation and fertilization schemes. This enhances soil health and maintains crop yields competitive with modern industrial farming.⁴

Our Proposed Solutions Include:

- **Supporting efforts** to increase the energy efficiency and production levels of large-scale farming efforts.
- **Supporting innovation** in sustainability practices in large-scale farming operations.
- **Funding entrepreneurs** that seek to address these issues.



Sustainable America is concerned with increasing food availability and making our food systems in America more resilient to price shocks, severe weather and other unforeseen events in the future. We believe that with focused and concerted efforts, we can simultaneously increase food production and decrease food waste to create a more sustainable America into the future.

⁴ Sustainable America, blog
11/5/12