What Can "Local" Food Do?

DAVID ARTHUR CLEVELAND, UCS SCIENCE NETWORK, UCS | FEBRUARY 2, 2017, 10:28 AM EST

What does "local food" mean? Most of us think of local food as something that was grown nearby geographically, although the distances can vary a lot.

We also tend to make a lot of assumptions about what local food can *do*. For example, we think of "local" food, as a more sustainable alternative to the global, industrial food system that produces lots of food, but is also environmentally destructive, makes people sick, and leaves many hungry.

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So, we need to keep asking questions: What are our specific goals for a more sustainable alternative to the global industrial food system? Is promoting local food helping us to make progress toward those goals? Is "local" a good indicator of progress toward those goals? How can we adjust our actions and policies, and the indicators we use to measure them, to make more progress? I'll give a few examples of how this works, from our research in Santa Barbara County, California.

Local food, transportation, and climate change

We often assume that because local food doesn't travel very far to get to us, that it produces fewer greenhouse gas emissions

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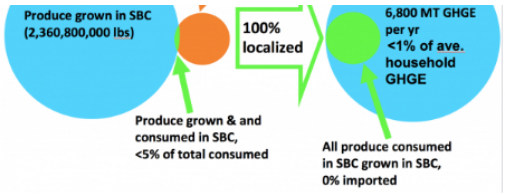
(GHGE) overall, because of less transportation. So, a question we asked in our Santa Barbara research was, "Is reducing food miles a good way to reduce GHGE?"



The effect of localizing fruit and vegetable consumption in Santa Barbara County, California.

Santa Barbara County (SBC) is a prime example of the missed potential for local food; despite having an active local food movement, 95% of fruits and vegetables consumed in 2008 was imported from outside the county, while 99% of the more than $1 billion dollars' worth (2.36 billion pounds) of vegetables and fruits grown in Santa Barbara county in 2008 was exported.

To see what contribution localization could make to reduce GHGE, we modeled the effect on GHGE of a change to all fruits and vegetables consumed in the county being grown in the county. We found that this would be a savings per household of only 0.058 MT of GHGE per year, or about 9% of the average U.S. household's annual GHGE for produce. However, that only amounts to about 0.7% of a U.S. household's total GHGE for food, and less than 0.1% of total U.S. GHGE per person.

In fact, most GHGE from food are from production, especially of animal foods. So if fighting climate change is a goal, maybe we need to look beyond localization. For example, the only life cycle assessment of the complete US food system found that eliminating meat and dairy from our diets just one day a week could reduce GHGE more than totally localizing the entire food system.

What about food gardens, food waste, and composting?

You can't get more local than growing food in your home, community, or school garden. So, we modeled the effect of converting an area of lawn to a household vegetable garden in Santa Barbara County, and composting household organic waste at home for use in the vegetable garden. We found that gardens reduced GHGE by about 2 kg per kg of vegetable, compared to households with no gardens, purchasing all their vegetables, an 82% reduction in GHGE. And if 50% of single-family housing units in Santa Barbara County had a 200 square foot garden, they could contribute 3.3% of the official county GHGE reduction target, and if scaled to the state level, 7.8% of California's target.

We also looked into the effect of the way household organic waste was managed, since this accounted for the largest portion of garden emissions savings, even greater than the emissions savings from reducing purchased vegetables. We found that if landfills that efficiently captured and burned methane for energy and efficient aerobic composting operations were an option, gardeners could have the greatest emission reductions by exporting their organic waste to those operations. They could then import the compost, rather than composting at home, so gardeners need to ask questions about their options for processing their organic waste—it may be more climate-friendly to advocate for municipal composting facilities, rather than the more local option of composting on site.

What about the bottom line?

Can local food be economically profitable? Local food hubs that consolidate local farm harvests and redistribute them are an important tool for localizing food. But when they try to scale up volume to have a larger impact and more revenue, they need to adapt to the dominant industrial food system, from infrastructure to economics. This can compromise their goals, because there are often tradeoffs among environmental, social, and economic aspects of sustainability. Can local food be economically viable while prioritizing people and the environment?

In our case study of a local a food hub in Santa Barbara, we found that the key to success in meeting the goals of environmental sustainability and improved community nutrition was prioritizing those over the goal of economic profit, while still being economically viable.

Wesley Sleight and Anna Breaux, founders of Farmer Direct Produce local food hub

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On September 28, 2016, Senator Debbie Stabenow [D-MI] introduced S.3420, the Urban Agriculture Act of 2016. It includes support for a wide range of urban agriculture, from community gardens to technology intensive methods like aeroponics, based on the assumption that these will support local food infrastructure and economies, better nutrition, and environmental sustainability.

This bill is timely, as urban agriculture has become a popular form of local food production. For example, in our survey of Santa Barbara County residents, we found that the majority favored not building on land used for urban agriculture.

I think one of the strongest parts of this bill is the provision calling for research on the funded projects. This means asking if the goals of urban agriculture are actually being promoted, and providing information for improving them.

As our research has demonstrated, while local food systems can do a lot to promote more sustainable alternatives to the industrial system, we need to keep asking questions to ensure that our good intentions aren't unintentionally compromised. In many cases other actions, such as changing production practices, and especially changing diets, may be more effective, or are needed to complement localization.

Bio: David Arthur Cleveland is Research Professor in the Environmental Studies Program and the Department of Geography at the University of California, Santa Barbara. He is a human ecologist whose research and teaching focuses on sustainable, small-scale agrifood systems, including work with small-scale farmers and gardeners around the world. He is currently researching the potential for agrifood system localization and diet change, to improve nutrition, reduce greenhouse gas emissions, and promote food and climate justice, in California, the US, and globally. His latest book is Balancing on a Planet: The Future of Food and Agriculture.

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