



Agriculture in a Global and
Consumer-Driven
World

November 8, 2013

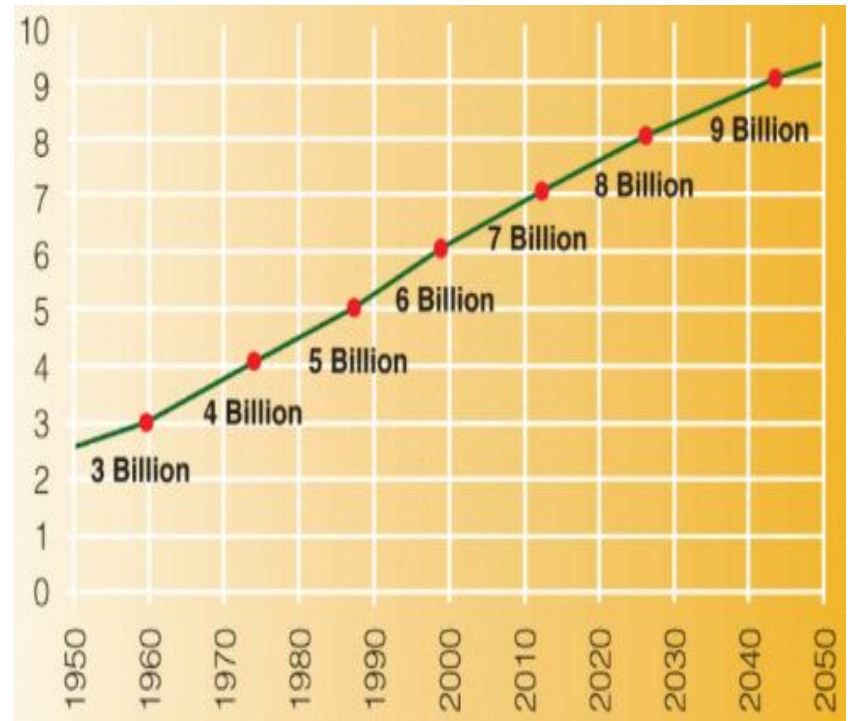
CONSUMER TRENDS SESSION

**The influence of consumer-driven market trends on
production agricultural practices**

- Christine Walsh

GLOBAL PROJECTIONS

- **World population will grow exponentially – 9 billion by 2045**
- **Economies in emerging countries will greatly improve**
- **Animal-based diets will increase with growing prosperity**
- **Debate between feeding hungry with plant or animal based foods**



CONSUMER TRENDS

Trends Watchers	Industry Leaders Magazine	Forbes	Hartmann Group
Consumers as Brand Owners	Going Green	The Engaged Consumer	Political Unrest
Emerging Markets	Brand Exposure	Back to Basics – Simpler, Natural	Enthusiastic Consumer
Mobile Technology	Technology	Health Care Products	Going Global
Eco-Products	The New Consumer	Smartphone	Mobile Technology
Heightened Level of Transparency			

CONSUMER TRENDS

Trends Watchers	Industry Leaders Magazine	Forbes	Hartmann Group
Consumers as Brand Owners	Going Green	The Engaged Consumer	Political Unrest
Emerging Markets	Brand Exposure	Back to Basics – Simpler, Natural	Enthusiastic Consumer
Mobile Technology	Technology	Health Care Products	Going Global
Eco-Products	The New Consumer	Smartphone	Mobile Technology
Heightened Level of Transparency			

CONSUMER TRENDS

Trends Watchers	Industry Leaders Magazine	Forbes	Hartmann Group
Consumers as Brand Owners	Going Green	The Engaged Consumer	Political Unrest
Emerging Markets	Brand Exposure	Back to Basics – Simpler, Natural	Enthusiastic Consumer
Mobile Technology	Technology	Health Care Products	Going Global
Eco-Products	The New Consumer	Smartphone	Mobile Technology
Heightened Level of Transparency			

CONSUMER TRENDS

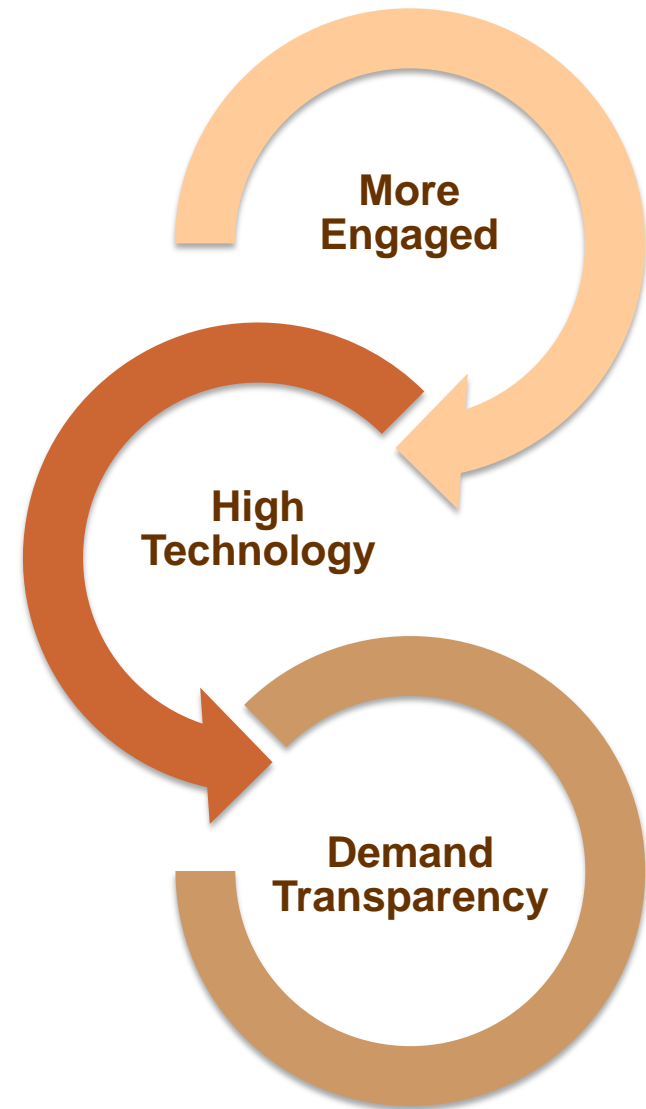
Trends Watchers	Industry Leaders Magazine	Forbes	Hartmann Group
Consumers as Brand Owners	Going Green	The Engaged Consumer	Political Unrest
Emerging Markets	Brand Exposure	Back to Basics – Simpler, Natural	Enthusiastic Consumer
Mobile Technology	Technology	Health Care Products	Going Global
Eco-Products	The New Consumer	Smartphone	Mobile Technology
Heightened Level of Transparency			

CONSUMER TRENDS



MORE

- Informed
- Resourceful
- Demanding



More Informed -- NuVal



[About NuVal LLC](#) [News Room](#) [Partners](#) [Contact Us](#)

- How it Works
- Shop with NuVal®
- Scores
- Where to Find NuVal®
- The Science
- Expert Answers
- NuVal® Community

NEW & IMPROVED

What Foods Really are "New and Improved"?

Check Out Our Slideshow to Find Out!

[CLICK HERE TO VIEW SLIDESHOW](#)

1 2 3 4

Stay Connected

Sign up for our Email Newsletter

Click one of the icons below to follow NuVal®'s nutritional insights in a way that matches your digital lifestyle.

News and Updates

- 10/07/2013 Brookshire Grocery Company's Commitment to Good Nutrition
Brookshire Grocery Company's Commitment to Good Nutrition
[> read more](#)
- 09/18/2013 Hy-Vee, Five Other Retailers Extend Contracts for NuVal® Nutritional Scoring System
Hy-Vee, Five Other Retailers Extend Contracts for NuVal® Nutritional Scoring System
[> read more](#)
- 08/01/2013 NuVal® Nutritional Scoring System Serves up Healthy School Lunch Ideas
Summer's almost over, and soon everyone will get into their fall routine. This means getting kids to end from school

Latest Blog Posts:

Kelly Radi: The Joys of October ... [> visit our blog](#)

NuVal® Videos

Find out how **teens** are using NuVal to eat for better nutrition!

Nutrition by Numbers

See how your nutrition know-how stacks up. Play our Nutrition by the Numbers game

NuVal® Trade Up Tips

Trade Up

More Engaged -- ShopWell

Sign In Sign Up

✓ Like 19k +1 66 Follow

 ShopWell

Enter your search term here... (e.g. cereal) 

Browse Foods Your Lists & Trade Ups

Why Use ShopWell Blog About iPhone App

Your Personal Nutrition Expert

ShopWell helps you eat healthier.

See how well foods match your needs.

Achieve your health goals.

56 49 95

milk Pop Cereal

Free! Get Started »

The screenshot shows the ShopWell website interface. At the top right, there are links for 'Sign In' and 'Sign Up', and social media engagement buttons for 'Like' (19k), '+1' (66), and 'Follow'. The ShopWell logo is on the left. A search bar is in the center with the placeholder text 'Enter your search term here... (e.g. cereal)'. To the right of the search bar are links for 'Browse Foods' and 'Your Lists & Trade Ups'. Below the search bar are links for 'Why Use ShopWell', 'Blog', 'About', and 'iPhone App'. The main banner features the text 'Your Personal Nutrition Expert' and 'ShopWell helps you eat healthier.' Below this, a diagram illustrates the app's functionality: a smartphone on the left shows a food item with a score of 56; a carton of milk is next to it; a box of Popcorn has a score of 49; a large bag of Cereal has a score of 95. Arrows connect these items to a user profile icon on the right, which is accompanied by the text 'Achieve your health goals.' At the bottom right, there is a prominent orange button that says 'Free! Get Started »'.

Demand Traceability – Park City

The screenshot displays the Park City Group website. At the top right, there is a search bar with the text "Search ParkCityGroup.con" and a magnifying glass icon, along with "Login | Sitemap" links. The Park City Group logo is on the left, featuring a red arch and the text "PARK CITY GROUP" with the tagline "Sell More - Stock Less - See Everything". A navigation menu includes "Solutions", "Business Suite", "Services", "Information", and "Company". The main banner features a background image of a food processing facility with a worker in a white coat and hairnet. Overlaid on this is a red hexagonal icon with a white square inside, followed by the text "[REPOSITRAK]" and "Get compliant according to the the latest food safety regulations". A "[Learn More]" link is positioned to the right. Below the banner, a horizontal list of services includes "CDSO", "Scan Based Trading", "Food Safety", "Vendor Managed Inventory", "Fresh Market Manager", "Strategic Analysis", "Operational Insights", "ActionManager", "Distribution Center Procurement", "Enterprise Supply Chain Planning", "Store Level Replenishment", and "Store Ordering". A secondary row of icons and text lists "Improve Financial Performance", "Optimize Inventory", "Improve Forecasting", and "Enhance Consumer Experience". A dark banner below this contains the text "Will The Food Safety Modernization Act Adequately Protect This Nation's Food Supply?". The footer is divided into three columns: "White Papers" with links for "The Power of SBT" and "Shrinking Shrink"; "Latest News" with a link for "Park City Group Welcomes Retail Industry Veteran Gary Rocheleau to"; and "Shining A Light On The Retail Demand Chain" with a link for "According to a study by Retail Feedback Group".

Demand Traceability – HarvestMark

HarvestMark 

SOLUTIONS

LATEST NEWS

RESOURCES

ABOUT US

Trace your food back to the source.



Enter Your HarvestMark Code

Trace

[See an example](#)

Thinking About Food Traceability?

Over 400 leading food companies rely on HarvestMark.

[Learn about our food traceability solutions.](#)



Hello Shoppers!

Get inside information about your food and give feedback. [Learn more](#), [download our free app](#), or [request traceable food near you](#).



Optimize Freshness & Quality

Leading food companies use HarvestMark Insights for proactive visibility throughout their supply chain. Earn greater customer loyalty with freshness and quality.



[See how it works »](#)

TRIP MISSION = REASONS TO SHOP

TRIP MISSION SHIFTED IN RESPONSE TO THE ECONOMIC SLOWDOWN

Quick Trip is most Valued Trip Mission followed by Pantry Stock Up...

Average Spend x Number of Trips and CPG \$

Trip Type	# of Items	All Outlet Average \$ Spend	Mindset	% of All Outlet Trips	% of All Outlet CPG\$
Quick Trip	1 – 5	< \$40	Need it Now!	56%	24%
Special Purpose	2 – 10	\$20 - \$50	Buying for a Special Event	16%	18%
Routine Fill-In	5 – 15	\$30 - \$50	Fill-In for High Use Items	15%	19%
Pantry Stock-Up	15+	> \$50	Prepare for Coming Week	13%	39%

Symphony IRI Trip Typology: 52 Weeks Ended 08/21/12

TRIP MISSION by CHANNEL

CLUB AND GROCERY LEAD IN STOCK UP TRIPS...

DRUG AND DOLLAR LEAD IN IMMEDIATE CONSUMABLES

Every Channel is considered a place for Routine Fill-up purchases

Trip Mission	Grocery	Dollar Store	Club	Mass / SC	Drug
Quick Trip Immediate Consumption	11%	21%	8%	7%	24%
Special Purpose	12%	8%	8%	14%	6%
Routine Fill-in	25%	23%	23%	21%	21%
Stock-Up	47%	23%	50%	42%	29%

Symphony IRI Trip Typology: 52 Weeks Ended 08/21/12

Retailers Are Responding...Lunds



Retailers Are Responding...Lunds



Retailers Are Responding...Walgreens



Retailers Are Responding...Walgreens



7-Eleven – Not Just Slurpees Anymore!



7-Eleven – Updated Food Service



7-Eleven – Expanded Freshness



CONSUMERS ARE

SMARTER

MORE INFORMED

Searching for Answers

DEMAND the TRUTH



Questions...

THANK YOU

CHAPTER 2

Profiling Food Consumption in America



American consumers today have come to expect a great deal more of the food system.... There is no doubt that it delivers—more nutritious food with wider variety; improved safety, with less environmental impacts; and greater convenience than at any time in the Nation's history.

Americans at the beginning of the 21st century are consuming more food and several hundred more calories per person per day than did their counterparts in the late 1950s (when per capita calorie consumption was at the lowest level in the last century), or even in the 1970s. The aggregate food supply in 2000 provided 3,800 calories per person per day, 500 calories above the 1970 level and 800 calories above the record low in 1957 and 1958 (fig. 2-1).

Of that 3,800 calories, USDA's Economic Research Service (ERS) estimates that roughly 1,100 calories were lost to spoilage, plate waste, and cooking and other losses, putting dietary intake of calories in 2000 at just under 2,700 calories per person per day. ERS data suggest that average daily calorie intake increased by 24.5 percent, or about 530 calories, between 1970 and 2000. Of that 24.5-percent increase, grains (mainly refined grain products) contributed 9.5 percentage points; added fats and oils, 9.0 percentage points; added sugars, 4.7 percentage points; fruits and vegetables together, 1.5 percentage points; meats and nuts together, 1 percentage point; and dairy products and eggs together, -1.5 percentage point.

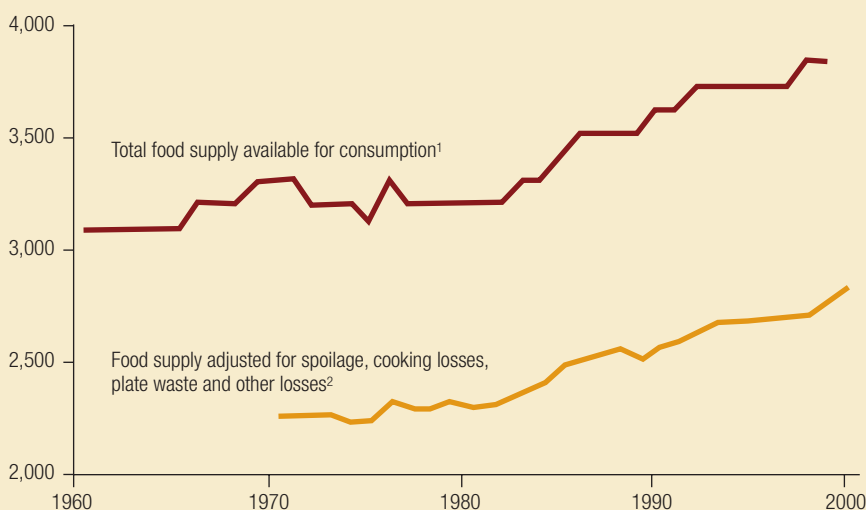
Some of the observed increase in caloric intake may be associated with the increase in eating out. Data from USDA's food intake surveys show that the food-away-from-home sector provided 32 percent of total food energy consumption in 1994-96, up from 18 percent in 1977-78. The data also suggest that, when eating out, people either eat more or eat higher calorie foods—or both—and that this tendency appears to be increasing.

According to the National Center for Health Statistics, an astounding 62 percent of adult Americans were overweight in 2000, up from 46 percent in 1980. Twenty-seven percent of adults were so far overweight that they were classified as obese (at least 30 pounds above their healthy weight)—twice the percentage classified as such in 1960. Alarming, an upward trend in obesity is also occurring for U.S. children.

Although multiple factors can account for weight gain, the basic cause is an excess of energy intake over energy expenditure. In general, Americans' activity levels have not kept pace with their increase in calorie consumption. Many people apparently are oblivious to the number of calories they consume. Calories consistently rank toward the bottom of consumer nutrition concerns, according to the annual national probability surveys "Trends—Consumer Attitudes and the Supermarket" conducted by the Food Marketing Institute. Of respondents in the 2002 survey who said they were either "very concerned" or "somewhat concerned" about the nutritional content of what they eat, only 13 percent cited calories as one of their concerns. That compared with fat (49 percent), sugar (18 percent), salt (17 percent), and cholesterol (16 percent).

A variety of factors are responsible for the changes in U.S. consumption patterns in the last 50 years, including changes in relative prices, increases in real (adjusted for inflation) disposable income, and more food assistance for the poor. New products, particularly more convenient ones, also contribute to shifts in consumption, along with more imports, growth in the away-from-home

Figure 2-1
Calories from the U.S. Per Capita Food Supply, Adjusted for Losses, Increased 19 Percent Between 1983 and 2000



¹ Rounded to the nearest hundred.

² Not calculated for years before 1970.

Source: USDA's Center for Nutrition Policy and Promotion; USDA's Economic Research Service.

food market, expanded advertising programs, and increases in nutrient-enrichment standards and food fortification. Sociodemographic trends also driving changes in food choices include smaller households, more two-earner households, more single-parent households, a taller population, an aging population, and increased ethnic diversity.

ERS estimates per capita food and nutrient supplies based on food disappearance data. These data are used as a proxy to estimate human consumption. The data reported in tables 2-1 through 2-6 are unadjusted for spoilage and waste, so they may overstate what is actually eaten. The data are used more appropriately as indicators of trends in consumption over time.

Meat Consumption at Record High

Now more than ever, America is a Nation of meat eaters. In 2000, total meat consumption (red meat, poultry, and fish) reached 195 pounds (boneless, trimmed-weight equivalent) per person, 57 pounds above average annual consumption in

the 1950s (table 2-1). Each American consumed an average of 7 pounds more red meat than in the 1950s, 46 pounds more poultry, and 4 pounds more fish and shellfish. Rising consumer incomes, especially with the increase in two-income households, and meat prices in the 1990s that were often at 50-year lows, when adjusted for inflation, explain much of the increase in meat consumption. In addition, the meat industry has provided scores of new brand-name, value-added products processed for consumers' convenience, as well as a host of products for foodservice operators.

Nutritional concern about fat and cholesterol has encouraged the production of leaner animals (beginning in the late 1950s), the closer trimming of outside fat on retail cuts of meat (beginning in 1986), the marketing of a host of lower fat ground and processed meat products, and consumer substitution of poultry for red meats since the late 1970s—significantly lowering the meat, poultry, and fish group's contribution to total fat and saturated fat in the food supply. Despite near record-high per capita consumption of total meat in 2000, the proportion

The food system has entered a consumer-driven era and diversity within our farm sector is enormous.

Table 2-1

In 2000, Americans consumed an average 57 pounds more meat than they did annually in the 1950s, and a third fewer eggs

<i>Annual averages</i>						
Item	1950-59	1960-69	1970-79	1980-89	1990-99	2000
<i>Pounds per capita, boneless-trimmed weight</i>						
Total meats	138.2	161.7	177.2	182.2	189.0	195.2
Red meats	106.7	122.34	129.5	121.8	112.4	113.5
Beef	52.8	69.2	80.9	71.7	63.2	64.4
Pork	45.4	46.9	45.0	47.7	47.6	47.7
Veal and lamb	8.5	6.2	3.5	2.4	1.7	1.4
Poultry	20.5	28.7	35.2	46.2	61.9	66.5
Chicken	16.4	22.7	28.4	36.3	47.9	52.9
Turkey	4.1	6.0	6.8	9.9	13.9	13.6
Fish and shellfish	10.9	10.7	12.5	14.2	14.7	15.2
<i>Number per capita</i>						
Eggs	374	320	285	257	236	250

Note: Totals may not add due to rounding.
Source: USDA's Economic Research Service.

Table 2-2**Americans are drinking less milk, eating more cheese**

Item	Unit	Per capita annual averages					
		1950-59	1960-69	1970-79	1980-89	1990-99	2000
All dairy products ¹	lb	703	619	548	573	571	593
Cheese ²	lb	7.7	9.5	14.4	21.5	26.7	29.8
Cottage cheese	lb	3.9	4.6	4.9	4.1	2.9	2.6
Frozen dairy products	lb	23.0	27.5	27.8	27.4	28.8	27.8
Ice cream	lb	18.1	18.3	17.7	17.7	16.0	16.5
Lowfat ice cream	lb	2.7	6.2	7.6	7.2	7.5	7.3
Sherbet	lb	1.3	1.5	1.5	1.3	1.3	1.2
Other (including frozen yogurt)	lb	1.0	1.5	1.0	1.2	4.0	3.1
Nonfat dry milk	lb	4.9	5.9	4.1	2.4	3.1	3.4
Dry whey	lb	.2	.6	2.1	3.2	3.5	3.4
Condensed and evaporated milks	lb	21.6	15.7	9.4	7.5	7.3	5.8
Cream products	1/2 pt	18.1	13.3	10.1	12.8	15.7	18.6
Yogurt	1/2 pt	0.2	0.7	3.2	6.5	8.5	9.9
Beverage milk	gal	36.4	32.6	29.8	26.5	24.3	22.6
Whole	gal	33.5	28.8	21.7	14.3	9.1	8.1
Lower fat	gal	2.9	3.7	8.1	12.2	15.3	14.5

Note: Totals may not add due to rounding.

¹Milk-equivalent, milkfat basis; includes butter. Individual items are on a product-weight basis.

²Natural equivalent of cheese and cheese products; excludes full-skim American, cottage, pot, and baker's cheese. Source: USDA's Economic Research Service.



of fat in the U.S. food supply from meat, poultry, and fish declined from 33 percent in the 1950s to 24 percent in 2000. Similarly, the proportion of saturated fat contributed by meat, poultry, and fish fell from 33 percent in the 1950s to 26 percent in 2000.

Eating Out Cuts Milk, Boosts Cheese Consumption...

In 2000, Americans drank an average of 38 percent less milk and ate nearly four times as much cheese (excluding cottage, pot, and baker's cheese) as in the 1950s (table 2-2).

Consumption of beverage milk declined from an annual average of 36 gallons per person in the 1950s to less than 23 gallons in 2000. Consumption of soft drinks, fruit drinks and ades, and flavored teas may be displacing beverage milk in the diet. Big increases in eating away from home, especially at fast-food places, and

in consumption of salty snack foods favored soft drink consumption.

The beverage milk trend is toward lower fat milk. Whole milk represented 92 percent of all beverage milk (plain, flavored, and buttermilk) in the 1950s, but its share dropped to 36 percent in 2000.

Average annual consumption of cheese (excluding full-skim American and cottage, pot, and baker's cheeses) increased 287 percent between the 1950s and 2000, from 7.7 pounds per person to 29.8 pounds. Lifestyles that emphasize convenience foods were probably major forces behind the higher consumption. In fact, more than half of our cheese now comes in commercially manufactured and prepared foods (including food service), such as pizza, tacos, nachos, salad bars, fast-food sandwiches, bagel spreads, sauces for baked potatoes and other vegetables, and packaged snack foods. Advertising and new products—such as reduced-fat cheeses and resealable bags of shredded

cheeses, including cheese blends tailored for use in Italian and Mexican recipes—also boosted consumption.

...and Swells Use of Salad and Cooking Oils and Shortening

Americans' mid-1990s push to cut dietary fat is apparent in the recent per capita food supply data, which show a modest (8 percent) decline in the use of added fats and oils between 1993 and 1997, from 69 pounds (fat-content basis) per person to just under 64 pounds. As a result of consumer concerns about fat and mandatory nutrition labeling beginning in July 1994, food processors introduced over 5,400 lower fat versions of foods in U.S. supermarkets in 1995–97, according to *New Product News*, a trade magazine based in Albuquerque, NM.

But the decline in average consumption of added fats was short lived. Between 1997 and 2000, per capita consumption of added fats jumped 17 percent, from 64 pounds per person to 74.5 pounds. Fat plays an important role in enhancing the flavor of foods. Many consumers found the taste of the new low fat (3 grams of fat or less per serving) and fat-free versions of foods unacceptable. Accordingly,

many companies reformulated their low-fat and fat-free products in the late 1990s, adding some fat to improve taste. Some consumers, who rejected the low-fat and fat-free versions, have accepted reduced-fat products (1/3 less fat than full-fat versions). Many other consumers have resumed eating full-fat versions. According to a 2000 Roper Reports survey of a nationally representative sample of 2,000 Americans 18 or older, the percentage of Americans who say they are eating “pretty much whatever they want” was at an all-time high of 70 percent in 2000, up from 58 percent in 1997.

Although Americans apparently have relaxed their efforts to curb consumption of added fats, they are choosing to eat healthier fats. Olive oil and canola oil—high in heart-healthy monounsaturated fats that lower blood levels of bad cholesterol but not good cholesterol—captured 23 percent of the salad and cooking oil market in 2000, up from less than 4 percent in 1985.

Average use of added fats and oils in 2000 was 67 percent above annual average use in the 1950s (table 2-3). Added fats include those used directly by consumers, such as butter on bread, as well as shortenings and oils used in commer-

cially prepared cookies, pastries, and fried foods. All fats naturally present in foods, such as in milk and meat, are excluded.

Americans in 2000 consumed, on average, three-and-three-fifths times more salad and cooking oil than they did annually in the 1950s, and more than twice as much shortening. Average use of table spreads declined by 25 percent during the same period.

In the 1950s, the fats and oils group (composed of added fats and oils) contributed the most fat to the food supply (41 percent), followed by the meat, poultry, and fish group (32 percent). By 1999, the fats and oils group's contribution to total fat had jumped 12 percentage points to 53 percent, probably due to the higher consumption of fried foods in foodservice outlets, the increase in consumption of high-fat snack foods, and the increased use of salad dressings. Margarine, salad dressings and mayonnaise, cakes and other sweet baked goods, and oils continue to appear in the top 10 foods for fat contribution, according to recent USDA food intake surveys, which indicates the ongoing prevalence of discretionary fats in Americans' diets.

Table 2-3

Average consumption of added fats increased by two-thirds between 1950-59 and 2000

Item	Annual averages					
	1950-59	1960-69	1970-79	1980-89	1990-99	2000
	Pounds per capita ¹					
Total added fats and oils	44.6	47.8	53.4	60.8	65.5	74.5
Salad and cooking oils ²	9.8	13.9	20.2	25.0	28.2	35.2
Baking and frying fats ³	21.4	20.7	20.5	23.6	26.2	29.0
Shortening	10.9	14.6	17.4	20.5	22.7	23.1
Lard and beef tallow ⁴	10.5	6.1	3.5	3.1	4.0	6.0
Table spreads	17.0	16.5	15.9	15.3	14.0	12.8
Butter	9.0	6.6	4.7	4.6	4.4	4.6
Margarine	8.0	9.9	11.2	10.7	9.6	8.2

¹Total added fats and oils is on a fat-content basis. Individual items are on a product-weight basis.

²Includes a small amount of specialty fats used mainly in confectionery products and nondairy creamers.

³Total may not add due to rounding.

⁴Direct use; excludes use in margarine or shortening.

Source: USDA's Economic Research Service.

Table 2-4

Per capita consumption of fruit and vegetables increased by one-fifth between 1970–79 and 2000

Item	Annual averages			
	1970–79	1980–89	1990–99	2000
	<i>Pounds per capita, fresh-weight equivalent</i>			
Total fruit and vegetables	587.5	622.1	688.3	707.7
Total fruit	248.7	269.0	280.1	279.4
Fresh fruit	99.4	113.1	123.7	126.8
Citrus	27.2	24.2	23.7	23.4
Noncitrus	72.2	88.9	100.0	103.3
Processed fruit	149.3	155.9	156.5	152.7
Frozen fruit, noncitrus	3.4	3.4	3.8	3.7
Dried fruit, noncitrus	9.9	12.2	11.7	10.5
Canned fruit, noncitrus	24.7	21.3	19.7	17.4
Fruit juices	110.7	118.6	120.8	120.6
Total vegetables	338.8	353.1	408.2	428.3
Fresh vegetables	147.9	157.2	181.9	201.7
Potatoes	52.5	48.5	48.8	47.2
Other	95.4	108.7	133.1	154.5
Processing vegetables	190.9	195.9	226.3	226.6
Vegetables for canning	101.1	98.9	109.4	104.7
Tomatoes	62.9	63.5	74.4	69.9
Other	38.2	35.4	35.0	34.8
Vegetables for freezing	52.1	61.0	76.8	79.7
Potatoes	36.1	42.8	54.9	57.8
Other	16.0	18.2	21.9	21.9
Dehydrated vegetables and chips	30.8	29.4	32.0	33.7
Pulses	7.0	6.5	8.1	8.6

Note: Totals may not add due to rounding.
Source: USDA's Economic Research Service.



In the last two decades, Americans have been more successful in reducing the fat density in home foods than in away-from-home foods, according to food intake surveys. In 1977–78, both home and away-from-home foods provided slightly more than 41 percent of their calories from fat. By 1987–88, the fat density of home foods had declined to 36.4 percent of total calories from fat, compared with 38.7 for away-from-home foods. Since then, the fat density of home foods declined steadily to 31.5 percent of calories from fat, but fat from away-from-home foods declined only slightly to 37.6 percent of calories.

Fruit and Vegetable Consumption Continues To Rise

Americans in 2000 consumed a fifth (20 percent) more fruit and vegetables than did their counterparts in the 1970s (table 2-4).

Total fruit consumption in 2000 was 12 percent above average annual fruit consumption in the 1970s. Fresh fruit consumption (up 28 percent during the same period) outpaced processed fruit consumption (up 2 percent). Noncitrus fruits accounted for all of the growth in fresh fruit consumption.

Total vegetable consumption in 2000 was 23 percent above average annual vegetable consumption in the 1970s. As in the case of fruit, fresh vegetable use (up 26 percent during the same period) outpaced processed vegetable use (up 21 percent). The introduction of pre-cut and packaged value-added products and increasing health consciousness among consumers boosted average fresh broccoli consumption by a third between 1995 and 1998 and average fresh carrot consumption by more than a fifth. Highly publicized medical research linking compounds in broccoli with strong anti-cancer activity in the body has added a powerful incentive to consumption.

The popularity of pizza and other ethnic foods in the 1990s boosted average consumption of canned tomato products, but consumption of other canned vegetables declined 13 percent between the 1970s and 1997. The popularity of french fries, eaten mainly in fast-food eateries, spawned a 63-percent increase in average consumption of frozen potatoes during the same period; consumption of other frozen vegetables rose 41 percent.

Consumers Eat Too Much Refined Grain, Too Little Whole Grain

Per capita use of flour and cereal products reached 200 pounds in 2000 from an annual average of 155 pounds in the 1950s and 138 pounds in the 1970s, when grain consumption was at a record low (table 2-5). The expansion in supplies reflects ample grain stocks; strong consumer demand for variety breads, other instore bakery items, and grain-based snack foods; and increasing fast-food sales of products made with buns, doughs, and tortillas.

Many consumers' diets now meet or exceed the Food Guide Pyramid serving recommendation for grain products. The Pyramid recommends 9 daily servings of grain products for a 2,200-calorie diet, 6 servings for a 1,600-calorie diet, and 11 servings for a 2,800-calorie diet. The food supply, adjusted for waste in the home and throughout the marketing system, provided an average of 10 daily servings of grain in 2000. This is an underestimate. The food supply database excludes wheat foods not manufactured directly from wheat flour or bulgur. That is, it excludes wheat bran, wheat germ, wheat berries and products manufactured directly from these items, such as Wheaties (cooked, flattened, toasted wheat berries), Shredded Wheat, Puffed Wheat, and All-Bran breakfast cereals and Triscuit crackers. Similarly, it excludes whole-grain foods made directly from field corn (for example, Tostito and Dorito brand corn tortilla chips, corn bran (used in some breakfast



cereals), and popcorn. ERS estimates that these missing items would add an additional serving of grains for an average of 11 daily servings of grain in 2000—the amount recommended for teenage boys or men who engage in heavy physical activity.

However, most people's diets fall well short of the recommended minimum three daily servings of whole grain products. The mean daily intake of foods made from whole grains was one serving in USDA's 1996 *Continuing Survey of Food Intakes by Individuals*. According to the survey, only 7 percent of Americans ate the recommended three or more servings of whole-grain foods a day.

Table 2-5

Annual average grain consumption was 45 percent higher in 2000 than in the 1970s

Item	Annual averages					
	1950-59	1960-69	1970-79	1980-89	1990-99	2000
	<i>Pounds per capita</i>					
Total grain products ¹	155.4	142.5	138.2	157.4	190.6	199.9
Wheat flour	125.7	114.4	113.6	122.8	141.8	146.3
Corn products	15.4	13.8	11.0	17.3	24.5	28.4
Rice	5.3	7.1	7.3	11.3	17.5	19.7

¹ Includes oat products, barley products, and rye flour not shown separately.
Source: USDA's Economic Research Service.

Table 2-6**America's sweet tooth increased 39 percent between 1950–59 and 2000 as use of corn sweeteners octupled**

Item	Annual averages					
	1950–59	1960–69	1970–79	1980–89	1990–99	2000
	<i>Pounds per capita, dry weight</i>					
Total caloric sweeteners	109.6	114.4	123.7	126.5	145.9	152.4
Cane and beet sugar	96.7	98.0	96.0	68.4	64.7	65.6
Corn sweeteners	11.0	14.9	26.3	56.8	79.9	85.3
High fructose corn syrup	.0	.0	5.5	37.3	56.8	63.8
Glucose	7.4	10.9	16.6	16.0	19.3	18.1
Dextrose	3.5	4.1	4.3	3.5	3.8	3.4
Other caloric sweeteners	2.0	1.5	1.4	1.3	1.3	1.5

Note: Totals may not add due to rounding.

1Edible syrups (sugarcane, sorgo, maple, and refiner's), edible molasses, and honey.

Source: USDA's Economic Research Service.

Consumption of Caloric Sweeteners Hits Record High in 1999

Americans have become conspicuous consumers of sugar and sweet-tasting foods and beverages. Per capita consumption of caloric sweeteners (dry-weight basis)—mainly sucrose (table sugar made from cane and beets) and corn sweeteners (notably high-fructose corn syrup, or HFCS)—increased 43 pounds, or 39 percent, between 1950–59 and 2000 (table 2-6). In 2000, each American consumed an average 152 pounds of caloric sweeteners, 3 pounds below 1999's record average 155 pounds. That amounted to more than two-fifths of a pound—or 52 teaspoonfuls—of added sugars per person per day in 2000. Of that 52 teaspoons, ERS estimates that Americans wasted or otherwise lost 20 teaspoons, resulting in an average intake of about 32 teaspoons of added sugars per person per day.

USDA recommends that the average person on a 2,000-calorie daily diet include no more than 40 grams of added sugars. That's about 10 teaspoons, or the amount of sugar in a 12-ounce soft drink. Sugar—including sucrose, corn sweeteners, honey, maple syrup, and molasses—is ubiquitous and often hidden. In a sense, sugar is the number one food additive. It turns up in some unlikely places, such as pizza, bread, hot dogs, boxed mixed rice, soup, crackers, spaghetti sauce, lunch meat, canned vegetables, fruit drinks, flavored yogurt, ketchup, salad dressing, mayonnaise, and some peanut butter. Carbonated sodas provided more than a fifth (22 percent) of the refined and added sugars in the 2000 American food supply, compared with 16 percent in 1970.

Food Expenditures and Prices

What does it cost Americans to eat what they eat? Total food expenditures, which includes imports, fishery products, and food originating on farms, were \$844.2 billion in 2001, an increase of 3.8 percent over those in 2000. Average food expenditures came to \$2,964 per capita, 2.8 percent above the 2000 average. Away-from-home meals and snacks captured 47 percent of the U.S. food dollar in 2001, up from 45 percent in 1991 and 40 percent in 1981.

While personal food expenditures rose 3.7 percent, disposable personal income increased 5.5 percent from 2000 to 2001. U.S. consumers in 2001 spent 10.0 percent of their disposable personal income (after taxes) on food. This figure compares with 11.6 percent in 1991, 13.0 percent in 1981, and 13.4 percent in 1971.

In the United States, retail food prices (including meals served in restaurants and food purchased at grocery stores) rose 27.0 percent over the last 10 years (1991-2001). Prices of food eaten away from home increased 26.1 percent, while retail food store prices increased 27.7 percent. Prices of all goods and services in the Consumer Price Index climbed 30.0 percent over the same 10 years.

How Much of the Cost of Food Services and Distribution Goes to Farmers?

The estimated bill for marketing domestic farm foods—which does not include imported foods—was \$498 billion in 1999. This amount covered all charges for transporting, processing, and distributing foods that originated on U.S. farms. It represented 80 percent of the \$618 billion consumers spent for these foods. The remaining 20 percent, or \$121 billion, represents the gross return paid to farmers.

The cost of marketing farm foods has increased considerably over the years, mainly because of rising costs of labor, transportation, food packaging materials, and other inputs used in marketing, and also because of the growing volume of food and the increase in services provided with the food.

In 1990, the cost of marketing farm foods amounted to \$343 billion. In the decade after that, the cost of marketing rose about 57 percent. In 2000, the marketing bill rose 6.9 percent. These rising costs have been the principal factor affecting the rise in consumer food expenditures. From 1990 to 2000, consumer expenditures for farm foods rose \$211 billion. Roughly 92 percent of this increase resulted from an increase in the marketing bill.

The cost of labor is the biggest part of the total food marketing bill, accounting for nearly half of all marketing costs. Labor used by assemblers, manufacturers, wholesalers, retailers, and eating places cost \$252 billion in 2000. This was 4.7 percent higher than in 1999 and 64 percent more than in 1990. The total number of food marketing workers in 2000 was about 14.3 million, about 17 percent more than in 1990. About 80 percent of the growth in food industry employment occurred in public eating places. A wide variety of other costs comprise the balance of the marketing bill. These costs include packaging, transportation, energy, advertising, business taxes, net interest, depreciation, rent, and repairs. Their relative proportions are illustrated in the accompanying dollar chart.

Figure 2-2
What a dollar spent on food paid for in 2000

