

Charting Growth: Sustainable Food Indicators

The Wallace Center at Winrock International, with support from the W.K. Kellogg Foundation's Food and Society Initiative, is pleased to announce the development of indicators for healthy, green, fair and affordable food and food systems.

Charting Growth: Sustainable Food Indicators presents a set of tools for each "good food" attribute, with a focus on **National Indicators** that have sufficient reliable, publicly available data to show trends over the last 20-25 years. The *Charting Growth* team has also selected **Hot Spots** for each attribute to highlight the places and conditions or issues that most need policy attention, and **Promising Innovations** that show progress toward a greater and more broadly available supply of good food and a more sustainable food system.

The global food crisis and growing awareness of the interdependence of people with our natural environment have focused attention on the urgent need to build more sustainable food systems. From greenhouse gas emissions by livestock to alarming increases in obesity and diet-related disease, the evidence is mounting that current food production, distribution and consumption patterns are not sustainable. While productivity and yields of major crops have increased dramatically in the United States since the middle of the 1900s, our food system still does not meet many basic criteria of sustainability.

Even before the current economic recession, at least 36 million people including children in about 323,000 households were food insecure, or unable to access sufficient quantities of healthy food because of lack of resources. During the recession, these numbers have increased and demands on the private emergency feeding system are overwhelming their capacity to provide food. Healthy food remains inaccessible to many people; and the prevalence of diet-related diseases such as diabetes is rising, with ever younger children being affected. Problems such as the growing hypoxic zone in the Gulf of Mexico and continued erosion of fertile soil show that increased yields have often been at the expense of decreased quality and quantity of natural resources.

The Wallace Center at Winrock International supports efforts to significantly increase the supply of healthy, green, fair and affordable food in the United States. This work links food production and consumption by going beyond how food is produced to how it is processed, distributed and consumed. *Charting Growth* provides a set of tools to begin to determine whether the supply of good food is increasing, and whether our food system is actually becoming more sustainable.

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An overview of National Indicators, Hot Spots and Promising Innovations for each attribute—healthy, green, fair and affordable—follows. For more detailed information and opportunities for public comment, please visit the Wallace Center project page: www.wallacecenter.org/chartinggrowth. Project staff are especially interested in the extent to which the draft indicators are suitable for community-based organizations seeking to improve access to good food for people who do not currently enjoy it, throughout the United States.

National Indicators

A positive change toward greater health, fairness, "greenness" or affordability of the US food supply, documented with reliable, publicly available, transparent longitudinal data.

Hot Spots

Places or situations in which impacts of the lack of healthy, fair, green and affordable food and food systems create especially serious conditions that need attention.

Notable Facts

Supplemental data that rounds out the picture of the current state or trend of an attribute of good food.

The **Wallace Center** supports entrepreneurs and communities as they build a new, 21st century food system that is healthier for people, the environment, and the economy. The Center builds and strengthens links in the emerging chain of businesses and civic efforts focused on making good food—healthy, green, fair, affordable food—an everyday reality in every community. **Winrock International** is a non-profit organization that works with people in the United States and around the world to empower the disadvantaged, increase economic opportunity, and sustain natural resources.



Charting Growth: Sustainable Food Indicators

Full report at www.wallacecenter.org/chartinggrowth

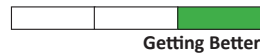
Environmental Trends	Health Trends	Fairness Trends	Affordability Trends
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Environmental Trends

Farmland is remaining in production



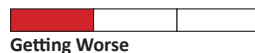
Soil quality is improving



Water contamination by pesticides in agricultural areas is declining



The ratio of nitrogen removed* from US farming systems to nitrogen added** is declining.



* via crops, run-off, volatilization, etc.
** via fertilizer, manure, etc.

Agricultural production emits declining amounts of greenhouse gases



Hot Spots

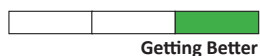
- Livestock wastes are potential sources of endocrine disrupting compounds to the environment.
- Agricultural lands could be a potential source of environmental steroidal estrogenic compounds when animal manure is applied over long periods.
- Estrogen contribution by livestock manure accounts for at least 90 percent of the total estrogen in the environment.
- The 2008 dead zone in the Gulf of Mexico is the second largest on record since measurements began in 1985 and is larger than the land area of the state of Massachusetts.
- Farmland bird populations declined in all OECD countries that report population trends between 1991 and 2004, but the decrease was less pronounced than had occurred over the 1980s.
- Substantial energy losses are incurred in all modern intensive animal production systems, with efficiency ratios as low as 0.05 for lean red meat and no higher than 0.5 for milk. The efficiency ratio is the quotient of harvested food energy and energy invested in the growing process.

Notable Facts

- In 2006, the agricultural production sector was responsible 6 percent of total US greenhouse gas emissions.
- Energy used in food processing, distribution, and wholesale and retail can be twice as large as that consumed by field farming and animal husbandry, and food preparation takes 30-50 percent of all the energy used in an affluent nation's food chain.
- In total, Americans require approximately 19 percent of the total energy use in the US to supply their food.
- A vegetarian diet requires 33 percent less fossil energy than the average American diet.

Health Trends

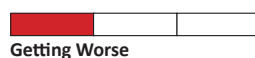
Death rates of diet-related diseases are decreasing



Adult overweight and obesity prevalences are decreasing



Child overweight prevalence is decreasing



Fruit and vegetable consumption meets current US dietary guidelines



The incidence of food contamination is decreasing



Hot Spots

- Type 2 diabetes in children and adolescents, although still rare, is being diagnosed more frequently among American Indians, African Americans, Hispanic/Latino Americans, and Asians/Pacific Islanders.
- Diabetes prevalence in adults ages 20 and older is significantly higher among colored populations, compared with white populations, with rates up to twice as high for some Hispanic populations in contrast to whites.
- Medical expenses associated with overweight and obesity accounted for 9.1 percent of total US medical expenditures in 1998.
- The CDC's National Report on Human Exposure to Environmental Chemicals shows undetectable or very low levels of aldrin, endrin and dieldrin (organochlorine pesticides that have been discontinued in the US); detectable levels of mercury in women of child-bearing age, but below the level currently associated with neurodevelopment effects in the fetus; and widespread exposure to pyrethroid insecticides.
- Agricultural use, much of it for growth promotion of livestock, accounts for 40 percent of the antibiotics sold in the United States.

Notable Facts

- Among 49 states that have data for 1994 and 2005, the age-adjusted prevalence of diagnosed diabetes was at least 50 percent higher in 2005 than in 1994 in 27 states.
- In 2005, only 32.6 percent of the surveyed US adult population consumed fruit two or more times per day, and 27.2 percent ate vegetables three or more times per day.
- Between 1977 and 1996, portion sizes for key food groups grew markedly in the US, not only at fast-food outlets but also in homes and at conventional restaurants.

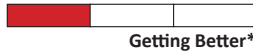
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Environmental Trends	Health Trends	Fairness Trends	Affordability Trends
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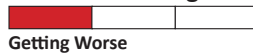
Fairness Trends

Farmworkers receive wages sufficient to support a household for full-time work

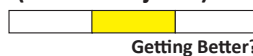


* ... but still far below the poverty threshold. Although hourly wages are increasing, fewer than half of farmworkers can obtain full-time work.

The percentage of farmworkers hired through labor contractors is declining



Food system workers have safe, healthy working conditions (non-fatal injuries)



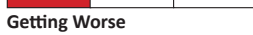
Food system workers have safe, healthy working conditions (fatal injuries)



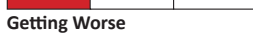
Average net farm income of small & mid-scale family farms matches or exceeds median national household income



Acreage of mid-scale family farms is holding stable



Farmers retain a consistent proportion of the food dollar



Hot Spots

- A California study showed elevated risk of leukemia, stomach, cervical and uterine cancers was significantly elevated in California farmworkers in comparison with the state's Hispanic population.
- Another study of agricultural workers found a positive correlation between urinary organophosphate metabolite levels and poorer performance on some neurobehavioral tests.
- A substantial number of farmworkers' children in a North Carolina study demonstrate multiple exposures to pesticides.
- In California, a study of primarily Latino children found significant correlations between six metabolites of organophosphate pesticides measured in pregnant women's urine and mental development and pervasive developmental problems in their children at 24 months of age.
- Human Rights Watch estimates that 300,000 children work in the US as hired laborers in large-scale commercial agriculture
- Child farmworkers make up only 8 percent of children who work in the United States, yet account for 40 percent of work-related fatalities among minors.
- Hendrickson and Heffernan have documented trends in concentration ratios: the market share controlled by top firms within a specific industry. These demonstrate an extreme level and very rapid increase in concentration in most industries.
- The proportion of non-White farms among all farms in the US fell from 15 percent in 1920 to 2 percent in 1992. The number of Black farms fell from 1 in 7 farms in 1920 to only 1 in 100 farms in 1992.
- Only one-third of Black-owned acres are operated by the owner; most Blacks rented their land to others (mainly Whites). In 1999, only 1.7 percent of farm owner-operators were Black, American Indian or Asian; and 1.9 percent were Hispanic.

Notable Facts

- Farmworker unemployment rates are double those of all wage and salary workers. Those working in field crops have twice the unemployment rate of livestock workers.
- Poverty among farmworkers is more than double that of all wage and salary employees.
- The share of workers employed by a farm labor contractor increased by 50 percent between the periods 1993-1994 and 2001-2002.
- Of all private US agricultural land, Whites account for 96 percent of the owners, 97 percent of the value, and 98 percent of the acres.
- Monsanto has its genetically modified seeds for corn, cotton, soybeans and canola on more than 90 percent of the acreage that uses GMO seeds
- Globally, four seed firms (DuPont [Pioneer], Monsanto, Syngenta and Limagrain) had about 29 percent of the world market for commercial seeds in 2007.

Affordability Trends

The prevalence of household food security is increasing



The prevalence of child food security is increasing



Increases in wages and salaries are equal to or greater than increases in food prices



Hot Spots

- Even the maximum levels of food stamps are inadequate to buy a healthy diet, according to current dietary guidelines.
- "Calorie-dense" foods (i.e., junk food) are cheaper overall and more resistant to price inflation than "nutrient-dense" foods.
- During the past two years when food prices rose sharply in the US, the cost of healthy staples such as milk, fruit, vegetables, bread and eggs rose significantly more than the average price increase.
- The absence of supermarkets and the inability to find quality groceries can lead to food insecurity, hunger, and obesity.
- Foods that are most likely to be missing in stores in low-income neighborhoods include the healthiest foods: fresh fruits and vegetables; whole grain products, such as bread, cereals and pasta; low-fat dairy products; and fish and lean meats.

Notable Facts (For the complete list please refer to the full report at www.wallacecenter.org/chartinggrowth)

- Black (22.2 percent) and Hispanic (20.1 percent) households experienced food insecurity at far higher rates than the national average.
- Retail grocery-store prices leapt 7.6 percent in September of 2008 from a year earlier, driven in part by a 14.2 percent rise in cereal and bakery prices. USDA expects food prices to increase as much as 5 percent in 2009, following an estimated 6 percent gain in 2008.

Charting Growth, a project of the Wallace Center at Winrock International was made possible by a grant from The W.K. Kellogg Foundation. Labels (Getting Better, Getting Worse, Mixed, etc.) represent only the current trend toward the associated indicator. Please refer to the full report (available at www.wallacecenter.org/chartinggrowth) for the complete list of National Indicators, Hot Spots and Notable Facts, as well as source information.