

Addressing Agricultural Needs and Biodiversity

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Introduction

Agricultural Needs, Biodiversity and Climate Change

Agriculture is the largest land use in Southwest Florida with over 1 million acres in pasture land alone. It is the second largest economic driver, second only to tourism. Agriculture in Florida employs about 20% of Floridians. 95% of the farms in Florida are family farms. The major activity is growing vegetables, with over \$2 billion in value produced from the end of October through mid-May. South Florida provides nearly 70% of the vegetables consumed east of the Mississippi and feeds over 150 million people. Other major crops include citrus and sugar cane. However, the climate is changing in Southwest Florida. In the past 10 to 15 years, winters have been getting warmer and many crops such as lychees, blueberries do not get enough cool hours this far south.

Agriculture is a resilient industry and for centuries, farmers have modified the environment to favor production and protect crops and livestock through a variety of methods. The future of food production is more food, with less inputs, impact and resources. However, farming will be impacted by and have to respond to climate issues. Heavy reliance on fertilizers and pesticides may become even more costly to struggling farmers, as climate change impacts, including precipitation variability and heat, accelerate soil erosion and increases pest problems. Heavy use of chemicals increases the pollution burden faced by downstream communities. Farmers may also increase irrigation in response to rising temperature extremes and drought, further impacting water supplies.

Although agricultural operations can contribute to climate change, agriculture also provides open space and a number of ecosystem services or environmental benefits, such as aquifer recharge, carbon sequestration, wildlife habitat, and biodiversity -- all of which help mitigate the effects of climate change. Consumer behavior may inadvertently impact agriculture's ability to provide environmental benefits. For example: consumers often seek out cheap and convenient foods. Many U.S. and Florida farmers are being pushed out of the market due to significant competitive advantages in countries that produce and export fruits and vegetables below market value. This creates the incentive to sell off land for development.

Agriculture is one of the few sectors that can contribute to mitigation and sequestration of carbon emissions. Accounting for agriculture's carbon footprint is necessary, particularly if agriculture is included in greenhouse gas reduction commitments. However, the range and variability of estimates, and the complexity and uncertainty of accounting for indirect land use change remain to be resolved. Conversion from agricultural lands to rural residential, housing tracts, and golf courses could further exacerbate climate related issues, due to increased development and a resulting heat island effect. Adoption of wise policies will play a role in enhancing the ability of agriculture to adapt to climate change, while also contributing to other over-arching societal environmental goals.

Resource and Information Links

Videos/Article:

<https://www.ucsusa.org/resources/climate-change-and-agriculture> video

<https://www.epa.gov/agriculture/agriculture-and-climate>

Discussion Questions

1. Farmers will face many obstacles to changing practices, so it's critical that policymakers shift federal agriculture investments to support agricultural practices that mitigate climate change impacts. How can we better support and accelerate this transition? What policy levers can we pull to help get these solutions off the ground?
2. How do we continue to grow food to feed people in the U.S. without chemical methods? Is this realistic?
3. How can we better invite agriculture to the table on climate change discussions?

Initial List of Potential Strategies

- A. Educate the community to look for "*Fresh From Florida*" in the grocery store and buy U.S. grown products.
- B. Promote "Eat in Season" to reduce food miles www.swflfresh.com
- C. Support government initiatives that acknowledge and quantify environmental services provided by agriculture and compensate agriculture for those services.
- D. Provide incentives to support agricultural activities that can help mitigate climate change impacts, including water farming and carbon sequestration.
- E. Teach food-growing and related science in K-12 school classrooms.
- F. Invite agriculture to the table to understand how climate change manifests for them, and work with them to address it.