



Impact of the 2010 DGA on Fruits and Vegetables

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Luis A. Ribera

Associate Professor and Extension Economist

AFPC

Agricultural and Food Policy Center
@ Texas A&M University



*Agri*LIFE **EXTENSION**

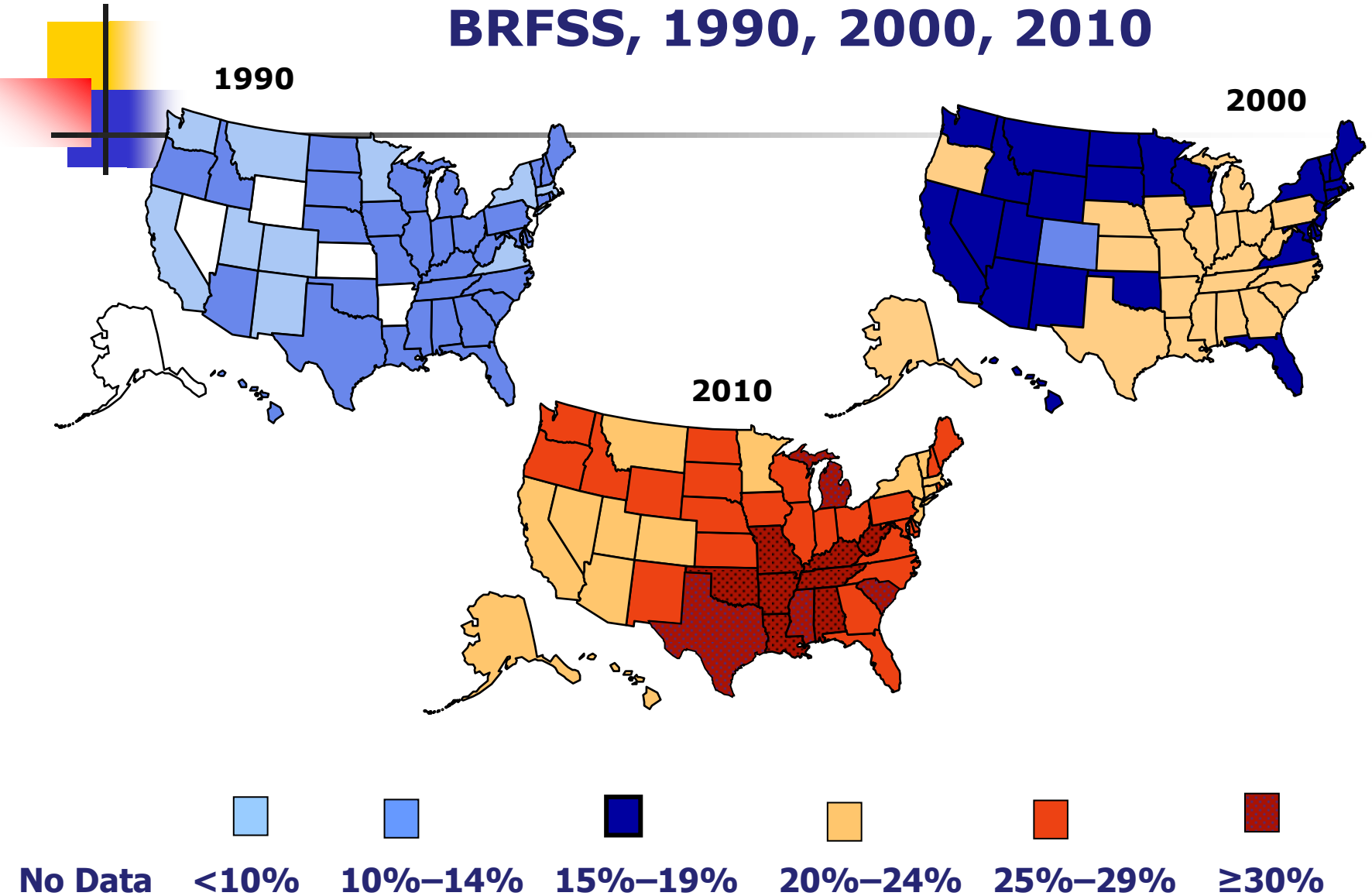
Texas A&M System



Outline

- 2010 Dietary Guidelines
- U.S. Fruits and Vegetable Production, Imports and Trade
- Sensitivity Analysis
- Texas

Obesity Trends* Among U.S. Adults BRFSS, 1990, 2000, 2010



Food Pyramid: 1992

Fats, Oils & Sweets
USE SPARINGLY

KEY

■ Fat (naturally occurring and added)

▣ Sugars (added)

These symbols show fats and added sugars in foods.

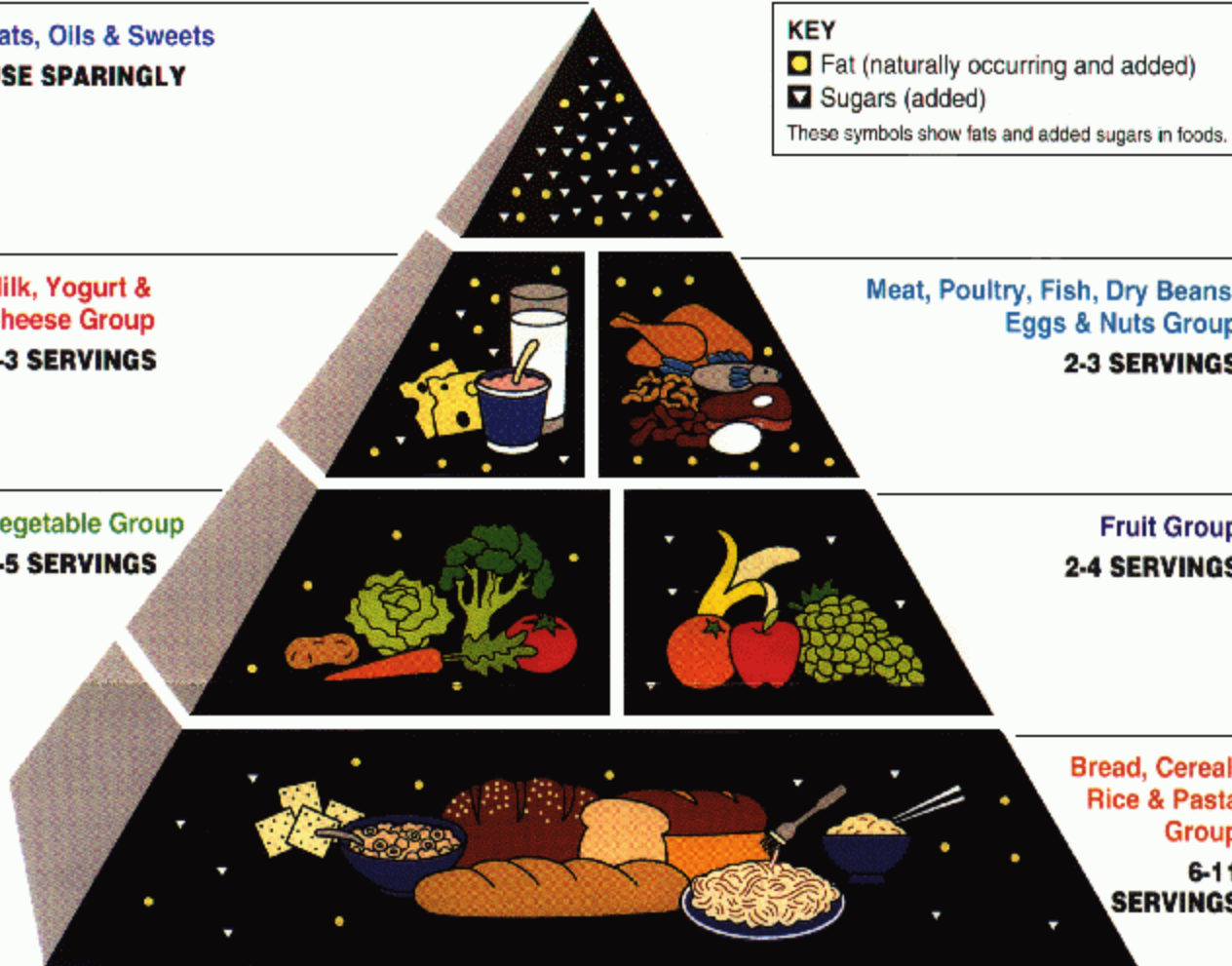
**Milk, Yogurt &
Cheese Group**
2-3 SERVINGS

**Meat, Poultry, Fish, Dry Beans,
Eggs & Nuts Group**
2-3 SERVINGS

Vegetable Group
3-5 SERVINGS

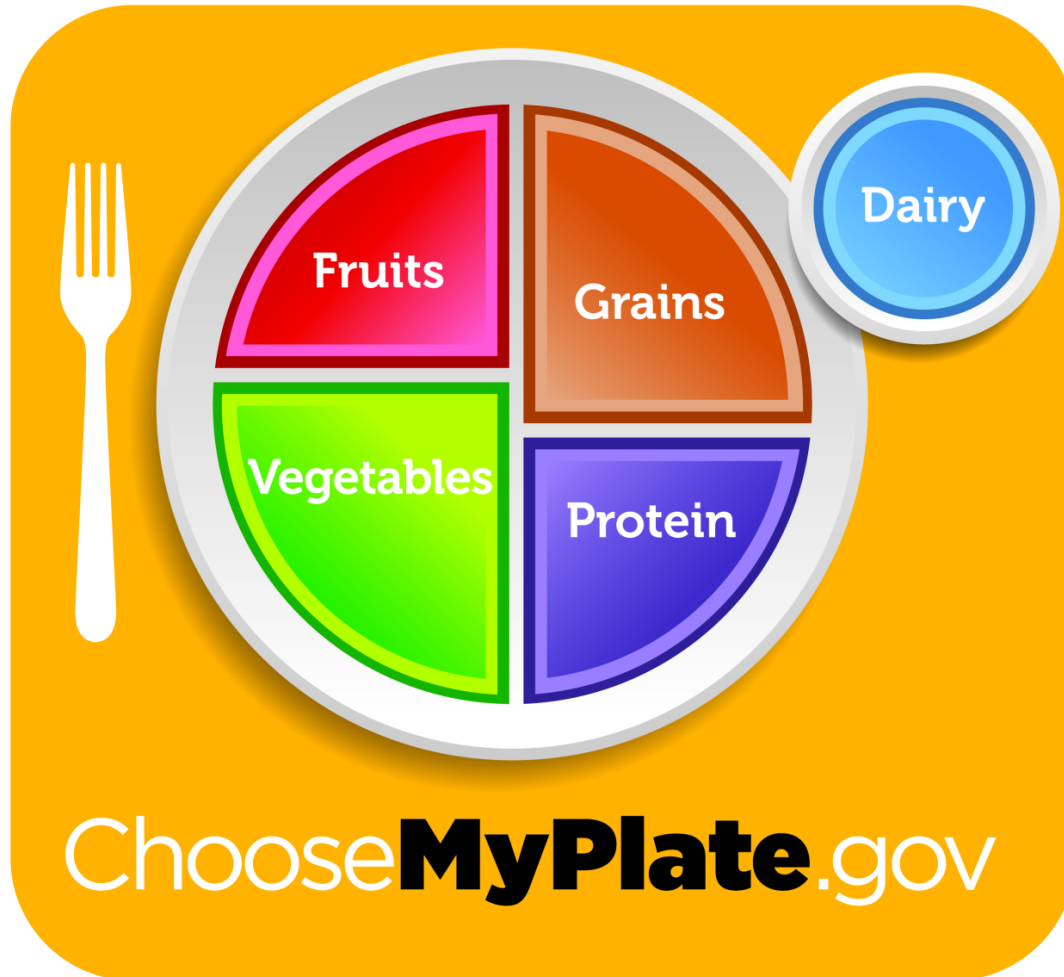
Fruit Group
2-4 SERVINGS

**Bread, Cereal,
Rice & Pasta
Group**
**6-11
SERVINGS**





My Plate: 2010



Comparison of the 2005 and 2010 DGA for 2,000 Caloric Intake

| Food Group | Units | DGA 2010 | DGA 2005 | Difference |
|----------------------------------|---------|----------|----------|------------|
| <i>Fruits</i> | cups | 2.0 | 2.0 | 0.0 |
| <i>Vegetables</i> | cups | 2.5 | 2.5 | 0.0 |
| Dark Green | cups/wk | 1.5 | 3.0 | -1.5 |
| Beans and Peas (legumes) | cups/wk | 1.5 | 3.0 | -1.5 |
| Red and Orange ¹ | cups/wk | 5.5 | 2.0 | 3.5 |
| Starchy Vegetables | cups/wk | 5.0 | 3.0 | 2.0 |
| Other | cups/wk | 4.0 | 6.5 | -2.5 |
| <i>Grains</i> | oz-eq | 6.0 | 6.0 | 0.0 |
| Whole Grains | oz-eq | 3.0 | 3.0 | 0.0 |
| Enriched Grains | oz-eq | 3.0 | 3.0 | 0.0 |
| <i>Protein Foods²</i> | oz-eq | 5.5 | 5.5 | 0.0 |
| Seafood | oz/wk | 8.0 | n.s. | n.s. |
| Meat, Poultry and Eggs | oz/wk | 26.0 | n.s. | n.s. |
| Nuts, Seeds, Soy Products | oz/wk | 4.0 | n.s. | n.s. |
| <i>Dairy</i> | cups | 3.0 | 3.0 | 0.0 |
| <i>Oils</i> | grams | 27.0 | 27.0 | 0.0 |

Source: Dietary Guidelines for Americans, 2005 and 2010. ¹ Red vegetables were in the "other category in the 2005 DGA and were moved to "red and orange" in the 2010 DGA. ² Protein foods were called lean meat and beans in the 2005 DGA. n.s. is not-specified.

Changes needed to meet the full recommendation levels for the average American with an intake level of 2,594 calories per day.

| Food Group | Units | Recommended | Available | % Change |
|-------------------------------|-----------------|-------------|-----------|----------|
| <i>Fruits</i> | <i>cups/wk</i> | 14 | 6 | 133.3% |
| <i>Vegetables</i> | <i>cups/wk</i> | 24.5 | 11.5 | 114.0% |
| Dark Green | <i>cups/wk</i> | 2.5 | 1 | 150.0% |
| Beans and Peas (legumes) | <i>cups/wk</i> | 2.5 | 0.7 | 257.1% |
| Red and Orange | <i>cups/wk</i> | 7 | 2.1 | 233.3% |
| Starchy Vegetables | <i>cups/wk</i> | 7 | 3.9 | 79.5% |
| Other | <i>cups/wk</i> | 5.5 | 3.8 | 44.7% |
| <i>Grains</i> | <i>oz-eq/wk</i> | 62.8 | 57.5 | 9.2% |
| Whole Grains | <i>oz-eq/wk</i> | 31.4 | 6 | 423.3% |
| Enriched Grains | <i>oz-eq/wk</i> | 31.4 | 51.5 | -39.0% |
| <i>Meat, Poultry and Eggs</i> | <i>oz/wk</i> | 31 | 39.6 | -21.7% |
| <i>Dairy</i> | <i>cups/wk</i> | 21 | 12.1 | 73.6% |
| <i>Fats and Oils</i> | <i>grams/wk</i> | 236.2 | 463.4 | -49.0% |

Source: Dietary Guidelines for Americans, 2010 and ERS Loss-Adjusted Food Availability Database.



Available and Needed Food to Comply with DGA 2010

| Food Group | Total weight available¹ | Total weight needed | Difference |
|-------------------------------|---|--------------------------------|-----------------------|
| | <i>million pounds</i> | <i>million pounds</i> | <i>million pounds</i> |
| <i>Fruits</i> | 79,005 | 184,958 | +105,954 |
| <i>Vegetables</i> | 120,173 | 256,199 | +136,026 |
| <i>Grains</i> | 59,803 | 65,288 | +5,485 |
| <i>Seafood</i> | 4,848 | 14,947 | +10,099 |
| <i>Meat, Poultry and Eggs</i> | 90,524 | 70,856 | -19,668 |
| <i>Dairy</i> | 186,652 | 324,188 | +137,536 |

¹ Based on food availability data from the ERS food consumption data system for 2009.

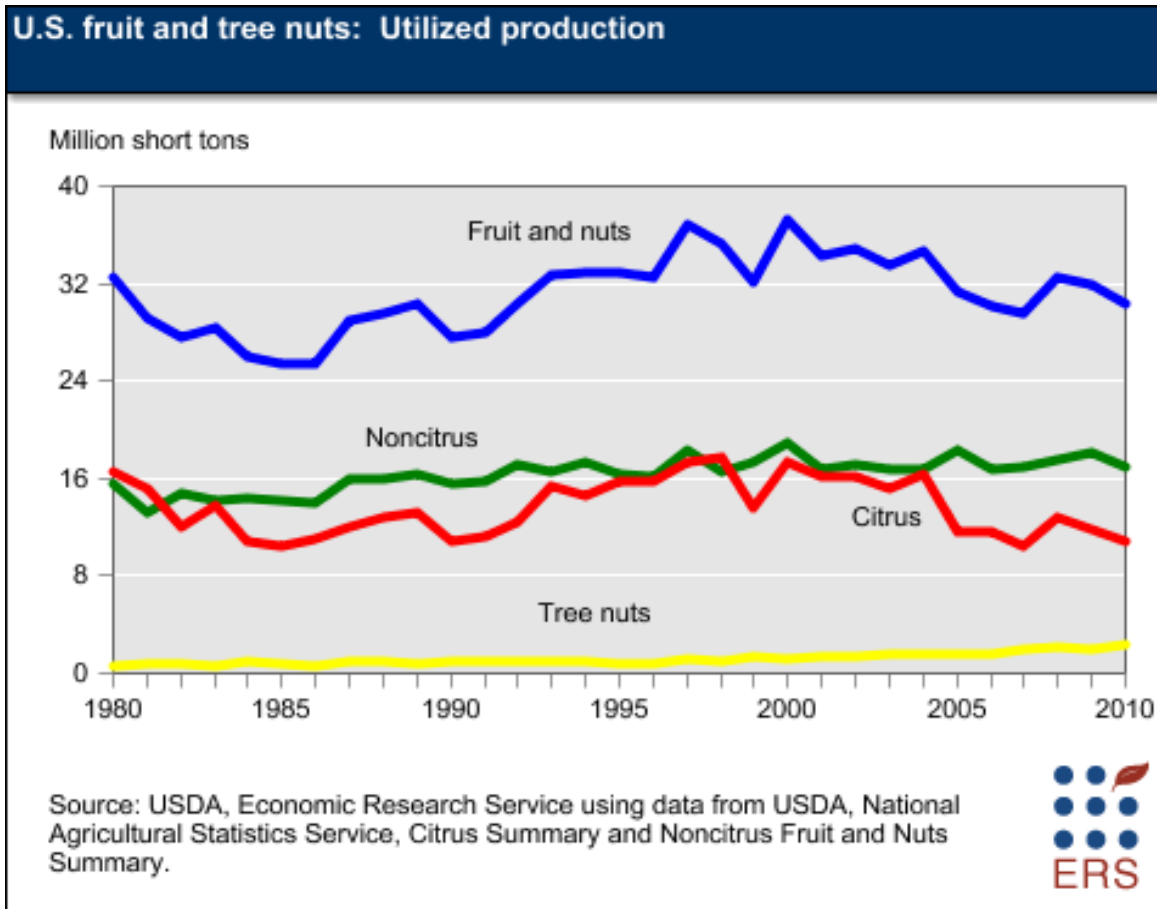
Sensitivity Analysis of Fruit Production, Imports and Exports to meet 2010 DGA

| | Total Domestic Production | Total Imports | Total Exports | Change in acreage of domestic production |
|--|---------------------------|-----------------|-----------------|--|
| Actual (average 2005-2010) | 26.5 million MT | 9.9 million MT | 3.4 million MT | ----- |
| Simulation results | | | | |
| Scenario 1: (Holding exports, the share of imports constant) | 34.6 million MT | 12.8 million MT | 3.4 million MT | 891,400 acres |
| Scenario 2: (Exports decrease by 10%; Share of imports increases by 10%) | 29.5 million MT | 17.5 million MT | 3.06 million MT | 334,500 acres |
| Scenario 3: (Exports decrease by 20%; Share of imports increases by 15%) | 27.0 million MT | 19.7 million MT | 2.72 million MT | 54,800 acres |

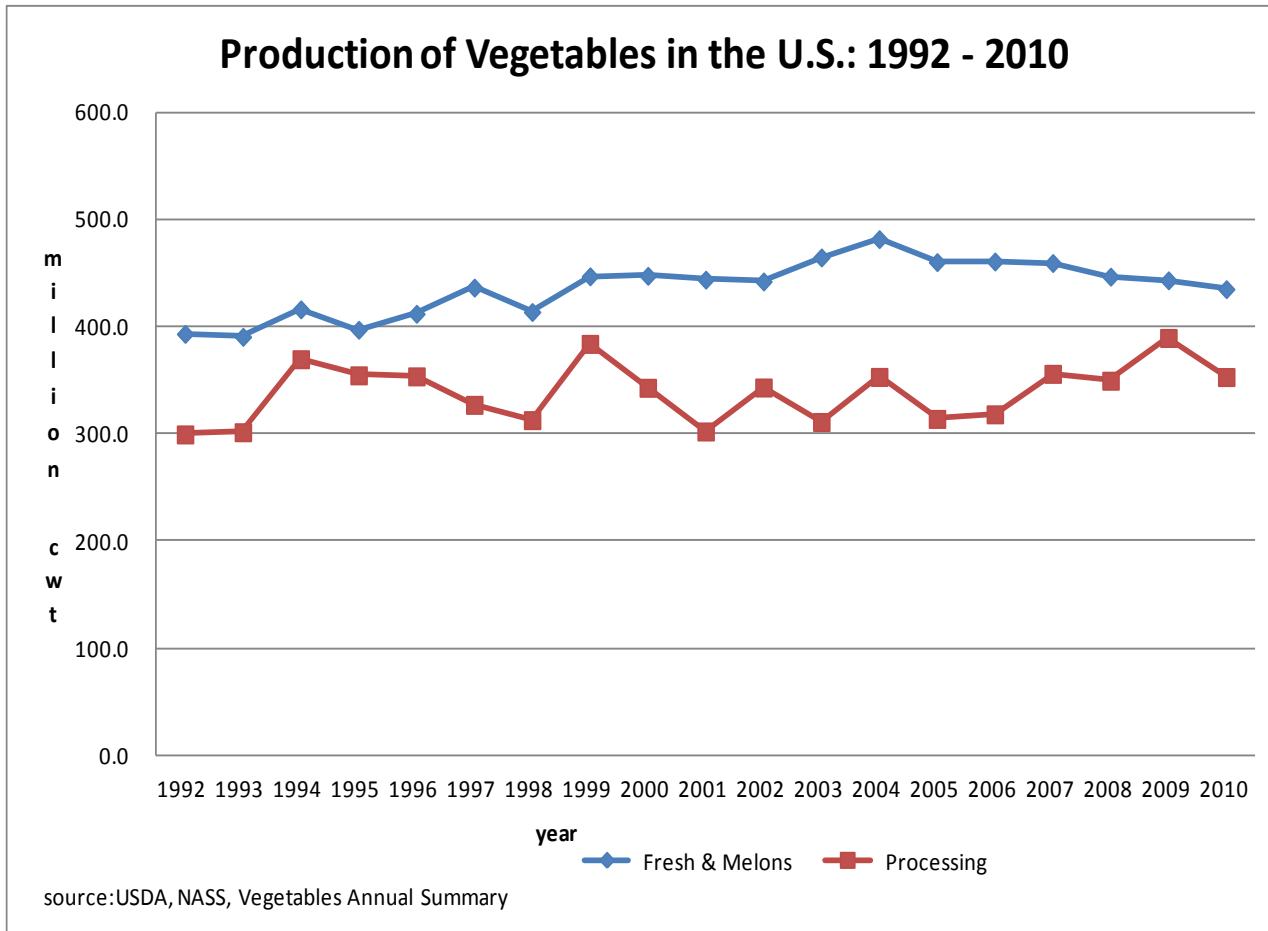
Sensitivity Analysis of Vegetable Production, Imports and Exports to meet 2010 DGA

| | Total Domestic Production | Total Imports | Total Exports | Change in acreage of domestic production |
|---|---------------------------|-----------------|----------------|--|
| Actual (average 2005-2010) | 56 million MT | 5 million MT | 7.6 million MT | ----- |
| Simulation results | | | | |
| Scenario 1: (Holding exports, the share of imports constant) | 63.8 million MT | 5.6 million MT | 7.6 million MT | 824,000 acres |
| Scenario 2: (Exports decrease by 10%; Share of imports increase by 10%) | 55.4 million MT | 12.3 million MT | 6.8 million MT | -72,800 acres |
| Scenario 3: (Exports decrease by 20%; Share of imports increase by 5%) | 58.1 million MT | 8.8 million MT | 6.1 million MT | 254,800 acres |

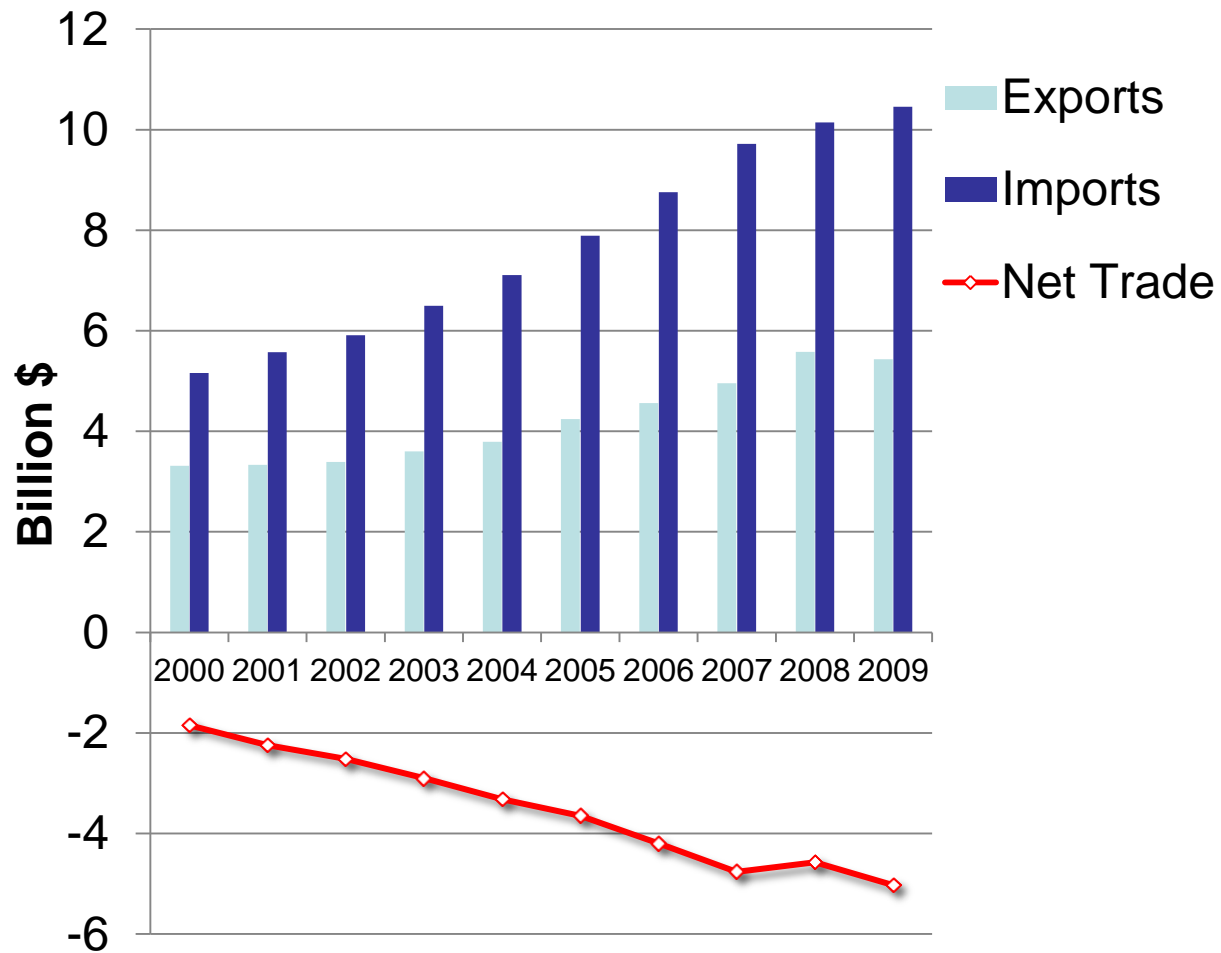
U.S. Fruit and Tree Nuts Production



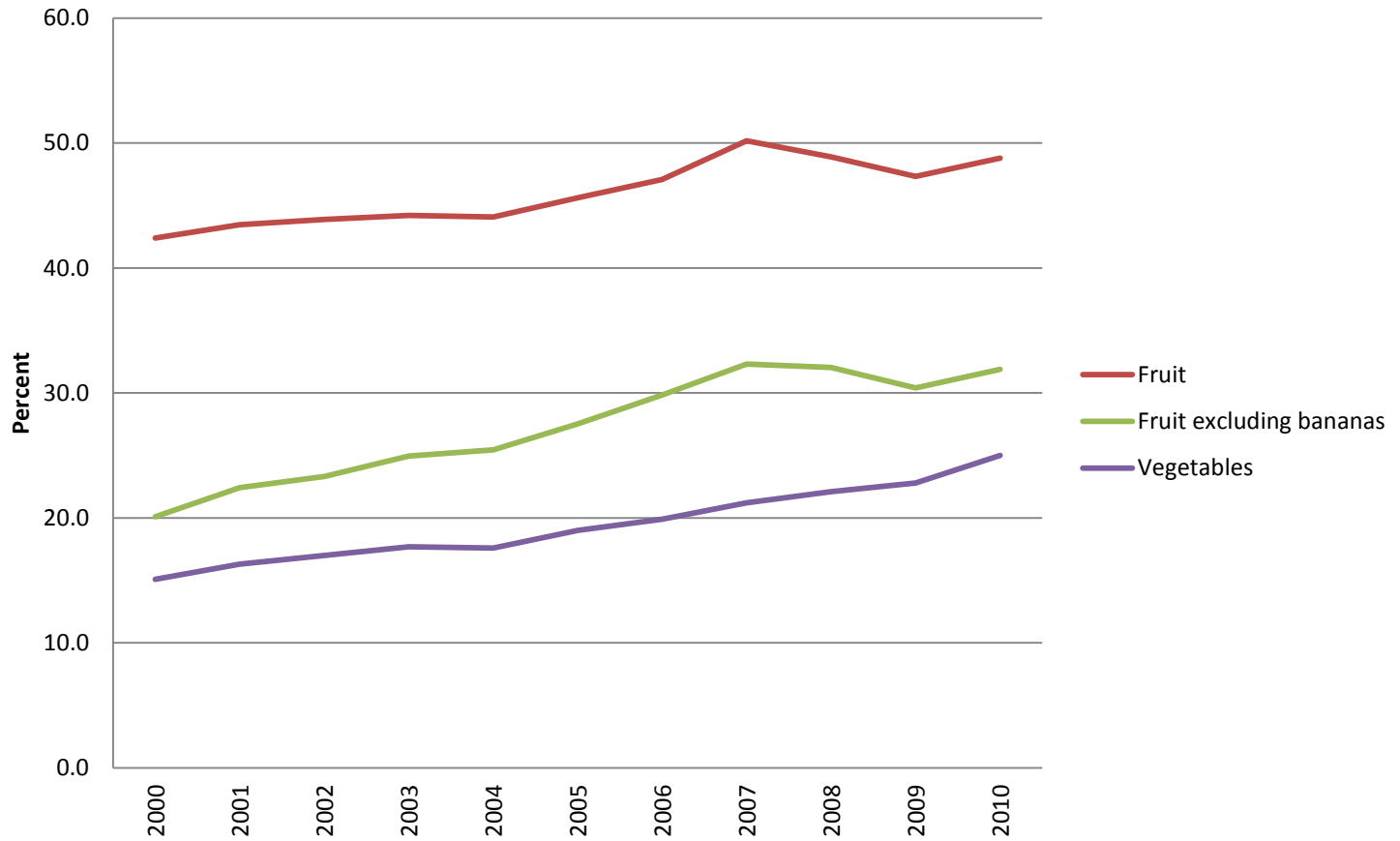
U.S. Vegetable Production



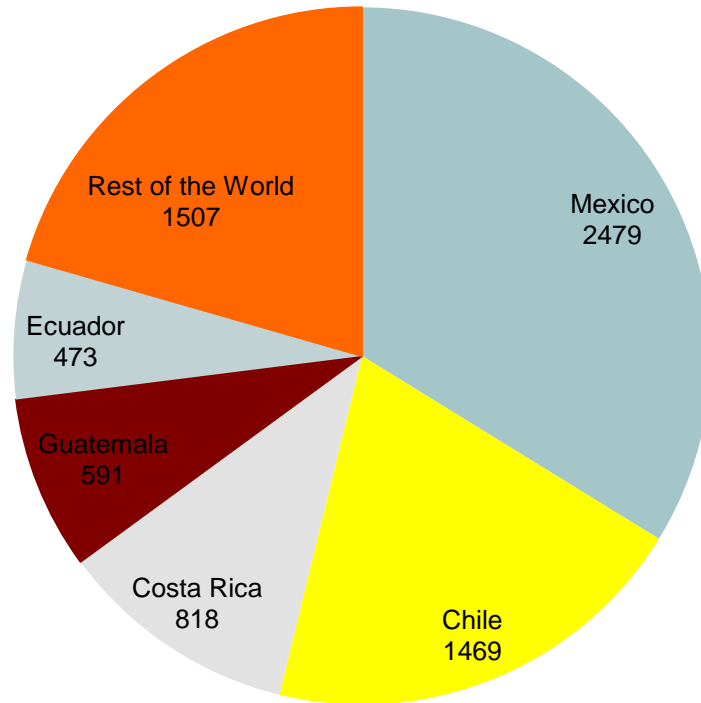
U.S. Net Trade of Fresh Fruits & Vegetables



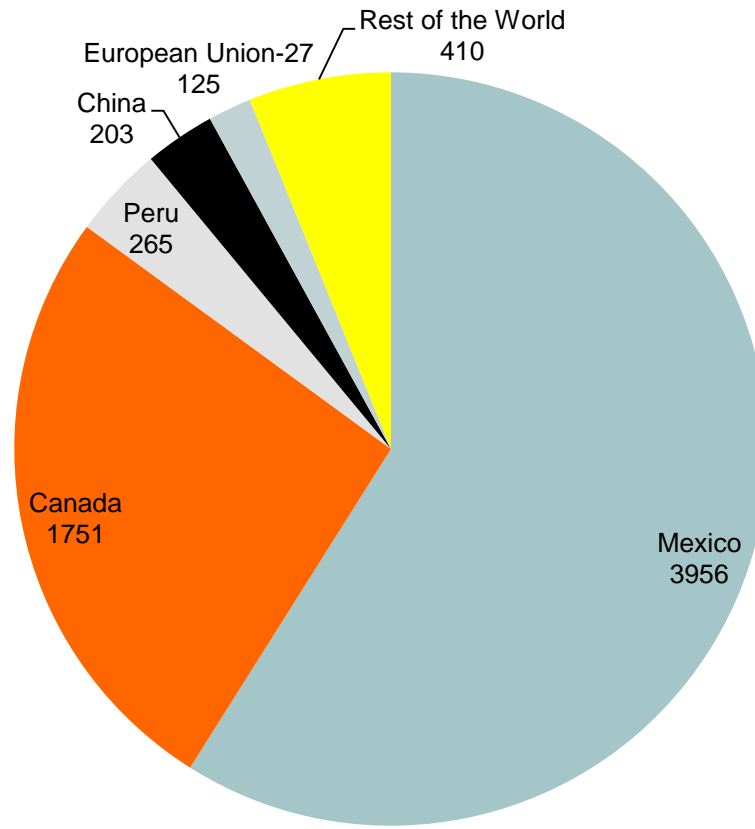
Share of U.S. Consumptions From Imports



Sources of Imported Fruits to the U.S., 2010 (Million \$)



Sources of Imported Vegetables to the U.S., 2010 (Million \$)



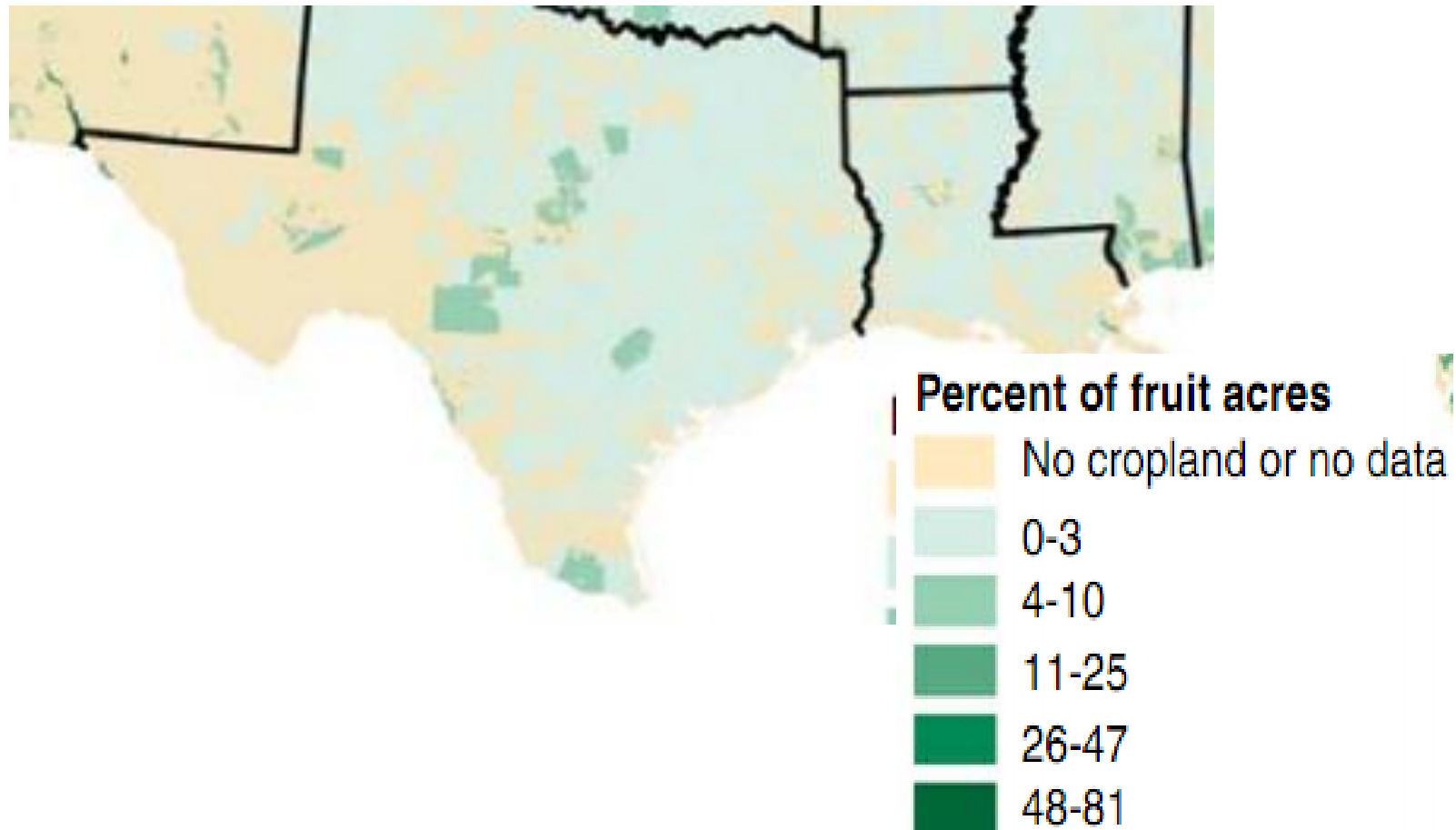


Consumption Data - Texas

- State-level consumption data seem to not exist, at least not in a readily usable state
- They *may* exist in the National Health and Nutrition Examination Survey (NHANES) data
 - Definitely *not* reported in summary fashion by state
 - Complex database queries would be required
 - <http://www.ars.usda.gov/Services/docs.htm?docid=13793>
 - http://wwwn.cdc.gov/nchs/nhanes/bibliography/key_statistics.aspx

Most Central South Fruit Production is in Texas

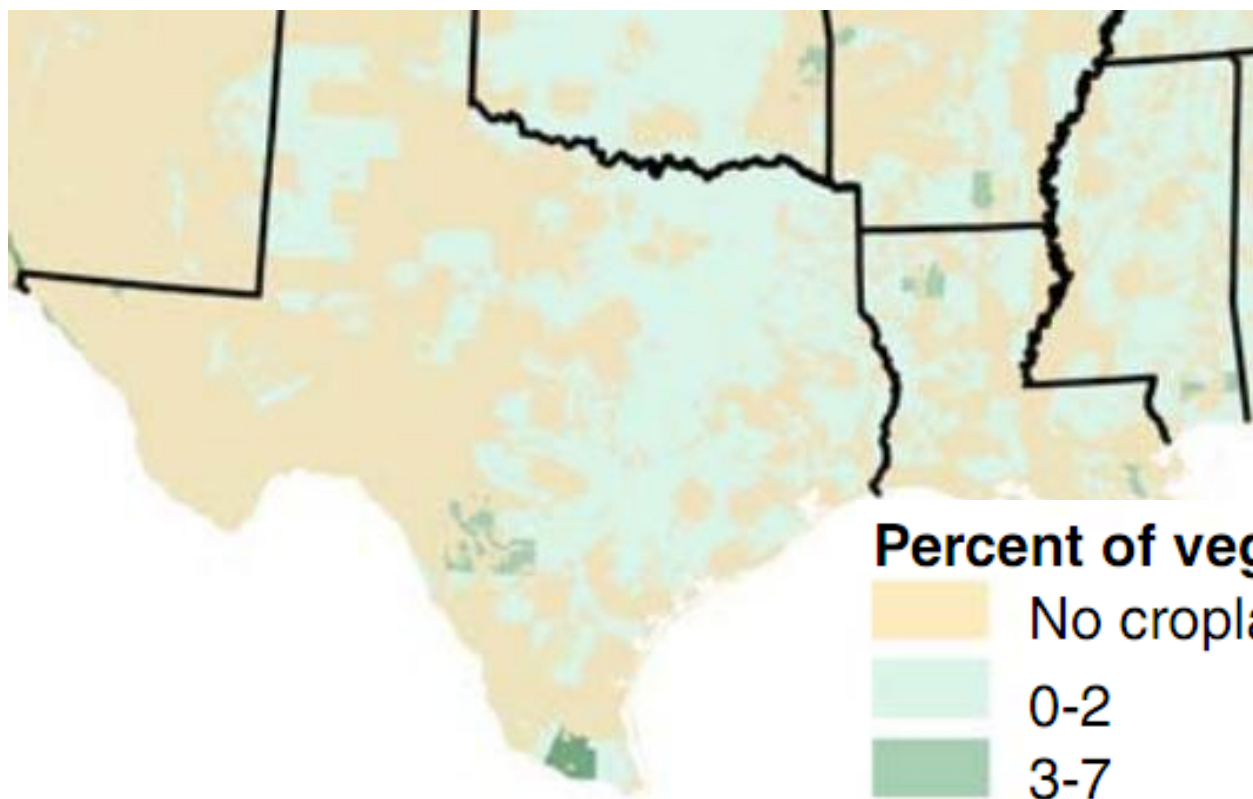
Fruit Harvested Acres as a percent of total cropland



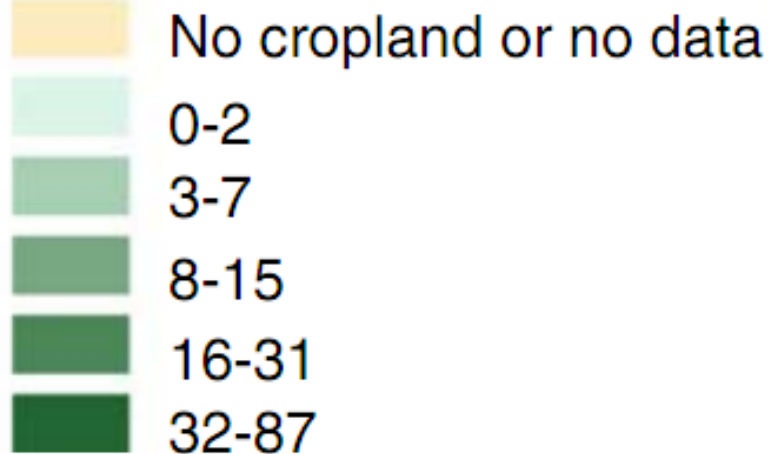
Source: Buzby, Wells, Vocke (2006)

Most Central South Veg Production is in Texas

Veg Harvested Acres as a percent of total cropland



Percent of vegetable acres



Source: Buzby, Wells, Vocke (2006)

Required National Increase in Availability vs. Texas Production Surplus: Fruits

- Required national availability increase: about 106 million pounds (134% increase)
- Texas production surplus for major fruits: -4,504 million pounds

* Source: Texas Dept. of Agriculture

| Fruits | Texas Surplus* (Mil. Pounds) |
|-----------------|--|
| Grapefruit | 258.2 |
| Watermelon | 234.0 |
| Blackberries | 1.7 |
| Kiwi Fruit | -11.6 |
| Honeydew Melons | -19.6 |
| Apricots | -22.4 |
| Blueberries | -26.2 |
| Pears | -116.3 |
| Cantaloupe | -193.6 |
| Peaches | -201.8 |
| Strawberries | -202.2 |
| Pineapples | -338.7 |
| Grapes | -503.2 |
| Bananas | -630.1 |
| Apples | -1,201.1 |
| Oranges | -1,269.7 |

Required National Increase in Availability vs. Texas Production Surplus: Green Veg

- Required national availability increase: about 150%
- Texas production surplus of major green vegetables: - 1,585 million pounds

| Green Vegetables | Texas Surplus* (Mil. Pounds) |
|-------------------------|---|
| Cabbage | 20.8 |
| Mustard Greens | 6.7 |
| Collard Greens | 4.4 |
| Turnip Greens | -2.6 |
| Kale | -5.8 |
| Okra | -6.1 |
| Brussel Sprouts | -7.5 |
| Asparagus | -37.7 |
| Artichokes | -40.2 |
| Spinach | -43.9 |
| Celery | -155.9 |
| Cucumbers | -170.1 |
| Broccoli | -202.0 |
| Bell Peppers | -244.4 |
| Lettuce, Leaf | -275.8 |
| Lettuce, Head | -425.0 |

* Source: Texas Dept. of Agriculture

Required National Increase in Availability vs. Texas Production Surplus: Beans and Peas

- Required national availability increase: about 266%
- Texas production surplus of beans and peas: -336 million pounds

| Beans and Peas | Texas Surplus* (Mil. Pounds) |
|-----------------------|---|
| Dry Peas | 11.1 |
| Green Peas | -69.7 |
| Dry Beans | -135.5 |
| Snap Beans | -142.1 |

* Source: Texas Dept. of Agriculture

Required National Increase in Availability vs. Texas Production Surplus: Red and Orange Vegetables

- Required national availability increase: about 230%
- Texas production surplus of red and orange vegetables: -2,395 million pounds

| Red and Orange Vegetables | Texas Surplus* (Mil. Pounds) |
|----------------------------------|---|
| Carrots | -232.7 |
| Tomatoes | -2,162.1 |

* Source: Texas Dept. of Agriculture

Required National Increase in Availability vs. Texas Production Surplus: Starchy Vegetables

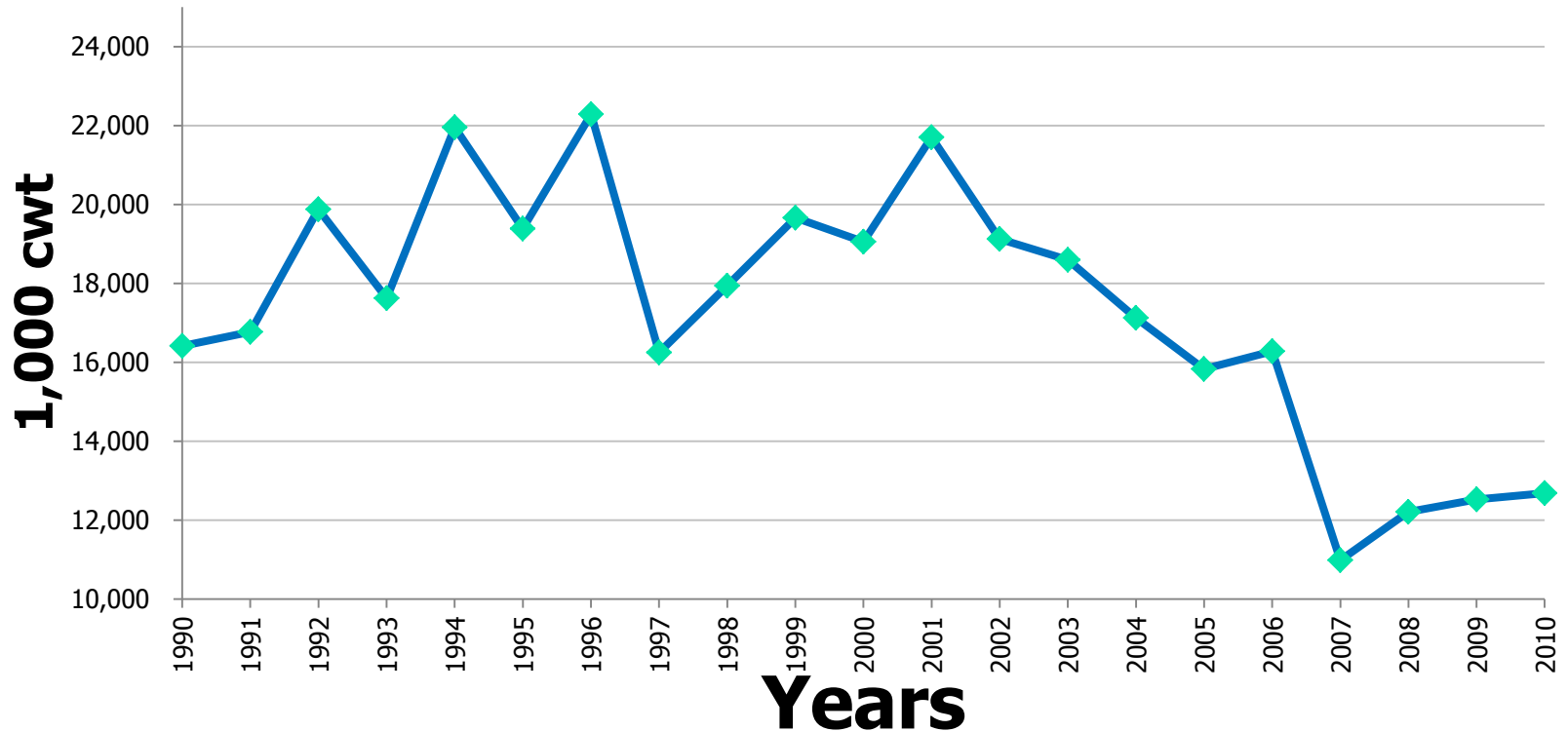
- Required national availability increase: about 79%
- Texas production surplus of starchy vegetables: -2,849 million pounds

| Starchy Vegetables | Texas Surplus* (Mil. Pounds) |
|---------------------------|--|
| Squash | -88.6 |
| Sweet Potatoes | -113.7 |
| Potatoes | -2,647.1 |

* Source: Texas Dept. of Agriculture

Fresh Market Production of Selected Vegetables in Texas

Fresh Market Production of Selected Vegetables in Texas, 1990-2010



Source: USDA-NASS

Required National Increase in Availability vs. Texas Production Surplus: Meat, Poultry, Eggs

- Required national availability **decrease**: about 19,668 lbs. (decrease of 22%)
- Texas production surplus of meat, poultry & eggs: around **+3,500** million pounds

| Meat, Poultry, and Eggs | Texas Surplus* (Mil. Pounds) |
|--------------------------------|--|
| Beef | 4,489.0 |
| Broilers | 1,220.0 |
| Turkeys | -349.6 |
| Eggs (number, not lbs.) | -1,314.5 |
| Pork | -1,429.8 |

* Source: Texas Dept. of Agriculture

Required National Increase in Availability vs. Texas Production Surplus: Milk and Dairy Products

- Required national availability increase: about 137,536 lbs. (increase of 74%)
- Texas Surplus of milk (not including dairy products): **+3,706 million pounds**

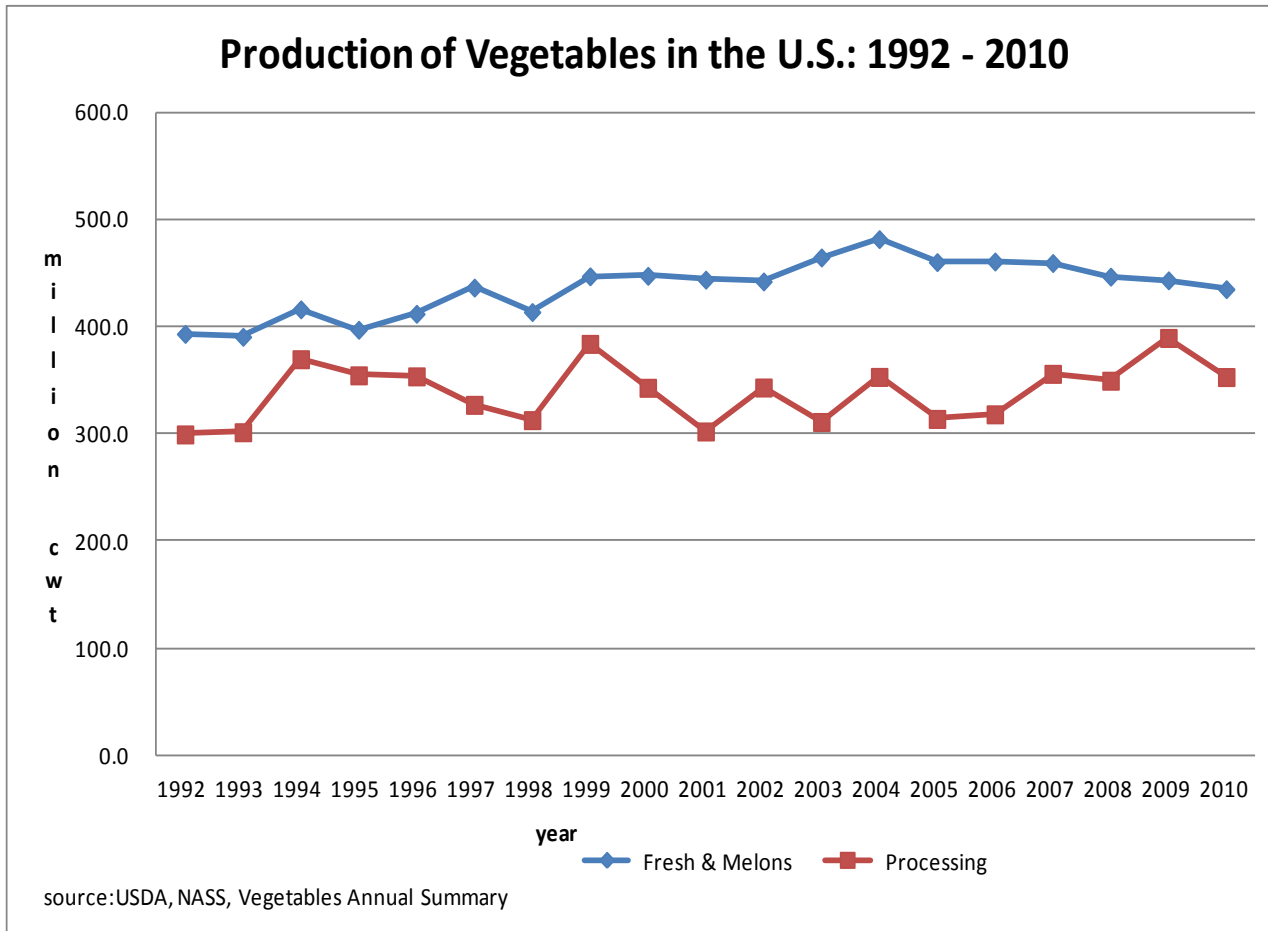
| <u>Dairy</u> | Texas Surplus* (Mil. Pounds) |
|--------------|---------------------------------|
| Milk | 3,705.8 |

* Source: Texas Dept. of Agriculture

Table : Maximum Crop acreage adjustments implied by full adoption of selecte recommendations from the 2005 and 2010 Dietary Guidelines for Americans

| Crop | 2010 Dietary Guidelines | | | 2005 Dietary Guidelines | | |
|--|---|------------------------|-----------------------------------|-----------------------------------|------------------------|-----------------------------------|
| | Average harvested area, 2008-2010 | Adjustments in acreage | Acreage needed to meet Guidelines | Average harvested area, 1999-2003 | Adjustments in acreage | Acreage needed to meet Guidelines |
| | Million acres | | | Million acres | | |
| Vegetables: | 6.7 | 3.8 | 10.4 | 6.5 | 8.9 | 15.3 |
| Dark green | 0.3 | 0.3 | 0.6 | 0.3 | 0.5 | 0.8 |
| Red and orange | 0.7 | 0.7 | 1.4 | 0.2 | 0.4 | 0.6 |
| Legumes | 2.8 | 2.8 | 5.7 | 2.0 | 8.8 | 10.8 |
| Starchy | 2.2 | 0.9 | 3.1 | 2.3 | -0.8 | 1.5 |
| Other | 0.7 | 0.1 | 0.8 | 1.7 | - | 1.7 |
| Source: For 2005 -- Possible Implications for U.S. Agriculture From Adoption of Select Dietary Guidelines/ ERR-31, ERS, USDA | | | | | | |
| For 2010 -- | For food groupings - Dietary Guidelines for Americans, 2010, Table 5-2 (p. 52), and Notes for Appendix 7 (p. 80); | | | | | |
| | and USDA's My Plate, Food Groups, What counts as a cup of vegetables? | | | | | |
| | Dark Green: Broccoli, Collard greens (no data), Escarole/endive (CA), Kale (CA), Romaine and leaf lettuce, Mustard greens (no data) | | | | | |
| | Spinach, Turnip greens (CA); Beans and Peas: Dry edible beans, Dry edible peas (no CA), Lentils (no CA); Red and Orange: Carrots, | | | | | |
| | Pumpkin, Squash, Sweet potatoes (no CA), Tomatoes; Starchy Vegetables: Sweet corn, Potatoes (no CA), Green peas (no CA); | | | | | |
| | Total Vegetables is excluding melons. | | | | | |
| For data - NASS, USDA, 2008-2010; ERS, USDA, Vegetables and Melons Yearbook Data | | | | | | |
| | #89011, May 19, 2011, Tables 3, 5, 167. | | | | | |

U.S. Vegetable Production





Summary

- Increase acreage on fruits and vegetables
- Production trends going the wrong direction
- Likely the potential increase in demand will come from imports
- Issues with food safety?



Questions/Comments?

Email: [**lribera@tamu.edu**](mailto:lribera@tamu.edu)

Phone: 956-968-5581

[**www.afpc.tamu.edu**](http://www.afpc.tamu.edu)

