



Presentation originally designed by Dr. Evangeline Linkous, AICP, former Sarasota County Extension Director. Modified and enhanced primarily by Dr. Danielle Treadwell, Associate Professor, Horticultural Sciences, Gainesville, FL.

## CIRCLE QUESTION

- When someone says “food,” what is the first thing that comes to your mind?



## OBJECTIVES

- **Develop or improve your understanding of:**

- The importance of food in our lives
- Food systems
- Agriculture in general
- Florida agriculture

...and answer the question:

***Why does food matter to you?***





Photos: UF/IFAS, Treadwell, UF/IFAS

## FOOD AND YOU: THE U.S. DIET AND FOOD BUYING HABITS

As we go into this section, ask yourself....how are you currently managing your food?

## AVERAGE U.S. DIET

In 2009, the average American consumed...

Item	Amount /year
Red meat (beef, lamb, pork)	105.7 pounds
Milk, cheese and other dairy	607.1 pounds
High fructose corn sugar	50.1 pounds
Cane and beet sugar	63.5 pounds
Fats and oils	78.6 pounds
Fresh fruits	127.5 pounds
Fresh vegetables	184.8 pounds
Grains (wheat, rice, corn, oats)	194.5 pounds



Data: U.S. Census Bureau – The 2012 Statistical Abstract. Food Consumption and Nutrition. "Per Capita Consumption of Major Food Commodities."  
<http://www.census.gov/compendia/statab/2012/tables/12s0217.pdf>



For this information and other related statistics see:

U.S. Census Bureau, U.S. Department of Commerce – The 2012 Statistical Abstract (The National Data Book). [http://www.census.gov/compendia/statab/cats/health\\_nutrition.html](http://www.census.gov/compendia/statab/cats/health_nutrition.html)

## U.S. FOOD CONSUMPTION TRENDS (2009)

- **Since 1980, consumption in 2009 increased in the following categories:**
  - 66% more poultry
  - 187% more cheese
  - 138% more added fats and oils
  - 163% more high fructose corn syrup
  - 7% more fruit and vegetables



Data: U.S. Census Bureau – The 2012 Statistical Abstract. Food Consumption and Nutrition, "Per Capita Consumption of Major Food Commodities."  
<http://www.census.gov/compendia/statab/2012/tables/12s0217.pdf>

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Beef consumption went down (compared to 1980) and consumption of fish and poultry increased.

For this information and other related statistics see:

U.S. Census Bureau, U.S. Department of Commerce – The 2012 Statistical Abstract (The National Data Book). [http://www.census.gov/compendia/statab/cats/health\\_nutrition.html](http://www.census.gov/compendia/statab/cats/health_nutrition.html)

## U.S. FOOD CONSUMPTION TRENDS (2009)

- Since 1980, consumption in 2009 decreased in the following categories:

- 21% less milk
- 9% fewer eggs
- 67% less margarine
- 36% less canned fruits



Photo: Treadwell



Data: U.S. Census Bureau – The 2012 Statistical Abstract  
[http://www.census.gov/compendia/statab/cats/health\\_nutrition.html](http://www.census.gov/compendia/statab/cats/health_nutrition.html)

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For this information and other related statistics see:

U.S. Census Bureau, U.S. Department of Commerce – The 2012 Statistical Abstract (The National Data Book). [http://www.census.gov/compendia/statab/cats/health\\_nutrition.html](http://www.census.gov/compendia/statab/cats/health_nutrition.html)

## OBESITY (2009-2010)

- **In 2009–2010, over 78 million U.S. adults and about 12.5 million U.S. children and adolescents were obese.**
  - **35.7%** Obese adults age 20+ years
  - **18.4%** Obese adolescents age 12-19 years
  - **18.0%** Obese children age 6-11 years
  - **12.1%** Obese children age 2-5 years

Source: Center for Disease Control



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In 2006, average of 3,900 calories available per day, based on estimates of per capita quantities of available food. Estimates are that roughly 1,100 calories are lost to spoilage, plate waste and cooking, and other losses, leaving an average of about 2,800 calories per person per day.

- Up 22% or about 700 calories from 1970

Source: <http://www.cdc.gov/obesity/data/adult.html>

Increased eating out – 32% of total food energy consumption in 1994-1996 (up from 18% in 1977-1978)

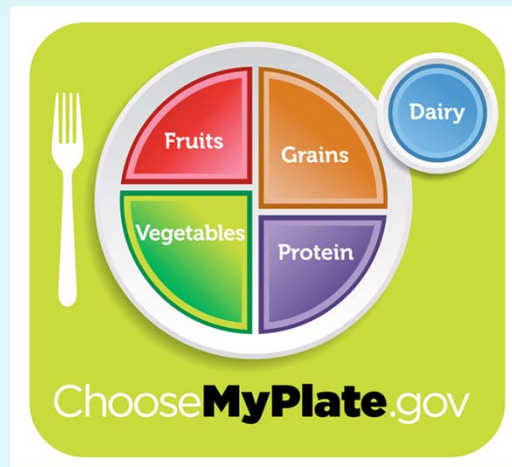
- Data suggests that when eating out, people tend to either eat more or eat higher calorie foods – or both.

Source: <http://www.usda.gov/factbook/chapter2.pdf>

(No difference between adult men and women with regard to obesity).



# USDA DIETARY GUIDELINES



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## USDA MyPlate

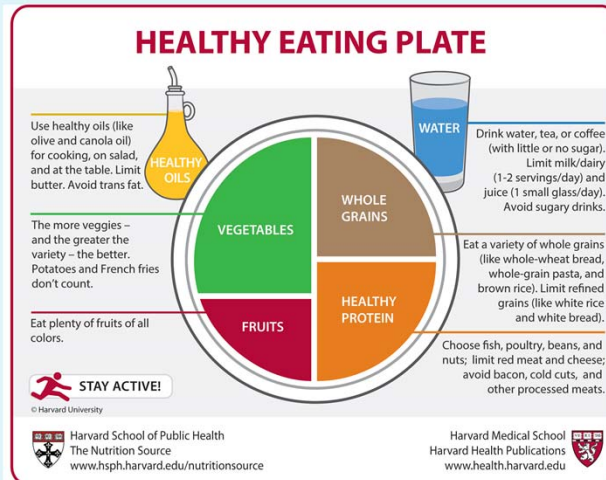
- U.S. dietary guidelines for Americans
- Launched June 2011
- Ended 19 years of food pyramid

MyPlate is divided into sections of approximately 30 percent grains, 30 percent vegetables, 20 percent fruits and 20 percent protein, accompanied by a smaller circle representing dairy, such as a glass of low-fat/nonfat milk or a yogurt cup.

MyPlate is supplemented with additional recommendations, such as “Make half your plate fruits and vegetables,” “Switch to 1% or skim milk,” “Make at least half your grains whole,” and “Vary your protein food choices.” The guidelines also recommend portion control while still enjoying food, as well as reductions in sodium and sugar intakes.

Source for more information: <http://www.choosemyplate.gov/>

# HARVARD DIETARY GUIDELINES



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The Harvard School of Public Health (HSPH) released their own adjusted and more detailed version of MyPlate, called the Harvard Healthy Eating Plate, in response. Harvard's plate features a higher ratio of vegetables to fruit, adds healthy oils to the recommendation, and balances healthy protein and whole grains as equal quarters of the plate, along with recommending water and suggesting sparing dairy consumption. HSPH Chair of the Department of Nutrition, Walter Willett, criticized MyPlate, saying, "unfortunately, like the earlier U.S. Department of Agriculture pyramids, MyPlate mixes science with the influence of powerful agricultural interests, which is not the recipe for healthy eating." The Harvard plate also contains a recommendation for physical activity.

What do you think? What's good about this? And what's missing?

For more information see: <http://www.hsph.harvard.edu/nutritionsource/healthy-eating-plate/>

## FOOD EXPENDITURES

- Americans spend **\$4,229** per year on food.
- **\$2,171/person/year** is spent on food at home, and **\$2,058/person/year** is spent on food away from home.
- **11.3%** of disposable income was spent on food in 2011.
  - This figure excludes food provided by an employer, served at an institution, government payments (food stamps, etc.), and food produced and consumed on the property.



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Americans are spending more money on food, and are spending it on food to prepare/eat at home roughly equal to the amount they spend eating away from home.

Source: see Tables 7, 10 and 13 at <http://www.ers.usda.gov/data-products/food-expenditures.aspx#26636>

## WHERE DOES YOUR FOOD DOLLAR GO?



On average, farmers get 15.8 cents from every dollar spent on food.

The rest of the dollar, 84.2 cents, goes to everyone who handles that food until it reaches your fork. Food in the U.S. changes hands, on average, half a dozen times before it is consumed.



Source: USDA, Economic Research Service

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To carry out the supply chain analysis, supply chain industries are clustered into 10 industry groups, based on their contributions to the different stages of food production or to key food supply chain services.

The following supply chain industry groupings were selected:

- Farm and agribusiness
- Food processing
- Food retailing
- Transportation
- Energy
- Packaging
- Finance and insurance
- Advertising
- Legal, accounting, bookkeeping
- Foodservices (restaurants and other establishments serving food away from home)

The figure in the slide summarizes the value-added components of the 2008 food dollar by industry group... Under the new input-output based food dollar series, a complete accounting of each supply chain industry group's contribution to the value of food purchases is measured and reported. This facilitates a more informative account of the roles and impacts of the different industry groups in the formation of food market values and the effects of the industries on producer prices of food commodities.

Source: Canning, Patrick. (2011). *A Revised and Expanded Food Dollar Series: A Better Understanding of Our Food Costs* (No. ERR-114). USDA Economic Research Service.

Retrieved from <http://www.ers.usda.gov/publications/err-economic-research-report/err114.aspx>

## FOOD LOSS

- The USDA estimates that **31%** of the 430 billion pounds of food available for human consumption in 2010 was not eaten – that translates to **\$161.6 billion dollars** worth of food.
- Losses were generally evenly distributed among the major food groups (grains, fruits, vegetables, dairy, meat, eggs, nuts, sugars, and fats and oils).



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Show the video trailer of *Dive!* (runtime 2:46) <http://divethefilm.com/trailer.aspx>

## FOOD IN YOUR HOUSEHOLD

- Make a map, diagram, or flow chart of your household food system or flow of food. Ask yourself:
  - Where does the household obtain food?
  - What's prepared in home? Out of home?
  - What's fresh? frozen? canned? processed?
  - What foods does your family especially like?
  - How well does your family follow MyPlate guidelines?
  - Are your family's food habits similar to U.S. trends?
  - What do you do with food wastes?





Photos by Treadwell

# FOOD SYSTEMS

As we go into this section, ask yourself....in what ways do I interact with, or influence, the components of our food system?

## WHAT IS A FOOD SYSTEM?

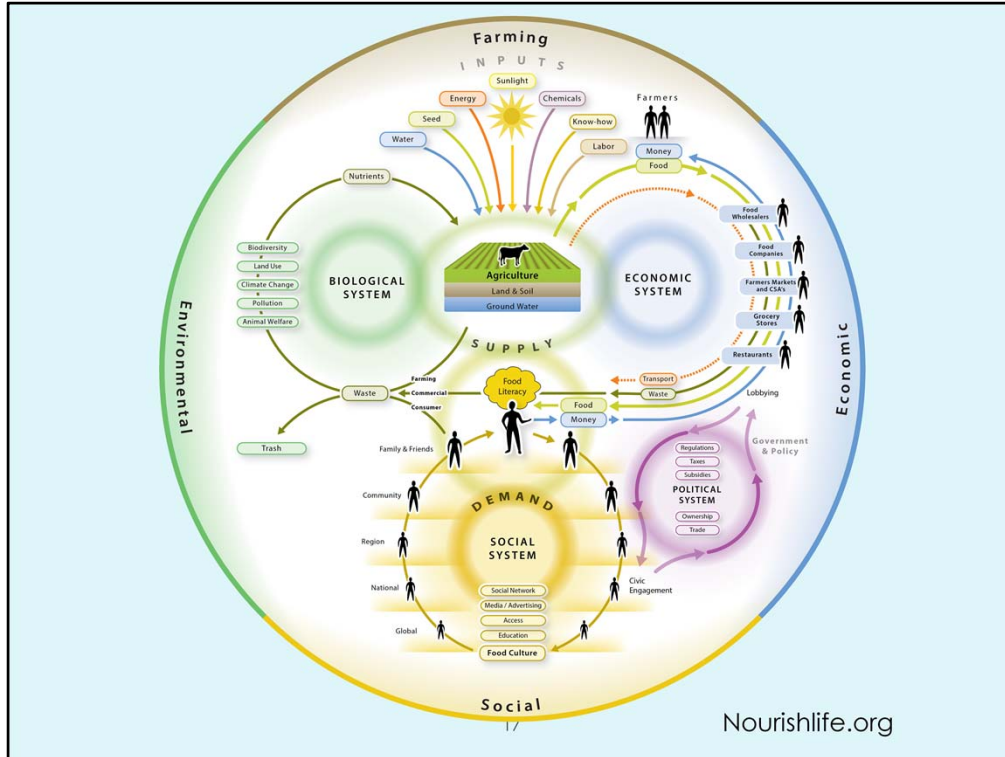
- A **food system** is the interconnected activities that get food from the farm to the plate, and includes the:
  - production,
  - processing,
  - distribution,
  - purchase,
  - preparation,
  - consumption, and
  - disposal of food.



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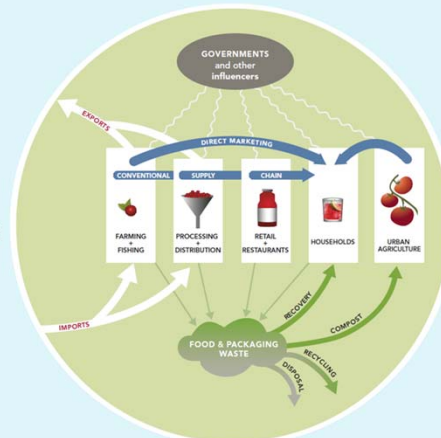


This image is a graphical representation of our food system, and highlights the interconnectedness of biological, economic, political and social systems that influence the flow of food from farm to table.

Free poster for educators on the Food System is available from Nourish at: <http://www.nourishlife.org/teach/food-system-tools/>

## SUSTAINABILITY AND SYSTEMS

- Sustainability is not a destination, but rather a practical approach to minimize negative consequences to our natural resources, our economy, and the people in our community and beyond.
- We practice sustainability on local, regional, and global scales.



Source: MetroVancouver.org Regional Food System Strategy



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Everyone talks about sustainability, but it is hard to define. We redefine what it means to be sustainable each time we learn something new about a system or practice. Each of us will have a very personal definition of sustainability based on our values, our experience, and what we know about a subject, so we must be respectful of each other's opinions of sustainability, and continue to have productive dialog so we can make progress together as communities.

Source: Metro Vancouver, *Regional Food System Strategy*. February 2011.

<http://www.metrovancouver.org/planning/development/AgricultureAndFood/Documents/RegionalFoodSystemStrategy.pdf>

## SUSTAINABLE AGRICULTURE

- Discuss *What is Sustainable Agriculture* reading from SARE



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SARE stands for Sustainable Agriculture Research and Education.

Article can be found at <http://www.sare.org/Learning-Center/SARE-Program-Materials/National-Program-Materials/What-is-Sustainable-Agriculture>

## WHY FOOD SYSTEMS MATTER

- Natural resource use
  - Fossil fuels and water are needed to produce, process, transport, prepare and dispose of food.
  - It's not just the food itself. Processing it, packaging it, manufacturing food containers, all use raw materials—including non-renewable ones such as phosphorous and aluminum. What we eat has a significant impact on the environment.

*...continued*



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- Awareness that the food Americans eat takes a considerable amount of fossil fuel energy to produce, process, transport, and dispose of
- Understanding that pollution of ground and surface water, caused by the overuse of chemical fertilizers and pesticides in agriculture adversely affects drinking water supplies

## WHY FOOD SYSTEMS MATTER

- Land use
  - Food production, distribution, and preparation utilizes a significant amount of land
  - Loss of traditional farmland and the high price of land in many areas reduces our capacity for food production near urban centers
  - Urban agriculture movement seeks to raise awareness of the capacity for small farms to provide quality farm products to urban areas
- Economy
  - City and regional planners can support integration of agriculture in urban communities to foster local economies

*...continued*



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- Recognition that food system activities take up a significant amount of urban and regional land
- Awareness that planners can play a role to help reduce the rising incidence of hunger on the one hand, and obesity on the other
- Understanding that farmland in metropolitan areas, and therefore the capacity to produce food for local and regional markets, is being lost at a strong pace
- Understanding that the food system represents an important part of community and regional economies

## WHY FOOD SYSTEMS MATTER

- Hunger and obesity
- Access to healthy foods
- Quality of life and community development



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- Awareness that access to healthy foods in low-income areas is an increasing problem for which urban agriculture can offer an important solution
- Recognition that many benefits emerge from stronger community and regional food systems

## FOOD SYSTEM STAKEHOLDERS

Stakeholders	Values	Interests/Focus
Global industrialized food system	<ul style="list-style-type: none"> <li>• Food as commodity</li> <li>• Profit maximization</li> <li>• Efficiency</li> <li>• Scientific/biotech</li> </ul>	<ul style="list-style-type: none"> <li>• Large scale production</li> <li>• Integration of agricultural inputs, processing, and retailing</li> <li>• Homogenization of food palates</li> <li>• Reduction of economic risk</li> </ul>
Consumers	Food as commodity	Safety, choice, convenience, health, inexpensive
Alternative food systems	<ul style="list-style-type: none"> <li>• Food as individual and community right</li> <li>• Economic viability</li> <li>• Environmental sustainability</li> <li>• Social justice</li> </ul>	<ul style="list-style-type: none"> <li>• Urban/local based</li> <li>• Reduce societal costs of hunger and food production</li> <li>• Improve health through food access</li> <li>• Self reliance and community empowerment</li> <li>• Connect producers and eaters</li> <li>• Structural change</li> </ul>

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Adapted from Marcia Caton Campbell, *Building a Common Table*

The next two slides summarize a few of the key stakeholders in the food system – their values/perspective of the food system are provided, as well as their goals. These tables can be a point of discussion – can the group think of examples in their own communities of the different stakeholders? Can they offer additional examples of stakeholder groups? How well do these stakeholders interact, and where is common ground for progress?

Campbell, M. C. (2004). Building a Common Table: The Role for Planning in Community Food Systems. *Journal of Planning Education and Research*, 23(4), 341–355.  
doi:10.1177/0739456X04264916. Available online at <http://jpe.sagepub.com/content/23/4/341.full.pdf+html>

## FOOD SYSTEM STAKEHOLDERS

Stakeholders	Values	Interests/Focus
Sustainable agriculture	<ul style="list-style-type: none"> <li>• Environmental sustainability</li> <li>• Biodiversity</li> <li>• Economic viability</li> </ul>	<ul style="list-style-type: none"> <li>• Rural focus</li> <li>• Direct marketing (producer/grower focus)</li> <li>• Environmental risk reduction</li> <li>• Place-based, seasonal foods</li> </ul>
Environmental justice and emergency food	<ul style="list-style-type: none"> <li>• Social welfare</li> <li>• Poverty alleviation</li> <li>• Equity and fairness</li> </ul>	<ul style="list-style-type: none"> <li>• Food relief for low-income households</li> <li>• Strengthening food assistance programs</li> <li>• Community empowerment</li> <li>• Equitable distribution of environmental risk</li> </ul>
Food citizens	<ul style="list-style-type: none"> <li>• Food as individual and community right</li> <li>• Environmental and economic sustainability</li> <li>• Participatory democracy</li> </ul>	<ul style="list-style-type: none"> <li>• Connect urban and rural</li> <li>• Build community food resources</li> <li>• Individual and public health</li> <li>• Place-based, seasonal foods</li> <li>• Direct connection of producers with eaters</li> </ul>

Adapted from Marcia Caton Campbell, *Building a Common Table*

Full article available at <http://jpe.sagepub.com/content/23/4/341.full.pdf+html>



## FOOD SYSTEMS & YOU

- What are your values?
- How are your values reflected in your relationship to the food system? Where do you shop or eat? What do you buy?
- Do any of the food system stakeholder types resonate with you?



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Now, consider your INDIVIDUAL role in the food system. What is important to you?

One source, of many, is *Healthy Food Systems: A Toolkit for Building Value Chains* at <http://www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5091499>

Note that “Non-GMO” refers to the product not containing, or being, a genetically modified organism. Some USDA definitions of GMO and related terms can be found at [http://www.usda.gov/wps/portal/usda/usdahome?contentid=biotech\\_glossary.html](http://www.usda.gov/wps/portal/usda/usdahome?contentid=biotech_glossary.html), and include:

**“Genetic engineering:** Manipulation of an organism's genes by introducing, eliminating or rearranging specific genes using the methods of modern molecular biology, particularly those techniques referred to as recombinant DNA techniques.

**Genetically engineered organism (GEO):** An organism produced through genetic engineering.

**Genetic modification:** The production of heritable improvements in plants or animals for specific uses, via either genetic engineering or other more traditional methods. Some countries other than the United States use this term to refer specifically to genetic engineering.

**Genetically modified organism (GMO):** An organism produced through genetic modification.

**Organic agriculture:** A concept and practice of agricultural production that focuses on production without the use of synthetic inputs and does not allow the use of transgenic organisms. USDA's National Organic Program has established a set of national standards for certified organic production which are available online. “

## FOOD SYSTEMS & THE ECONOMY

- Globalization of the food system
- Rural decline
- Economic impacts of local purchasing
- Local food purchasing policies



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**Globalization of the food system.** Increasingly, food comes from more distant sources, with serious consequences such as the loss of older local food system infrastructure, and threats to the survival of many U.S. farms. Although the U.S. rightfully prides itself as the breadbasket of the world, in 2006 for the first time, the value of food imported into the U.S. exceeded the value of food exported from the U.S. (USDA Foreign Agricultural Service, 2006). Globalization also leads to greater consumer ignorance about the sources of food. As people know less and less of where their food comes from, how it is produced and with what impacts on communities and the environment, preservation of land and the natural and built resources upon which local agriculture depends becomes more difficult.

**Rural decline.** Farms between 50-500 acres and 500-1,000 acres, the largest share of "working farms" and those that fall between local and commodity markets, decreased by about 7 and 11 percent respectively between 1997 and 2002, while those over 2,000 acres have gone up nearly 5 percent. This loss of "the middle" in farming threatens rural communities by making them more economically insecure and changes land stewardship practices handed down over generations. (Kirschenmann et al., no date).

**Economic impacts of local purchasing.** Robert Waldrop, a 2006 candidate for mayor of Oklahoma City, highlights the under-appreciated economic development possibilities of buying food directly from area farmers. Using USDA data and analyses, he identifies \$2.1 billion in economic activity in Central Oklahoma if Oklahoma County residents bought their eggs, poultry, meat, vegetables, flour, and milk and dairy products directly from farmers in the region.

**A local food purchasing policy.** In 2006, the Woodbury County (Iowa) Board of Supervisors adopted a "Local Food Purchase Policy," mandating the purchase of locally grown organic food for department events at which food is served. This action has the potential of providing \$281,000 in annual food purchases to a local farmer-owned cooperative.

## FOOD SYSTEMS & HEALTH

- Farm policy and health
- Obesity
- Obesity and the built environment



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**Farm policy and health.** Federal farm policy since the 1950s has encouraged the overproduction (and therefore the driving down of prices) of a few commodities such as corn and soybeans, all with serious implications for farmers, rural and urban communities, and the health of consumers. Support for fruits and vegetables, on the other hand, has been low (Nestle, 2002). Low commodity prices have led to the heavy use by the food industry of products such as high fructose corn syrup and hydrogenated vegetable oils, which are linked with obesity and related illnesses. Processed grocery foods, frozen foods and baked goods represented over 40 percent of supermarket sales in 2000, while produce claimed only 9 percent (Schoonover and Muller, 2006).

**Obesity.** Obesity and associated costs are a significant concern nationwide. While over 60 percent of Americans are overweight or obese, the effects of obesity are not borne equally across race and socio-economic strata, or even states and localities, thereby generating unequal burden. Similarly, many diet related diseases, such as heart disease, certain cancers, and diabetes are found to be more prevalent among minority populations. In 2009-2010, nearly 18 percent of children and adolescents, ages 6 to 19, were classified as obese (Centers for Disease Control and Prevention).

**Obesity and the built environment.** Land use and transportation policies have been implicated in the rise of obesity through both increased food consumption and reduced physical activity. Research suggests lower rates of obesity and overweight in neighborhoods where supermarkets offering more healthful food choices are present (Morland et al., 2006). This access is not even however: low income and minority areas contain fewer supermarkets on average; these areas also tend to have a higher density of convenience stores offering fewer healthful choices and higher prices, and fast food outlets (Morland et al., 2002). Because these communities experience lower vehicle ownership rates, problems of access are exacerbated.

## FOOD SYSTEMS & ECOLOGICAL SYSTEMS

- Energy consumption in the food system
- Water issues in agriculture
- Concentrated animal feeding operations (CAFOs)
- Loss of biodiversity
- Fisheries
- Food system wastes



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**Energy consumption in the food system.** At roughly eight calories of energy to produce one typical food calorie, today's food system is both energy-intensive and inefficient. According to Thomas Starrs (2005), growing, processing and delivering the food consumed by a family of four each year requires more than 930 gallons of gasoline or about the same amount used to fuel the family's cars.

**Water issues in agriculture.** Sedimentation and chemical pollutants resulting from agricultural practices continue to pose serious problems for fisheries, other wildlife, water-based recreation, and household water use. The Dead Zone in the Gulf of Mexico is one of the largest such examples of depletion of oxygen caused largely by farm runoffs. In 2005, it covered nearly 5,000 acres (National Aeronautics and Space Administration, 2004). In addition, U.S. agriculture is an especially prolific consumer of surface and ground water. For example, 38 percent of irrigation water in California and 66 percent in Texas are pumped from ground water (Pimental et al., 1997).

**Concentrated animal feeding operations (CAFOs).** CAFOs are agricultural facilities that house and feed a large number of animals in a confined area for 45 days or more during any 12-month period. Because more waste is generated in CAFOs than other less-dense animal farm facilities, the potential for greater air, water and land pollution increases in nearby areas. In 2003, the U.S. Environmental Protection Agency (EPA) and the USDA estimated that the nation's 238,000 animal feeding operations annually produced more than 500 million tons of manure; 15,500 CAFOs accounted for 300 million tons, or 40% of that total.\* Health threats from such operations include chronic and acute respiratory illnesses, injuries, infections, and nuisances such as flies, and odor (Bowman et al., 2000).

CAFOs are also implicated in spreading stronger strains of *E. coli* bacteria and environmental problems such as ground water contamination. An emerging and promising method to reduce odors and generate renewable energy from livestock manure in CAFOs is anaerobic digestion (Wilkie, 2005).

\* Source: National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitation Guidelines and Standards for Concentrated Animal Feeding Operations (CAFOs). Federal Register, Vol. 68, No. 29 (February 12, 2003), pp 7176, 7179. Available online at: <http://www.gpo.gov/fdsys/pkg/FR-2003-02-12/pdf/03-3074.pdf>

**Loss of biodiversity.** Across the country, native vegetation (forests, prairie, wetlands) which provides wildlife habitat and performs valuable ecosystem services such as flood control has been depleted or seriously threatened. In Illinois, for example, over 90 percent of all natural wetlands have been lost, the majority to agricultural production. According to noted ecologist Gary Nabhan, the U.S. has lost over 60 percent of all the heirloom crop varieties that were here at the time of Columbus's arrival to the New World; the other 40 percent remains below the radar of the food industry (Mangan, 2006).

**Fisheries.** In fisheries across North America, the needs of consumers and the long-term sustainability of fishery populations have fallen out of balance due to over-fishing or habitat loss or degradation. Fish populations of haddock, Atlantic cod, red snapper, Pacific herring, Pacific halibut, salmon, and king crab have seen significant declines (American Fisheries Society, no date).

**Food system wastes.** Wastes at each point of the food system use up local landfill capacity, or if incinerated, increase air pollution. One study showed that nearly 30 percent of all solid wastes are related to food consumption, with half of that being food packaging (University of Wisconsin Department of Urban and Regional Planning, 1997). Natural organic wastes may be a valuable input for agriculture if they can be separated from the waste stream. Such wastes can be fed to hogs, composted and reapplied to the land, or converted into renewable energy through anaerobic digesters. The London-based Institution of Mechanical Engineers reported in their January 2013 publication *Global Food: Waste Not, Want Not*, that as much as half of the food produced worldwide ends up being thrown away every year because shoppers are too choosy about the appearance of fruits and vegetables ([http://www.imeche.org/docs/default-source/reports/Global\\_Food\\_Report.pdf?sfvrsn=0](http://www.imeche.org/docs/default-source/reports/Global_Food_Report.pdf?sfvrsn=0)).

## FOOD SYSTEMS & SOCIAL EQUITY

- Hunger and food insecurity
- Emergency food assistance
- Supermarket initiative
- Vacant urban land for growing food
- Immigrants as food sector workers



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**Hunger and food insecurity.** Hunger and food insecurity are prevalent in the United States. The U.S. Department of Agriculture's Economic Research Service (2006) reports that in 2005, 11 percent of all U.S. households were "food insecure" because of a lack of sufficient food. Black (22.4 percent) and Hispanic (17.9 percent) households experienced food insecurity at far higher rates than the national average.

**Emergency food assistance.** In 2003-04, requests for emergency food assistance increased by about 14 percent in the 27 cities surveyed by the U.S. Conference of Mayors (2004). About 20 percent of the demand for food went unmet. Fifty-six percent of those requesting assistance represented families with children; 34 percent of adults requesting assistance were employed. Food Stamps: In 2003, 21.2 million individuals participated in the Food Stamp Program; however, this represented only 60 percent of people eligible to receive Food Stamp benefits. The average monthly food stamp benefit was \$83.77 per person (Food Research and Action Center, no date).

**Supermarket initiative.** Research documents lower availability of grocery supermarkets in low-income areas. In Rochester, NY, planners worked with neighborhood groups to bring a Tops Supermarket to the Upper Falls area, a neighborhood that had long gone without a grocery store. As a result of their negotiations, Tops agreed to renovate three other stores in the city, thereby increasing access to a variety of affordable and healthful food choices (Pothukuchi, 2005).

**Vacant urban land for growing food.** Inner cities have significant amounts of vacant land that, when used for vegetable gardening by low-income residents, produce multiple health, social, and economic benefits. For example, Detroit has over 60,000 publicly owned vacant

parcels, and a vibrant urban agriculture movement that can make productive use of this land, if made available by public agencies that control it (Kaufman and Bailkey, 2000). The Diggable City, a Portland State University graduate planning workshop project prepared for the City of Portland, Oregon, produced a land inventory containing specific sites of publicly owned properties to assess opportunities to expand community gardens and other forms of urban agriculture. This project has educated the community on the significance of urban land as a resource for food production and food security in the inner city (Portland State University, 2005).

***Immigrants as food sector workers.*** The food system's least desirable jobs are worked by immigrants in vegetable harvests, industrial slaughterhouses, and food processing plants. According to the U.S. Farm Bureau, immigrant labor may add up to \$9 billion to the nation's \$200 billion annual agricultural output (Keller, 2006). It is estimated that of the more than 4 million agricultural workers in the U.S., at least two-thirds are immigrants, 80 percent of whom are from Mexico. Because many are undocumented, they typically receive below-minimum wages, experience substandard living conditions, and make up a large portion of the food insecure.

## NATIVE/ETHNIC FOOD CULTURES

- Food issues faced by Native American communities
- Native food planning
- Ethnic cuisines
- Locally sourced ethnic foods



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***Food issues faced by Native American communities.*** Native American communities are hit particularly hard by the loss of or threats to ecologies, habitats, and native food ways that included subsistence agriculture, hunting, fishing, and gathering. As Native Americans were pushed into the dominant food system, the incidence of diet-related disease rose rapidly. Diabetes-related mortality among American Indians is over twice that of the general U.S. population (231%). In addition, nearly one-fourth of Native American households are food insecure because of inadequate resources with which to meet daily food needs, with one out of 12 individuals so food insecure as to be classified as hungry (Bell-Sheetter 2004).

***Native food planning.*** The Oneida Community Integrated Food Systems, established in 1994, started with a task force to address concerns related to poverty and health on the Oneida reservation. Through their assessment of food-related needs and assets, they developed actions to support goals related to increasing employment for Native Americans; educating community members about healthy foods and diets; and producing meats, fruits, and vegetables for both, food security and increased profits.

***Ethnic cuisines.*** Although Mexican, Italian, and Cantonese-Chinese cuisines are the most sought after dining-out ethnic choices, newer cuisines are gaining a foothold. According to an "Ethnic Cuisines" survey by the National Restaurant Association, Hunan, Mandarin and Szechwan variations of Chinese cuisines, German, French, Greek, Cajun/Creole, Japanese (including sushi), Asian Indian, Soul Food, Scandinavian, Caribbean and Spanish cuisines have been tried by more than 70 percent of the diners. Between 1981 and 1996, consumer awareness of Asian Indian cuisine jumped 74 percent (National Restaurant Association, 2000).



**Locally sourced ethnic foods.** Ethnic foods are part of the \$25 billion specialty food industry, whose sales jumped 16 percent between 2002 and 2004. Farmers across the country are finding profit in this trend. For example, some Pennsylvania and Maryland farmers are growing *n'goyo* and *gboma* — West African vegetables — Thai eggplants, Jamaican *callalou*, and halal lamb products desired by Muslim residents (Paley, 2005).

## “TWINKIE VS. CARROT”

- In this video (1:52), the sometimes controversial food author, Michael Pollan, offers some thought-provoking commentary on our food system.
- Which of these points do you agree/disagree with? Why?



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YouTube video (1:52 runtime) <http://www.youtube.com/watch?v=JH-Qv3f73x4>

Video produced by Nourish.

Twinkie photo from Wikipedia



Photos: FL Memory Book, USDA ARS

## EVOLUTION OF AGRICULTURE

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As we go into this section, ask yourself....how did we get here? What aspects of the food systems components: biological, economic, political and social changed? In what ways?

Photos: Florida Memory Book (men with watermelon), USDA ARS Image Library (man with poultry)

## EARLY AMERICAN FARMING

- Discuss pros and cons of the family farmer model that characterized American farming from the 1800's-1930's



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### **Pros**

- In general, reduced risk to human and environmental health; agricultural inputs not prevalent, most inputs were cycled within the farm (manure, legumes) until the 1940's (see cons)
- Regional food cultures prevalent, diversity of seed stock and crop genetics due to lack of available hybrids
- Social connection to food – significant family time and energy was required to produce and store
- Flavor and nutrition – no artificial flavors, colors, preservatives, no artificial sweeteners, fruits and vegetables were consumed quickly after harvesting unless canned

### **Cons**

- Agricultural inputs, especially pesticides that were available posed a high risk to worker safety-pesticides were toxic, application equipment was rudimentary, and application rates were likely higher than necessary
- Greater share of disposal income spent on food
- Majority of population engaged in farming
- Greater risk of shortages due to and susceptibility to weather events and pest damage and lack of cold storage
- Limited availability in stores – transportation infrastructure was limited and expensive to operate (rail, steamer) so typically consumed seasonal commodities
- Commodity yields were low due to limited ag inputs, lack of research and development

Images shown: Produce being loaded onto a cargo ship, Port Everglades, 1937 and McCarty pineapple packing house (floridamemory.com – copyright free images of historical Florida)

## FROM LOCAL TO GLOBAL

- As farming efficiency improved, fewer citizens were needed to operate the farm, and yields and net profit increased.



Photos: Treadwell



Photo of the Treadwell family hoeing cabbage in Florida.

## GLOBAL FOOD SYSTEM IN A MARKET ECONOMY

- With the industrial revolution, farming, fishing, and other food-production activities became large-scale enterprises, organized according to the principles of maximum productivity and maximum profit
- Today, transportation, communication, processing, and packaging technology allow for food trade on global scale



## GLOBAL FOOD SYSTEMS IN A MARKET ECONOMY

- Capital-intensive agriculture produces a greater supply—and surplus—than ever before
- Yet, significant challenges remain.



Sources: *Gale Encyclopedia of Food and Culture* and *Waste = Food* documentary



## ONE CHALLENGE: HOW TO FEED THE WORLD?



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Optional video on global food system *How to feed the world?* from Denis van Waerebeke (9:04 run time) Video link: <http://vimeo.com/8812686>

Optional documentary *Waste = Food* (49:24 run time)  
Video link: <http://topdocumentaryfilms.com/waste-food/>



## MORE CHALLENGES...

- Climate change
  - Food transportation and production – especially meat
- Degradation of natural resources
- Depletion of non-renewable resources
- Hunger and food insecurity
- Health issues: obesity, poor nutrition, and presence of toxins/chemicals
- Loss of genetic diversity
- Societal disconnect
- Economic localization/diversification



## WHAT ARE THE SOLUTIONS?

- The challenges global agriculture faces are daunting and overwhelming.
- Some view their own communities as having many of these same global problems, but on a smaller scale.
- Working together to make positive change on a smaller scale can have measurable benefits.

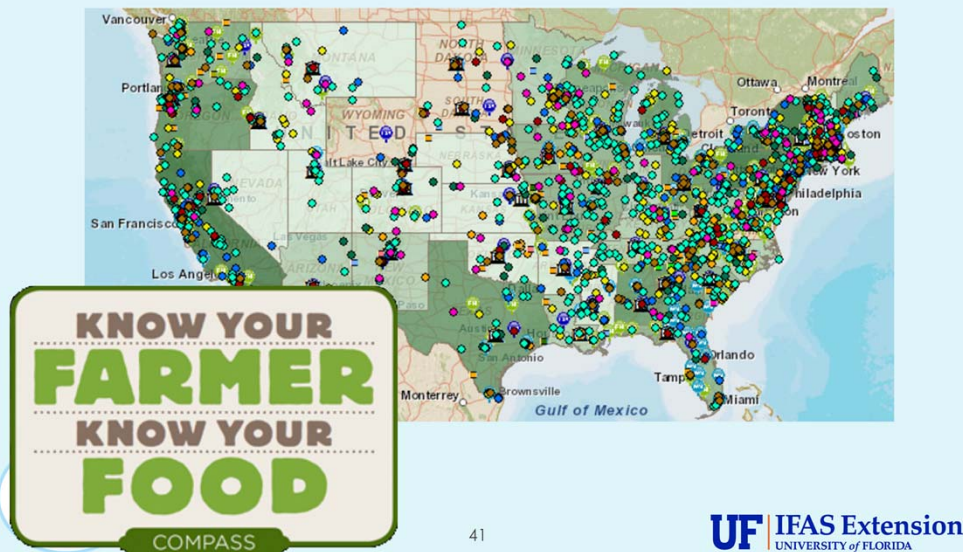


## IS LOCAL A SOLUTION?

- Experts can not agree on the definition of local, nor is the story of local food systems fully written. Only time will tell what impacts local actions will have on the food system-related challenges we face.
- Most citizens regard local food boundaries as their state line. Some value a more conservative approach, such as 100 miles.
- Many municipalities, state governments and our federal government have policies in place to support the establishment and maintenance of local food systems.



## USDA LOCAL FOOD COMPASS & KNOW YOUR FARMER, KNOW YOUR FOOD



More information on the map is found at

<http://www.usda.gov/maps/maps/kyfcompassmap.htm>

The map shows efforts supported by USDA and other federal partners as well as related information on local and regional food systems for the years 2009-2012.

Also, check out Florida MarketMaker (<http://fl.marketmaker.uiuc.edu/>) that links producers and consumers bringing a national initiative to Florida. The goal of the site is to build an easy-to-use, electronic infrastructure connecting the food supply chain and offers innovative tools to entrepreneurs, without any cost.

## REASONS FOR FOSTERING LOCAL FOOD SYSTEMS

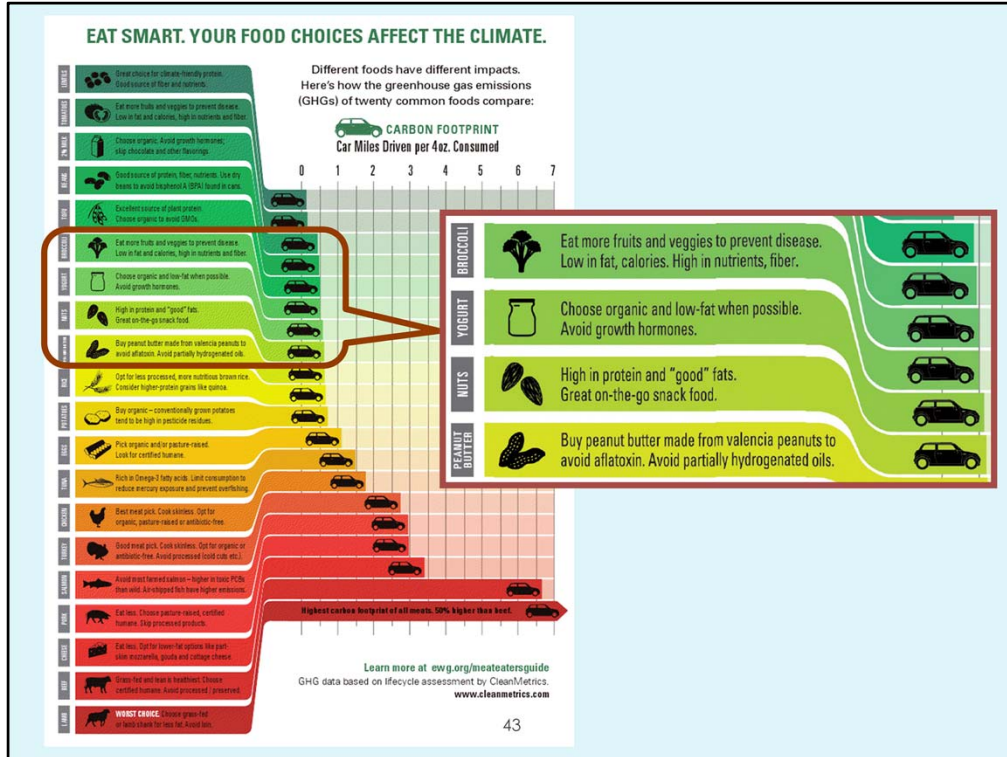
- Support local economy
- Fresher, tastier foods that have longer to ripen
- Less environmental impact
- You can make informed choices—just ask your farmer
- Creates community
- Keeps us in touch with the seasons
- Protects from bio-terrorism, promotes food safety
- More variety
- Supports responsible land use and open space



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Keep in mind that, depending on crop(s) and production system(s), eating/buying local can help support the local economy, but it doesn't mean that all of the income generated will remain in the local economy. For instance, where does the farmer buy the seed, soil, greenhouse equipment, fertilizer, chemicals, etc.? In most cases these items originate from outside the immediate area.



Larger image found at <http://www.earthfirst.net.au/eat-smart-how-your-food-choices-affect-the-climate.html>

The research is inconclusive on the issue of reduced carbon emissions as a result of local food systems.

## SOME LOCAL FOOD TERMS

- **Locavore** – one who eats food grown locally whenever possible
- **Food miles** – the distance food travels from where it is grown or raised to where it is ultimately purchased by the consumer
- **Food shed** – geographic area that supplies a population center with food; or area that theoretically could (think of a watershed)
- **100-mile diet** – eating foods grown within 100 miles
- **Slow food** – an organization and a movement that seeks to conserve traditional and regional culinary cuisine, and supports ecological farming practices



## SOME LOCAL ACTIVITIES AND INITIATIVES TO TRY



- Farmer's markets and farm stands
- Community supported agriculture and buying clubs
- Community and backyard gardening
- Restaurants, caterers, and retailers
- Community pledges, like Sarasota's 10% local food shift pledge



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Using Sarasota County as an example...

Of the approximately one billion dollars Sarasota County residents spend every year on food, most is spent on food shipped in from outside their community.

However, if they all committed to buying just 10% of their food directly from local farmers, a 2006 study showed that activity alone would generate at least \$80 million in additional farm income annually. This would create thousands of new green jobs and greatly stimulate their local economy.



## ORGANIC, FAIR TRADE, AND OTHER GREEN LABELS

- Not all labels are alike. Look for ecolabels supported by a independent third party accredited certifier, such as Smithsonian Bird Friendly, Fair Trade, EPA's ENERGY STAR and WaterSense labels, and the U.S. Green Building Council's LEED program.
- Integrating various green label programs into communities provides consistency and structure among diverse participants, and can serve as a clear roadmap to achieve shared goals.



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Discuss these articles from *Audubon* magazine and the National Extension website (eXtension.org):

USDA's National Organic Agriculture Program:

<http://www.extension.org/pages/18655/what-is-organic-farming>

<http://archive.audubonmagazine.org/organics/organics1103.html>

Certifications:

<http://archive.audubonmagazine.org/audubonliving/audubonliving1103.html>

Green Communities:

<http://www.extension.org/pages/61543/evaluating-green-communities:-top-eleven-questions-to-ask>

## WHERE DO WE GO FROM HERE?

- Nature Conservancy video (1:45)
  - <http://www.youtube.com/watch?v=CaD4LYqae4I>



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Nature Conservancy video *Sustainable Agriculture: Where Do We Go From Here?* (run time 1:45)

Video link: <http://www.youtube.com/watch?v=CaD4LYqae4I>



## FOOD IN FLORIDA

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As we go into this section, ask yourself....why does food matter to you?

## WHAT IS FLORIDA'S FOOD SYSTEM?

- Total population: 19,317,568
- Approx. total food budget: \$7.73 billion (\$4k/person/year)
- Visitors (lots of guests to feed): 87.3 million in 2011
- Vegetable annual earnings: \$1.9 billion (2nd in USA - 9.8%)
- Florida ranks first in USA for:
  - oranges (62%)
  - watermelons (23%)
  - sweet corn (25%)
  - grapefruit (72%)
  - cucumbers (25%)
  - sugarcane (52%)
  - snap beans (44%)
  - squash (28%)



Source: 2009-2012 data from Ag Census and FDACS

## WHAT IS FLORIDA'S FOOD SYSTEM?

- Florida's farmers are highly efficient:
  - eight major vegetable crops (on the previous slide)
  - plus potatoes, berries, and watermelons
  - harvested from a total of 223,500 acres
- Florida dairies produced 248 million gals of milk or ~13 gal/person/year.
- 11th in beef cow production
- 7th in agricultural exports - \$3.1 billion
  - Top Importers: Canada, Netherlands, Bahamas, Dominican Republic, Japan



Source: 2009-2012 data from Ag Census and FDACS

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## FLORIDA AG FACTS (2010)

- 47,500 commercial farms
- 9.25 million acres used for commercial farming



Photos: UF/IFAS



Sources: Florida Department of Agriculture and Consumer Services;  
Farmland Information Center

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Sources: *Florida Agriculture by the Numbers 2012*, <http://www.florida-agriculture.com/brochures/P-01304.pdf>

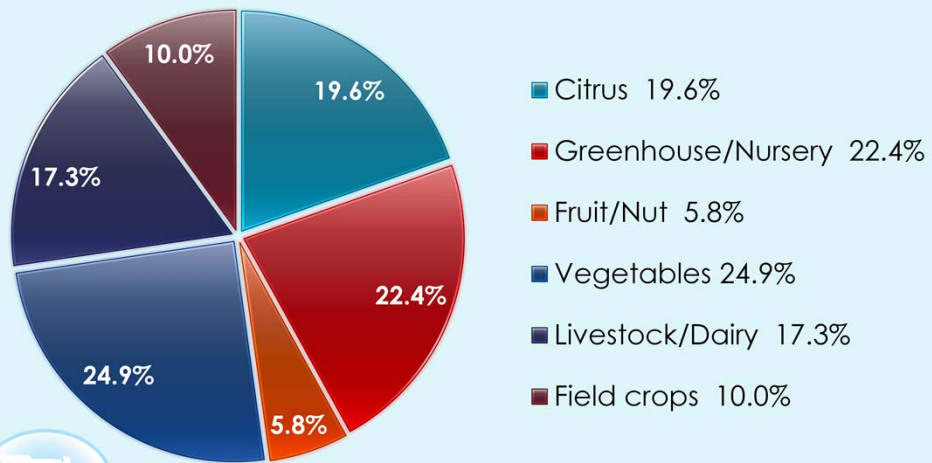
Farmland Information Center, Florida Statistics Sheet:  
[http://www.farmlandinfo.org/agricultural\\_statistics/index.cfm?function=statistics\\_view&stateID=FL](http://www.farmlandinfo.org/agricultural_statistics/index.cfm?function=statistics_view&stateID=FL)

## FARMING LEGACY IS UNCERTAIN

- 60% of farm operators are 55 and older
- Who will take us into the future?
- University programs for young farmers
- Florida Farm Bureau's Young Farmers and Ranchers programs



## % TOTAL BY SECTOR OF AGRICULTURAL EARNINGS



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Florida Ag statistics



**Four Seasons of FRESHNESS**  
 Florida Produce Availability *at a glance*

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

Produce Item	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
AVOCADOS												
BLUEBERRIES												
CABBAGE												
CARAMBOLA												
CARROTS												
CAULIFLOWER												
CELERY												
CHINESE CABBAGE												
CUCUMBERS												
EGGPLANT												
ENDIVE/ESCAROLE												
GRAPEFRUIT												
GREEN BEANS												
GREEN PEPPERS												
LIMES												
MANGOES												
ORANGES												
PARSLEY												
RADISHES												
SQUASH												
STRAWBERRIES												
SWEET CORN												
TANGERINES												
TOMATOES												

www.Florida-Agriculture.com

Florida Department of Agriculture and Consumer Services

**FLORIDA FRESH**

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A sampling of when many fruits and vegetables are available “fresh” in Florida.

Printable version available at: <http://www.florida-agriculture.com/brochures/P-01332.pdf>

## IN CONCLUSION...

- Why **does** food matter to you?



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Other resources:

USDA. *Regional Food Hub Resource Guide*

<http://www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5097957>

The Government Office for Science, London. *The Future of Food and Farming: Challenges and choices for global sustainability*. Final Project Report.

<http://www.bis.gov.uk/assets/foresight/docs/food-and-farming/11-546-future-of-food-and-farming-report.pdf>

An interesting article: "The Future of Food" <http://www.rollins.edu/news/2012/12/the-future-of-food.html>