

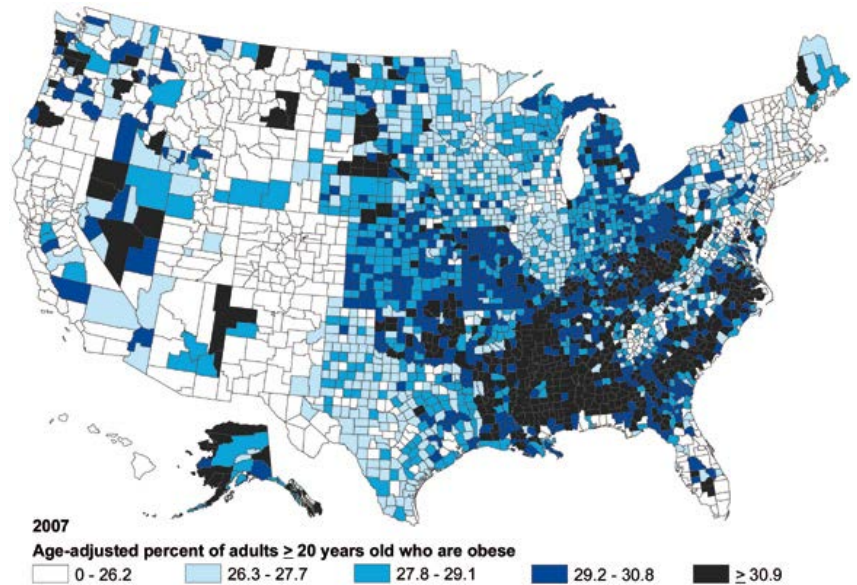


# Food Systems, Health, and Well-being

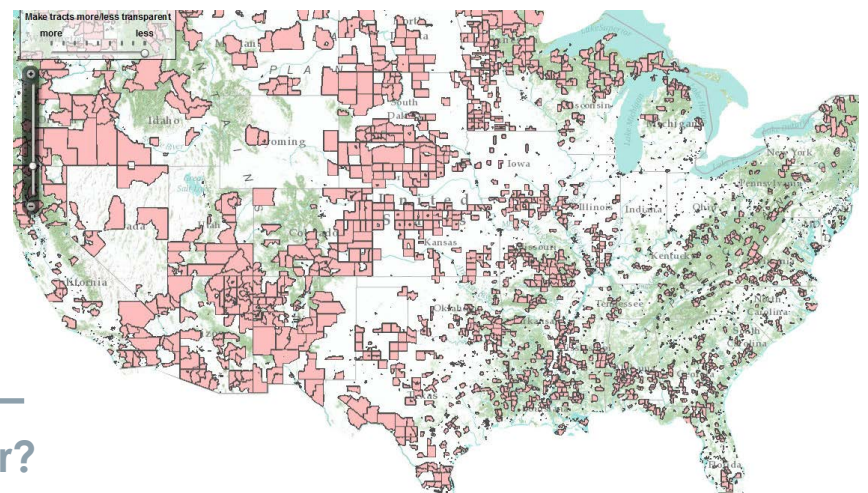
This project's research and outreach raised awareness among policymakers, local leaders, and the public that community organization, the food environment, and agricultural practices impact human health. These efforts have facilitated solutions to local and national food issues, such as food access, hunger, high obesity rates, and food safety.

## Who cares and why?

Changes in food and agricultural systems over the past 30 years have impacted human health and environmental quality through dietary and lifestyle factors, food types, distribution, and access, biotechnologies, and agricultural land use practices. An area's "food environment" influences the mortality, morbidity, and quality of life of the people that live in the community or region. Heart disease, some cancers, stroke, diabetes, and obesity are all associated with dietary and environmental factors, and evidence suggests that populations with the lowest mortality have the healthiest diets. Changes in agriculture have also introduced new technologies and food safety issues; however, these topics (for example, genetically modified food) are often marginalized in mass media coverage, and information is only shared with the public when a problem occurs. To protect human health, more information is needed about changing patterns in food access, retail options, consumer perceptions, food habits, and the environmental impacts of food production.



The black and darker blue areas in the top map (courtesy of Centers for Disease Control) indicate counties with higher percents of adults who were obese in 2007. The pink areas in the bottom map (courtesy of USDA-ERS) indicate current "food deserts" where access to affordable nutritious food is limited.



## What has the project done so far?

This project has brought together researchers from many disciplines, including sociology, nutrition, food science, anthropology, communications, and geography. NC-1033 scientists have examined how agricultural, food, and social structures vary between communities and regions and how these different structures influence food availability, type, and quality. Researchers have developed models that show how these variables influence food consumption patterns and obesity rates. Researchers have also used models to show how consumer perceptions of food influence food consumption patterns and obesity rates. As part of the group's research and outreach efforts, they have held interviews with local leaders and focus groups with citizens and have shared findings in the popular press and technical publications.

## Impact Statements

Increased awareness among policymakers, community leaders, and the public that community organization, the food environment, and agricultural practices significantly impact human health. This awareness has led to partnerships that facilitate food access, food security, hunger, and community health interventions.

Developed educational materials and a website ([www.extension.iastate.edu/hunger](http://www.extension.iastate.edu/hunger)) in Iowa that are used by state food banks and community food pantries to solve local food issues.

Influenced curriculum changes at universities, encouraging more research and teaching related to food-related health issues such as obesity and diabetes.

Conducted studies that have led to a better understanding of the opportunities for and barriers to implementing food safety hazard analysis programs.

Guided changes in dinner patterns for 30 families in Houston, Texas, improving dietary intake and lowering the children's obesity risks.

Tested water quality in an impaired Ohio stream, providing evidence of high nitrate and fecal coliform levels that prompted the county health department to take action. Three farmer teams have since changed farm management practices to lower nitrogen and phosphorous levels in the stream and one industry permit holder has created a nutrient trading program.

Helped organize and promote urban gardening programs, providing a source of nutritious foods, urban greening, sense of community, and exercise, thus addressing obesity and chronic disease risk. NC-1033 also developed testing and management strategies for residential garden plots with very high lead levels.

## What research is needed?

Reducing obesity risks is an uphill battle considering current agriculture subsidies, food advertising, the location of retail options, and societal values on what is appropriate to eat. Therefore, researchers must set realistic goals for making impacts at the community level and seek the help of local leaders and reporters in influencing national discourse.

## Want to know more?

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Edited and designed by Sara Delheimer



Emerson Elementary School Green Team students volunteer during their lunch recess in the garden. Community gardens offer a source of nutritious, fresh, local foods as well as a place to promote awareness about food and health issues. Photo courtesy of USDA.