Colorado State University

Colorado Perspectives on the Organic Market

Is Organic an Option for me?

Dawn Thilmany McFadden,
Colorado State University

Today's Talking Points

- Dynamics of the Organic Market
- Consumer's Role in Shaping Organic Agriculture and Foods
- What this means for Ag and Food Managers

USDA reports Continued Growth

- Over 25,000 certified organic operations in more than 120 different countries
- USDA has helped an additional 763 producers become certified organic in just 2013, an increase of 4.2 percent from the previous year.
  - The industry today encompasses a record breaking 18,513 certified organic farms and businesses in the United States alone, representing a 245 percent increase since 2002.

Consumer Driven Sector

- Agriculture Secretary Tom Vilsack noted…
  - Consumer demand for organic products has grown exponentially over the past decade. With retail sales valued at $35 billion last year, the organic industry represents a tremendous economic opportunity for farmers, ranchers and rural communities
  - This presentation will focus on the consumer and market driven factors and how that influences your consideration of participating in this dynamic sector

ORGANIC.

CONSUMER DRIVEN. FARMER POWERED.

ORGANIC FOOD AND FARMING FUELS JOBS, RURAL ECONOMIES, AND CONSUMER CHOICE.

78% OF U.S. FAMILIES ARE **BUYING ORGANIC**

40% OF THE ORGANIC MARKET IS FRUITS AND VEGETABLES

94% OF ORGANIC OPERATIONS NATIONWIDE ARE PLANNING TO MAINTAIN OR INCREASE EMPLOYMENT IN 2012

6% OF ALL DAIRY PRODUCTS SOLD TO U.S. CONSUMERS ARE ORGANIC

THERE ARE ORGANIC FARMS IN ALL **50 STATES**

THE ORGANIC INDUSTRY GENERATES OVER **$31 BILLION** PER YEAR

MORE THAN HALF OF PARENTS HAVE A HIGH LEVEL OF TRUST FOR ORGANIC PRODUCTS

THE ORGANIC INDUSTRY IS CREATING JOBS AT **4 TIMES** THE NATIONAL AVERAGE

17,600 CERTIFIED ORGANIC FARMS, RANCHES AND BUSINESSES NATIONWIDE

4.6 MILLION ACRES OF ORGANIC FARMLAND ACROSS THE U.S.

ORGANIC FARMS ARE **35%** MORE PROFITABLE THAN THE AVERAGE FARM

ORGANIC IS NOT JUST FOOD. **OVER $2 BILLION** WORTH OF ORGANIC FIBER, COSMETIC, AND HOUSEHOLD PRODUCTS WERE SOLD LAST YEAR

IN 2011, THE ORGANIC INDUSTRY, GREW BY OVER **9%**

ORGANIC IS AN IMPORTANT PART OF THE DIVERSE U.S. AGRICULTURAL LANDSCAPE. THE ORGANIC TRADE ASSOCIATION REPRESENTS OVER 6,500 FARMERS, RANCHERS, HANDLERS, PROCESSORS, DISTRIBUTORS, AND RETAILERS ACROSS THE ORGANIC SUPPLY CHAIN.

LEARN MORE AT WWW.OTA.COM

Organic trade association SINCE 1985

Growth in Demand: Organics

- Retail sales of organic foods $35-40 billion
  - From $3.6 billion in 1997 (Packaged Facts, 2011).
  - The 7-9% growth rate outpaced the 2% growth in conventional groceries
    - Particularly notable given a sluggish economic recovery.
- Globally, organic sales doubled from $25 billion in 2003 to almost $51 billion in 2008,
  - Organic foods are most prominent in high income countries of Europe, and in Japan and the U.S.

Food culture year in review: 2013, the year of disruption

It's that time of year when The Hartman Group takes stock of what we've learned in day-to-day interactions with consumers and views it all through a broader lens—and this year was a doozy.

The year's headlines reflect how disruptive it has been for the food business: Kroger said grocery shoppers became more unpredictable in part because of food-stamp benefit reductions. Wal-Mart reported a decline in packaged food sales and expectations for a flat holiday season. Amazon got more into groceries with a long-awaited expansion of its food home-delivery business—and freaked everyone out with a plan to someday deliver lightweight items using drones. The idea

1. Snacks, the Modern Meal?

2. Social Media Disrupt Food Culture

3. Online Grocery, Still Coming

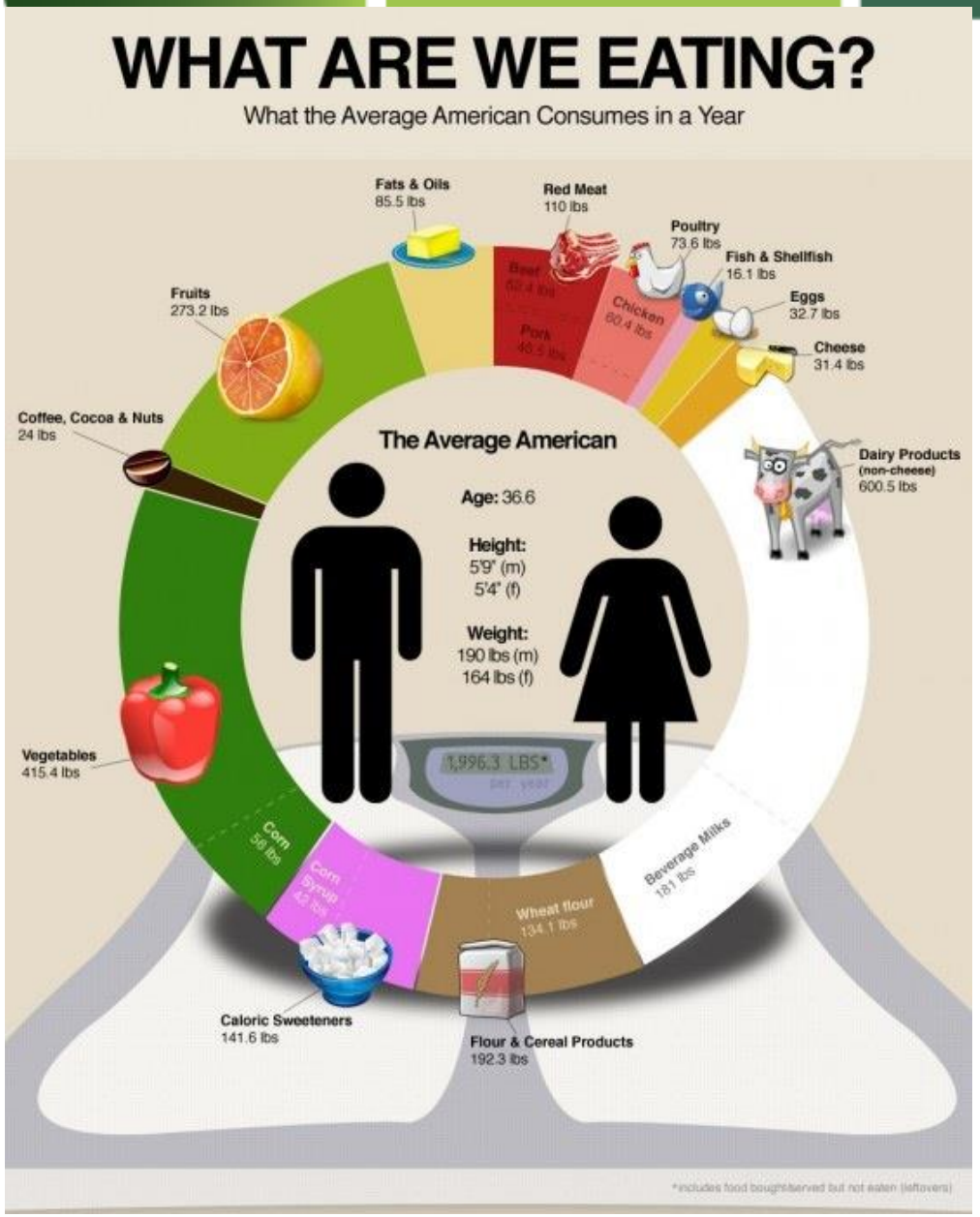
4. It's Not About the Coffee

5. Food Competition Everywhere

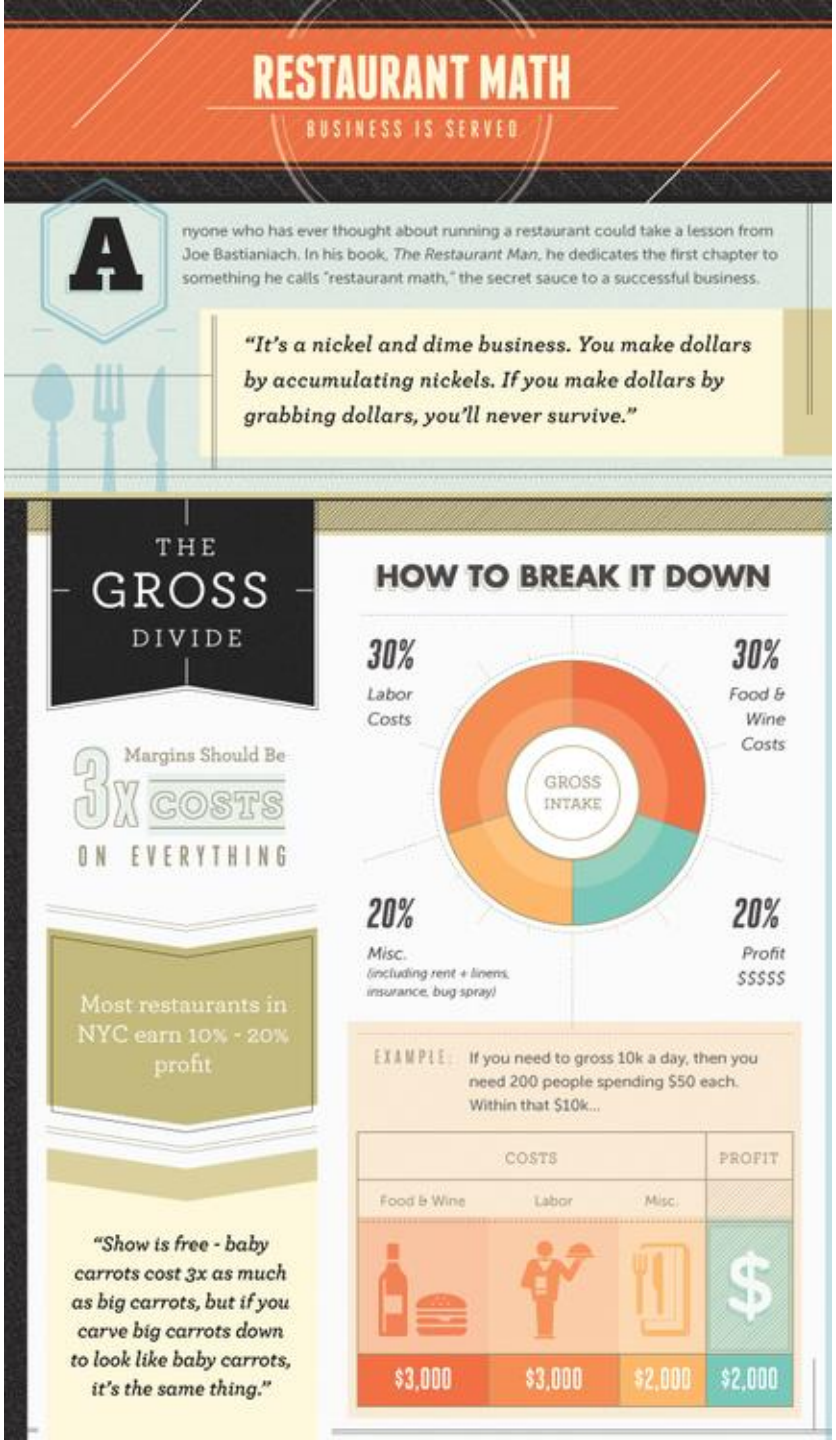
6. Beating Fast Food at Its Own Game

7. Sustainability and the Good Company OR FARM/RANCH

The Hartman Group, 2013

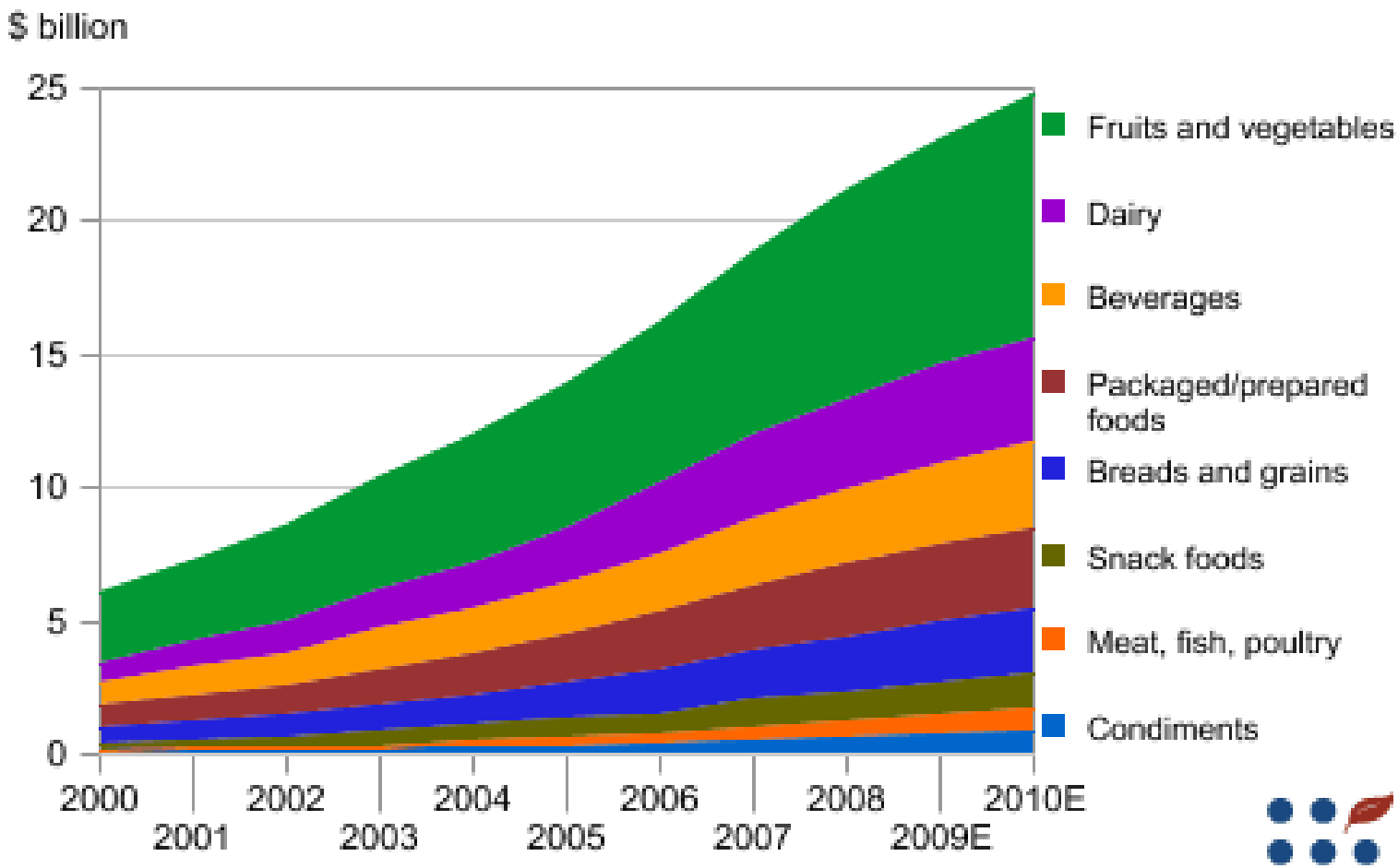


- But when are we eating?
- Where are we eating? Shopping?
- Who is making our food choices?



Food Away from Home

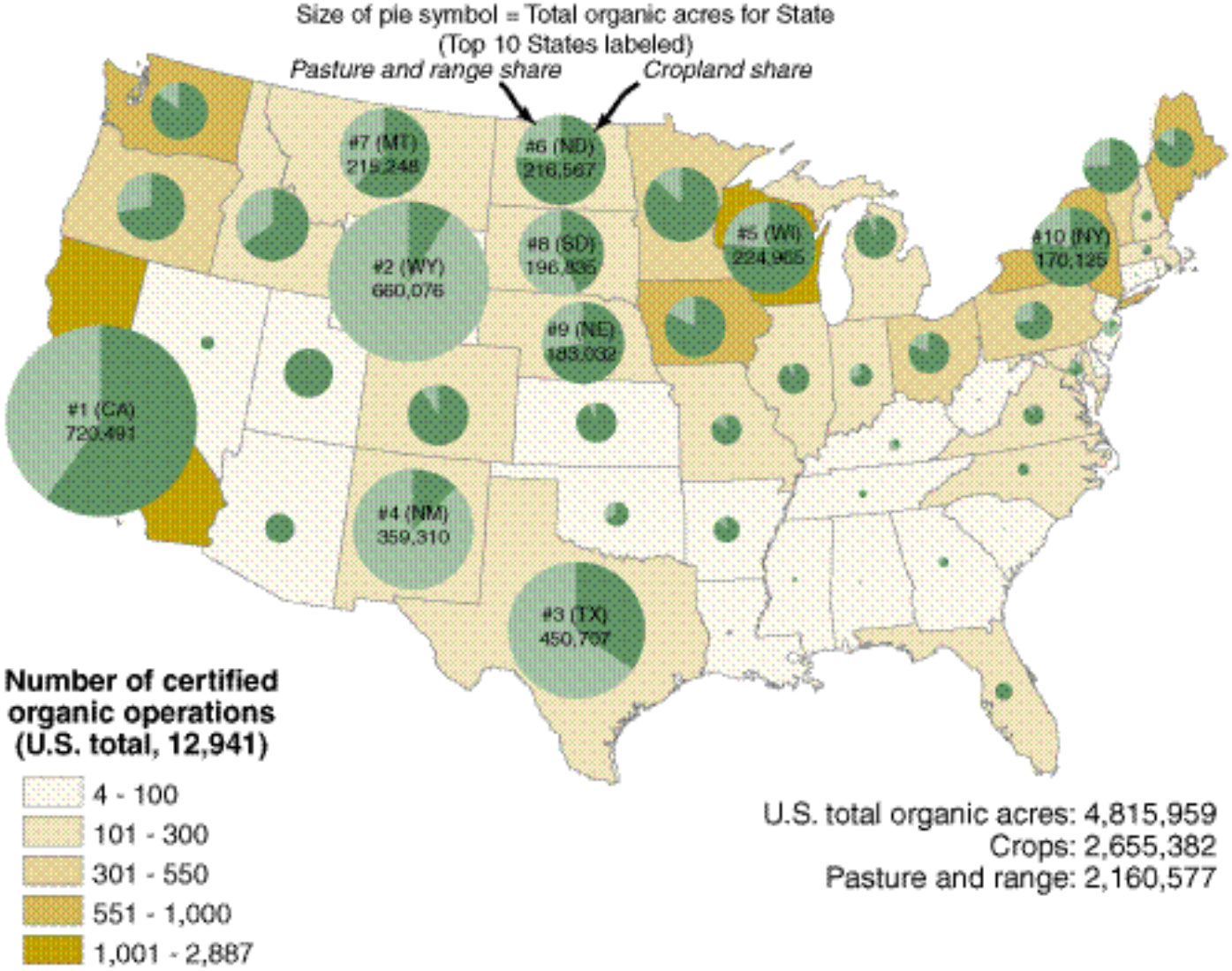
Fruits and vegetables accounted for 37 percent of U.S. organic food sales in 2008



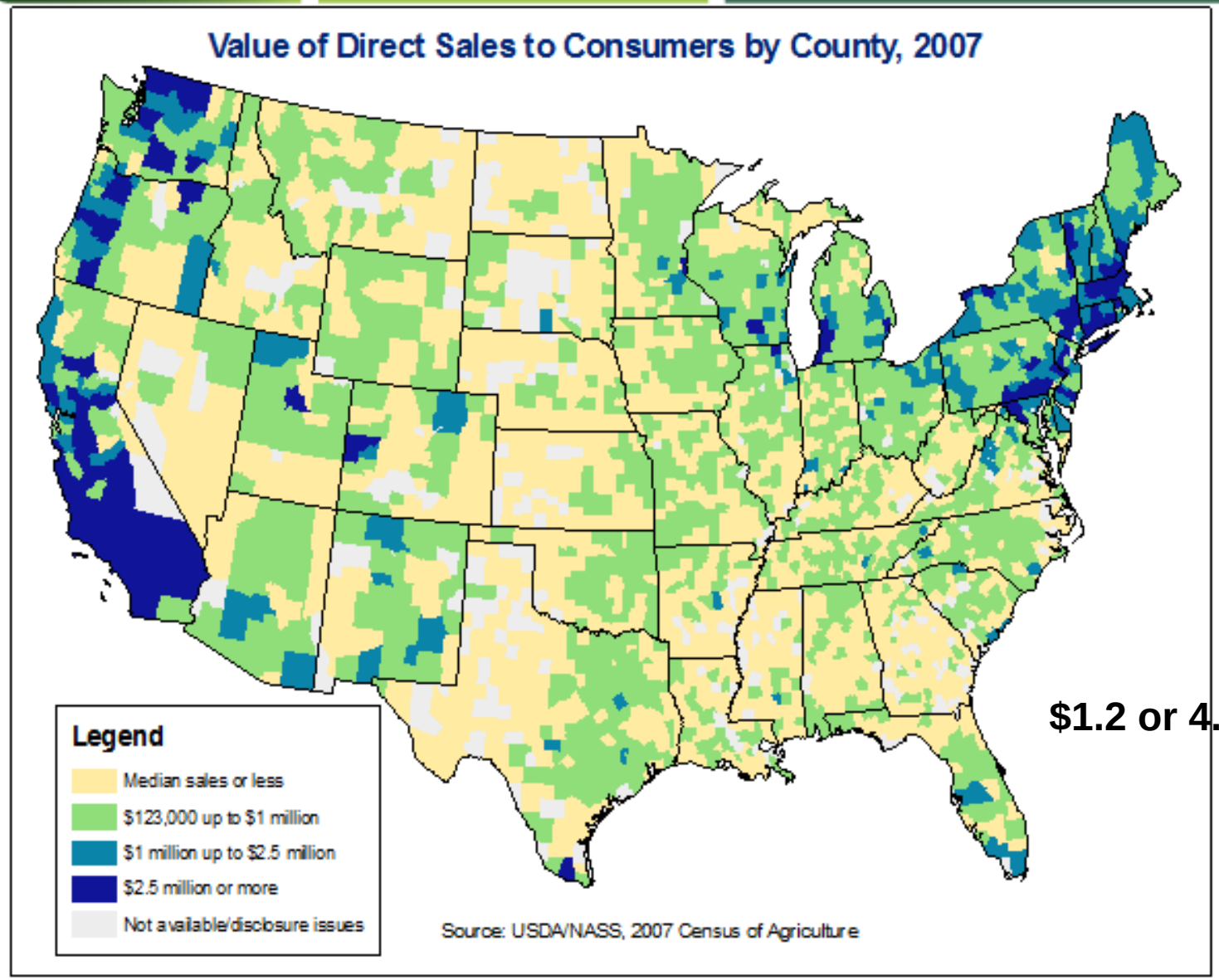
E = Estimate.
Source: Nutrition Business Journal.

ERS

Organic operations accounted for less than 1 percent of total crop acreage in 2008



Source: USDA, Economic Research Service, based on information from



$1.2 or 4.8 billion?

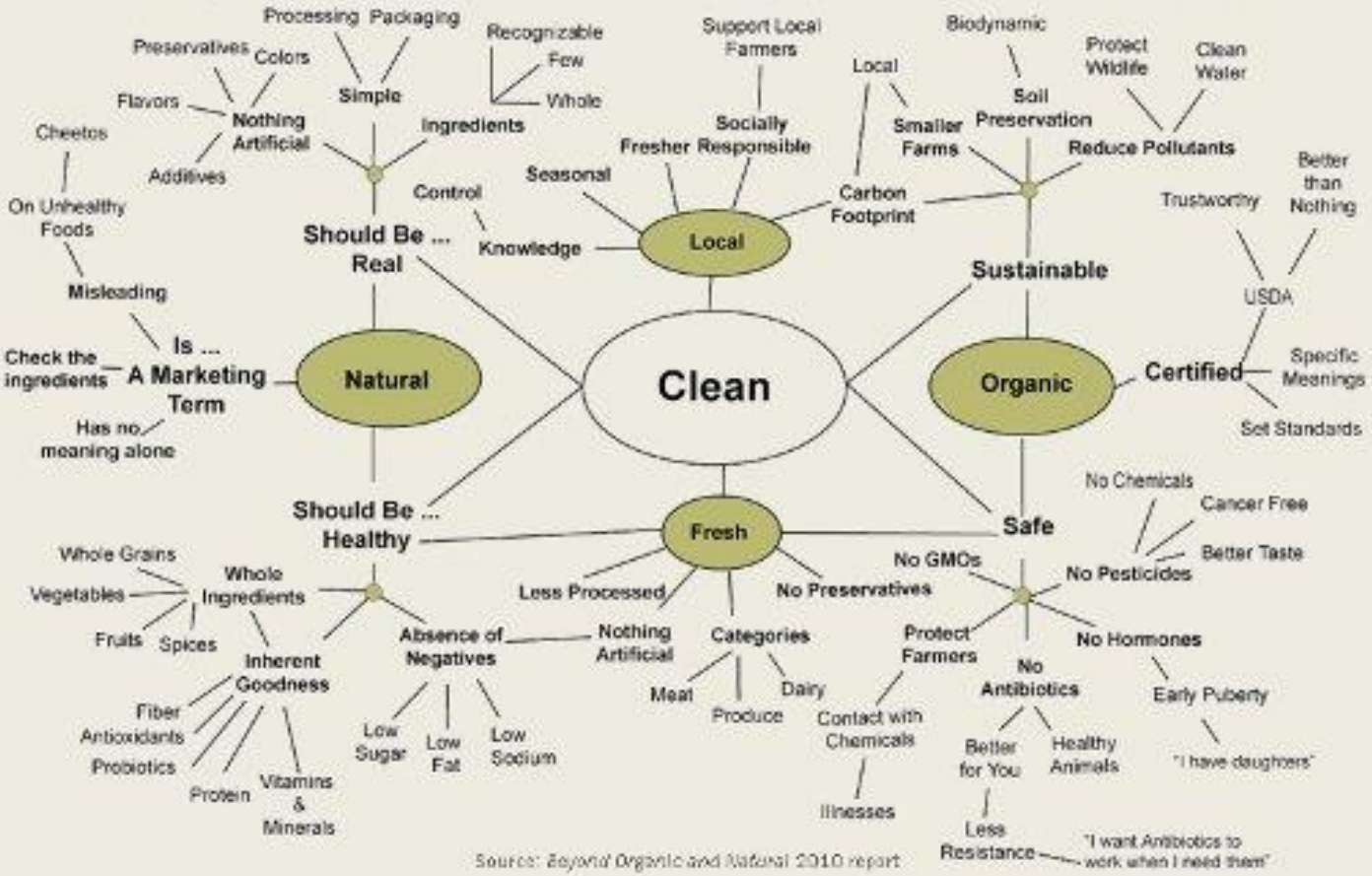
The Challenge

- USDA has historically provided grades and standards as a service to consumers
  - They value information on the quality of foods they purchase
  - Complexity of standards for most food categories has proliferated greatly
  - Not all promoted outcomes of sustainable foods are food-based quality characteristics, so how do marketing program protocols adapt?

hartbeat ACUMEN

BEYOND THE LABEL: WHAT CONSUMERS MEAN BY "CLEAN"

Clean encompasses a variety of attributes. Consumers seek more knowledge about the foods and beverages they purchase and look for products with a wide variety of specific attributes that ladder up to clean. Clean food encompasses a wide variety of attributes that consumers are seeking: clean production (organic, fair trade); clean processing (organic, natural); clean ingredient list (natural).



Source: Beyond Organic and Natural 2010 report

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www.hartman-group.com
blaine@hartman-group.com
425.452.0818

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The New Marketing Landscape?

Sustainable Product Positioning: Food Labels that Provide Sustainability Assurances

USDA ORGANIC

Organic is a labeling term that indicates that the food or other agricultural product has been produced through approved methods that integrate cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity. Synthetic fertilizers, sewage sludge, irradiation, and genetic engineering may not be used.
http://www.ams.usda.gov/AMSv1.0/nop

VALIDUS-PRIVATE, 3rd PARTY LABEL

Validus is a private company That offers comprehensive assessments and certifications that focus on socially-responsible and scientifically-based practices related to animal handling, security, environmental stewardship and worker care/development.
http://www.validusservices.com/

FOOD ALLIANCE

Certifies on a comprehensive set of standards and a voluntary third-party certification program that address sustainability practices (environmental impact, transparent and traceable supply chains, safe and fair working conditions, food product integrity) in agricultural production, processing, and distribution.
http://foodalliance.org/

Certification Programs: An Overview

- Diversity in certification programs
  - Innovating to fit an increasingly diverse set of consumer interests and strategic positions among businesses
  - Positioning varies greatly based on outcomes related to perceived environmental, social, scale and community-oriented nonmarket benefits
  - Programs represent a wide range of government, private and partnership initiatives

SUSTAINABLE LIVESTOCK PROGRAMS

ANIMAL WELFARE

Animal Welfare Approved 's standards were developed in collaboration with scientists, veterinarians, researchers, and farmers as viable farm and ranch management best practices The basic premise of the standards is that animals must be able to behave naturally and be in a state of physical and psychological well-being.
http://www.animalwelfareapproved.org/farmers/

ANIMAL HUSBANDRY AND FEEDING

The American Grassfed Association has standards that focus on three basic criteria; animals were fed a lifetime diet of 100% forage, were raised on pasture, not in confinement, and, were never treated with hormones or antibiotics (a criteria similar to other natural meat standards)

http://www.americangrassfed.org/

SOCIAL AND LOCAL PROGRAMS

STATE-BASED PROMOTIONS

State-funded food branding programs, which are aimed at promoting or identifying State-produced agricultural products, may assist consumers in identifying products from the local food system, but may also promote the "locality" of products from regions known to specialize in certain foods.
Note: Each state has its own Website for these programs, example logos are shown below.

FAMILY FARMS

FamilyFarmed is an Illinois-based nonprofit whose mission is to expand the production, marketing and distribution of locally grown and responsibly produced food. They offer no formal certification, but represent small and mid-size farms using transparent marketing strategies and programs.
http://www.familyfarmed.org/missionvalues/

For More Examples and Information

1. USDA –Agricultural Marketing Service Certification Programs: http://www.ams.usda.gov/
2. Certification and Labeling Considerations for Agricultural Producers, A Western Extension Marketing Committee publication http://ag.arizona.edu/arec/wemc/certification.html

Spaniolo, Lia. 2009. Eco-Label Programs for US Farmers; Eco-Label Programs for Michigan Farmers. Department of Community, Agriculture, Recreation and Resource Studies, Michigan State University (October).

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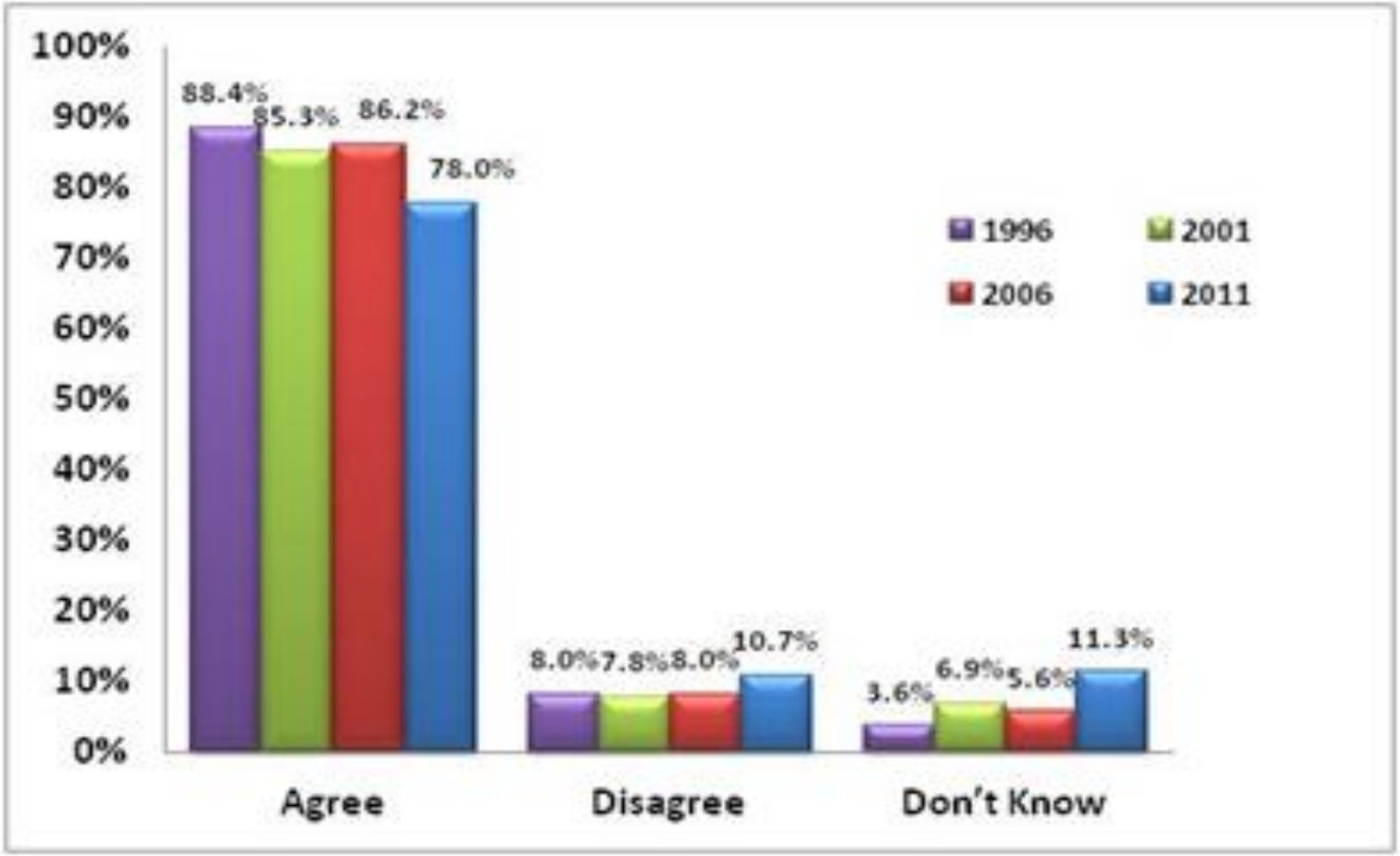
Tensions among Sustainable Segments?

- Organic vs. Local
- Small Organic vs. Corporate Organic?
- Animal Welfare vs. Organic in Animal Products?

Colorado Attitudes about Food and Agriculture

- Public Attitude survey conducted by CSU on behalf of the Colorado Dept of Ag
  - Tracks dynamics of public perceptions since 1996
- Over this long period of time, some key elements have shown broad support and positive attitudes to this industry
  - Role in quality of life, highest and best use of water and land, affordability and safety of food
- Focus today on some dynamic elements

Agriculture provides food at a reasonable price in Colorado



Factors for fresh food purchases

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Product Attribute	% say most important
Freshness	76%
The price	57%
Farm/ranch passed food safety inspection	49%
Supports local economy	38%
Has proven health benefits	37%
Farmers received fair share of profits	34%
Farm/ranch animals treated humanely	34%
Knowing country of origin	32%
Supports maintaining local farm land	31%
Locally grown	30%
Produced without pesticides, hormones or antibiotics	29%
Organically grown	18%

Organic purchases in Boulder County

	Percent
Buy mostly or all organic	37%
Buy same organic and non-organic	19%
Buy mostly or all non-organic	44%

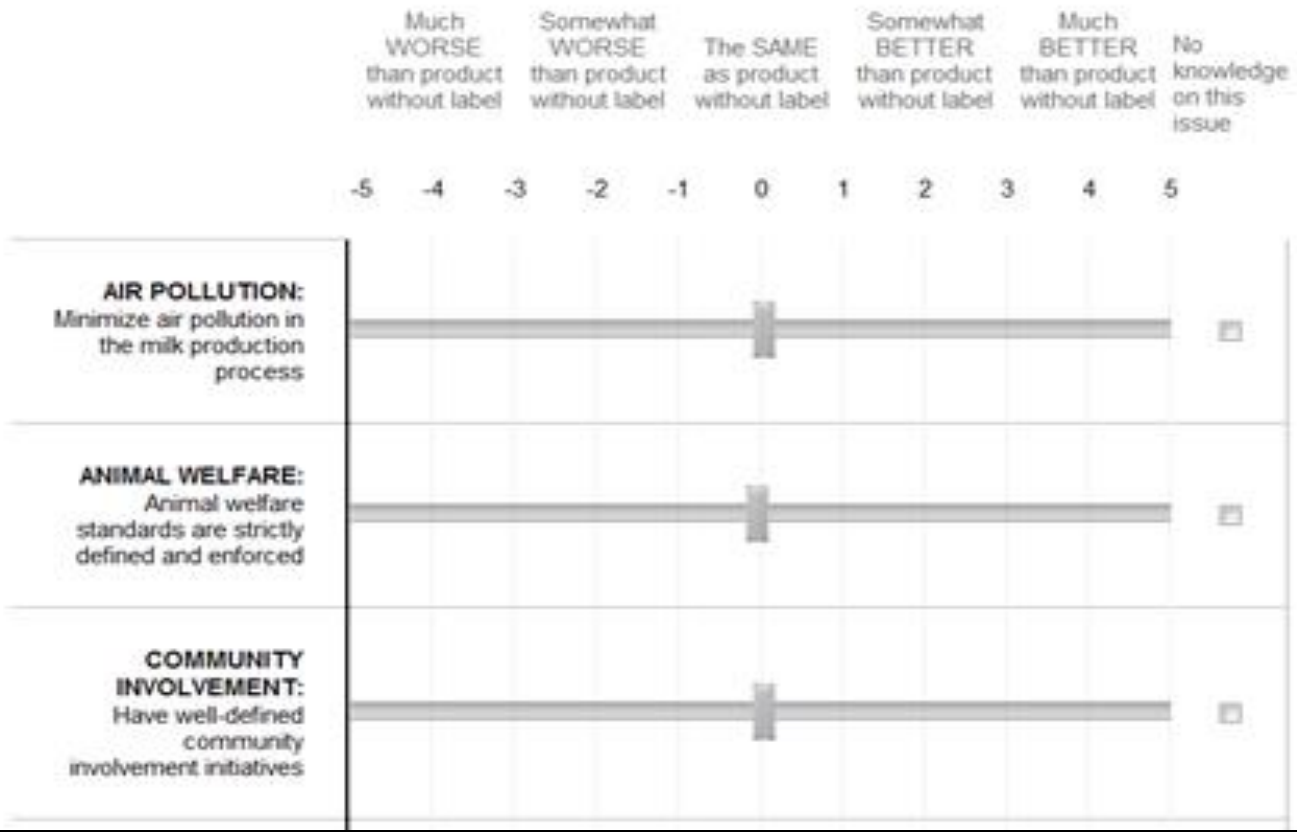
Why not buy organic	Percent
Cost more	72%
No better/no difference	8%
Lack of availability/convenience	3%
Cost and availability	3%

This label indicates that this product is made using organic methods or made with organic ingredients.

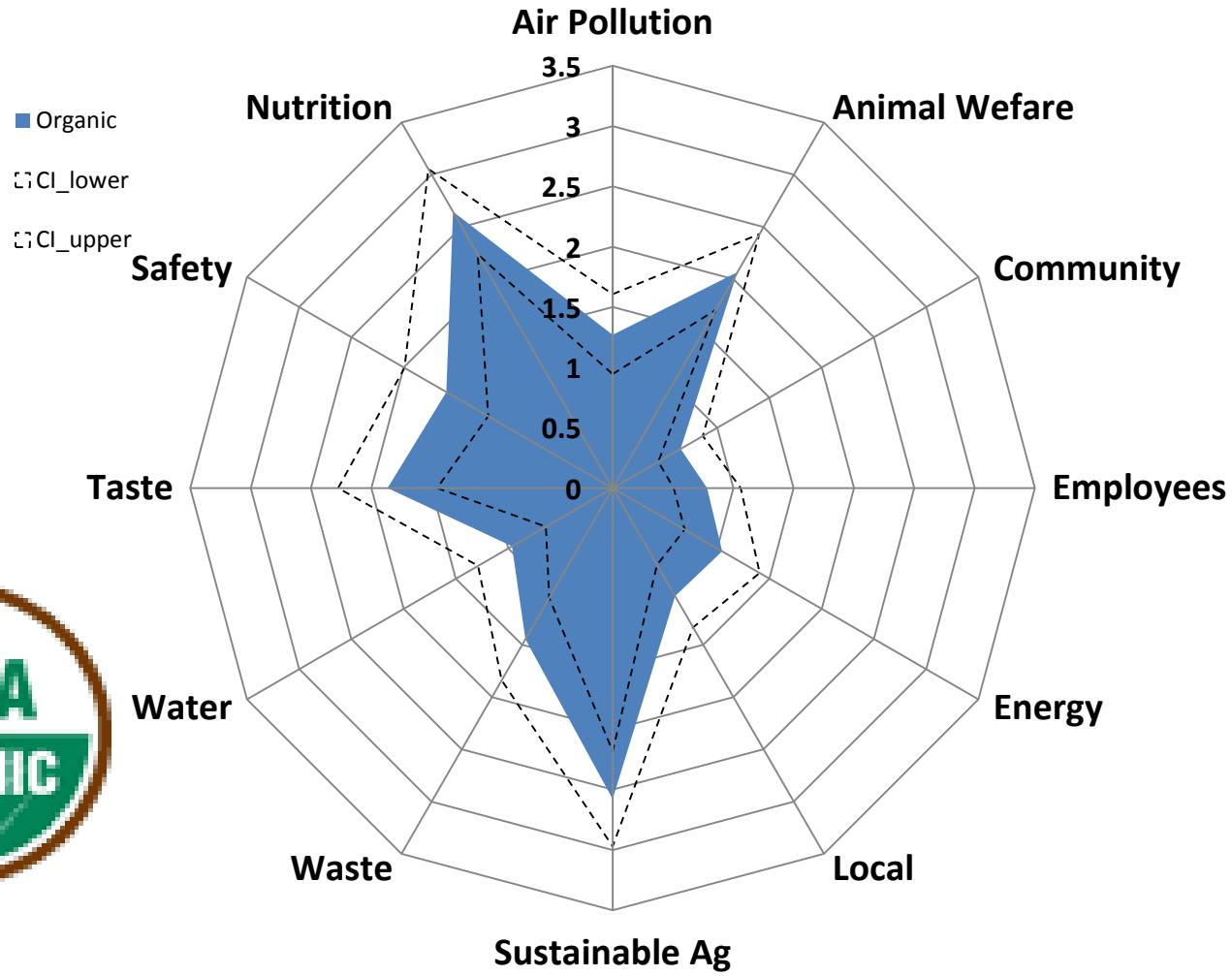
Consider the consequences of producing and consuming a gallon of milk.

In terms of each of the areas listed below, compared to a similar product WITHOUT the label, you expect the product WITH the label to perform BETTER, WORSE, or the SAME:

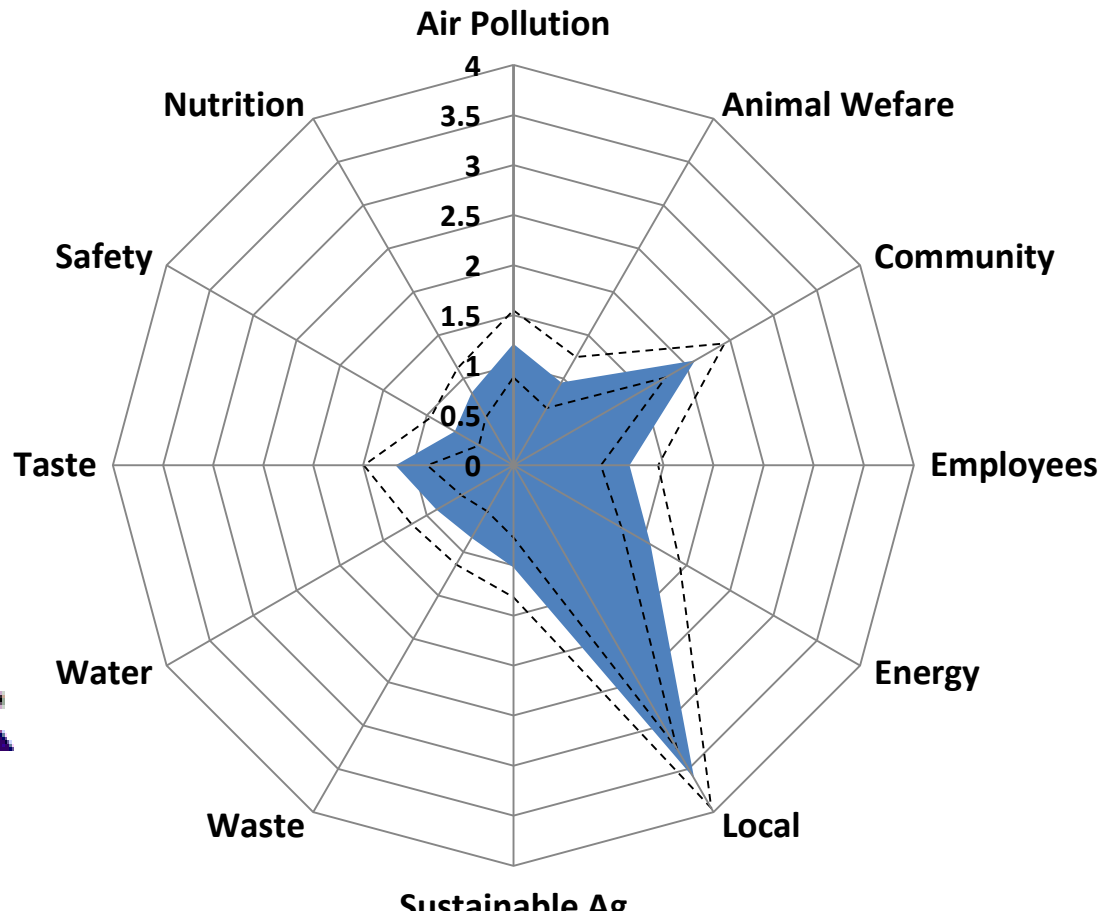
You must provide an answer for each Slider Bar in order to move on.



Perceptual Profiles: Organic



Perceptual Profiles: Colorado Proud



Valuing Food Labels

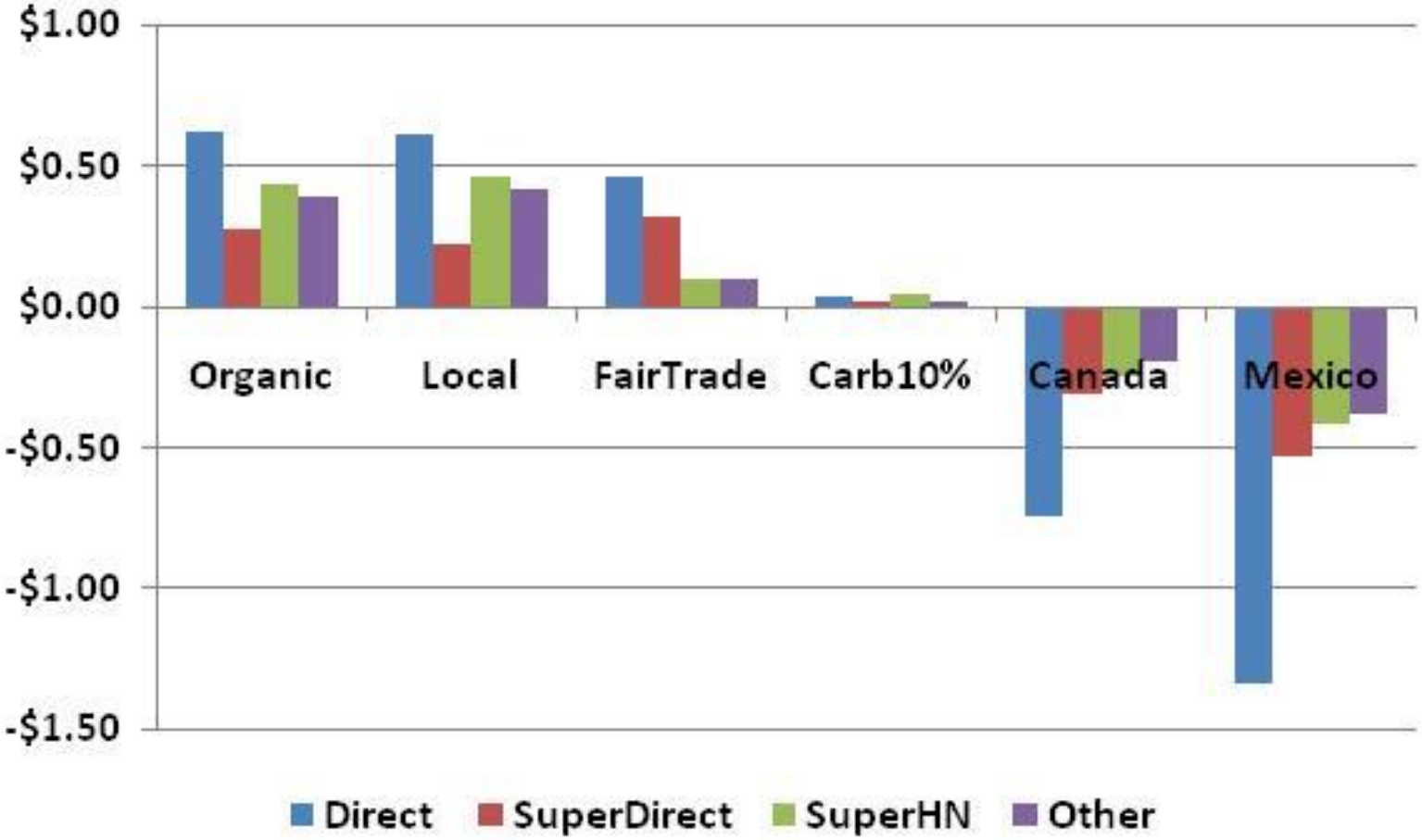
	LEVELS	
ATTRIBUTES	Gala Apples	Red Round Tomatoes
Product Origin	Locally Grown	Locally Grown
	Grown in Washington	Grown in CA/FL
	Product of Chile	Product of Canada
		Product of Mexico
Certified Organic	Uncertified	Uncertified
	USDA Organic	USDA Organic
Certified Fair Trade	Uncertified	Uncertified
	Certified Fair Trade	Certified Fair Trade
Carbon Footprint	60g/lb	100g/lb
	120g/lb	800g/lb
	180g/lb	1500g/lb
Unit Price	$1.49, $1.89, $2.29, $2.69, $3.09, $3.49	$1.49, $1.89, $2.29, $2.69, $3.09, $3.49

Sample Choice Set

Apple 1	Apple 2
$2.69/lb	**$3.49/lb**
Product of Chile	Locally Grown
USDA ORGANIC, Carbon 60g/lb	Fair Trade, Carbon 120g/lb
I will buy this apple. ☐	I will buy this apple. ☐

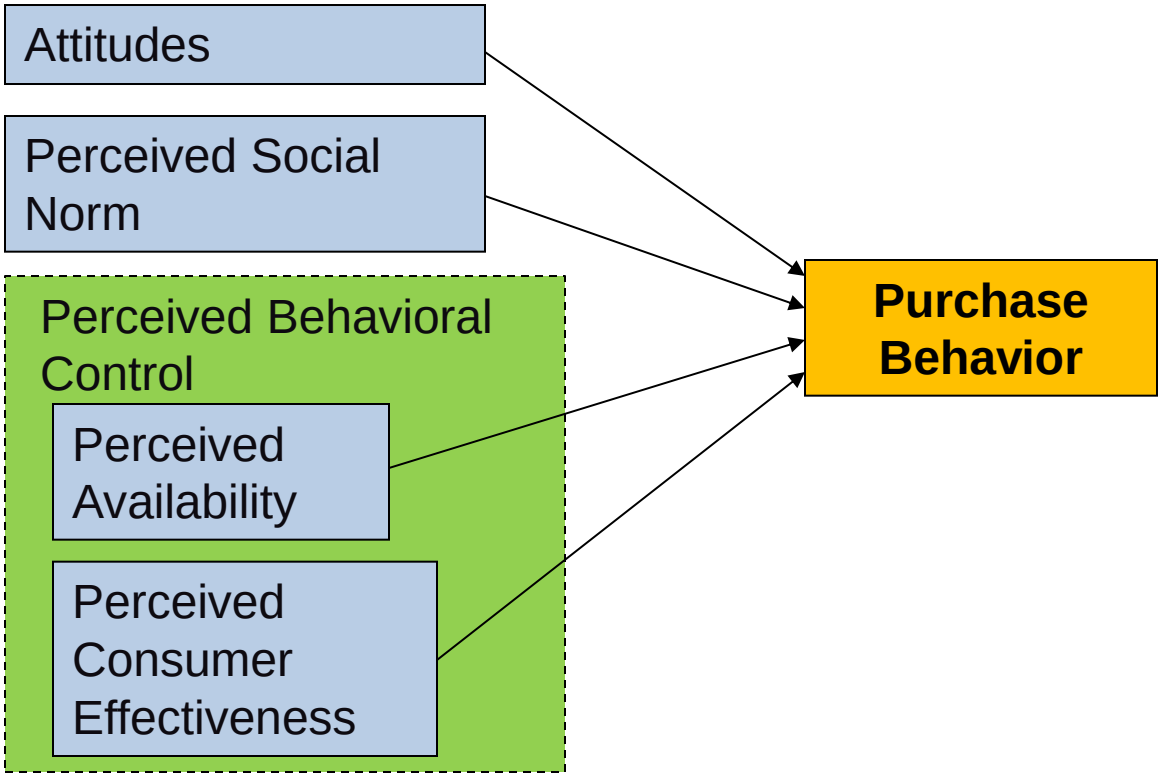
Neither. ☐

Median WTP Comparisons (Tomatoes)

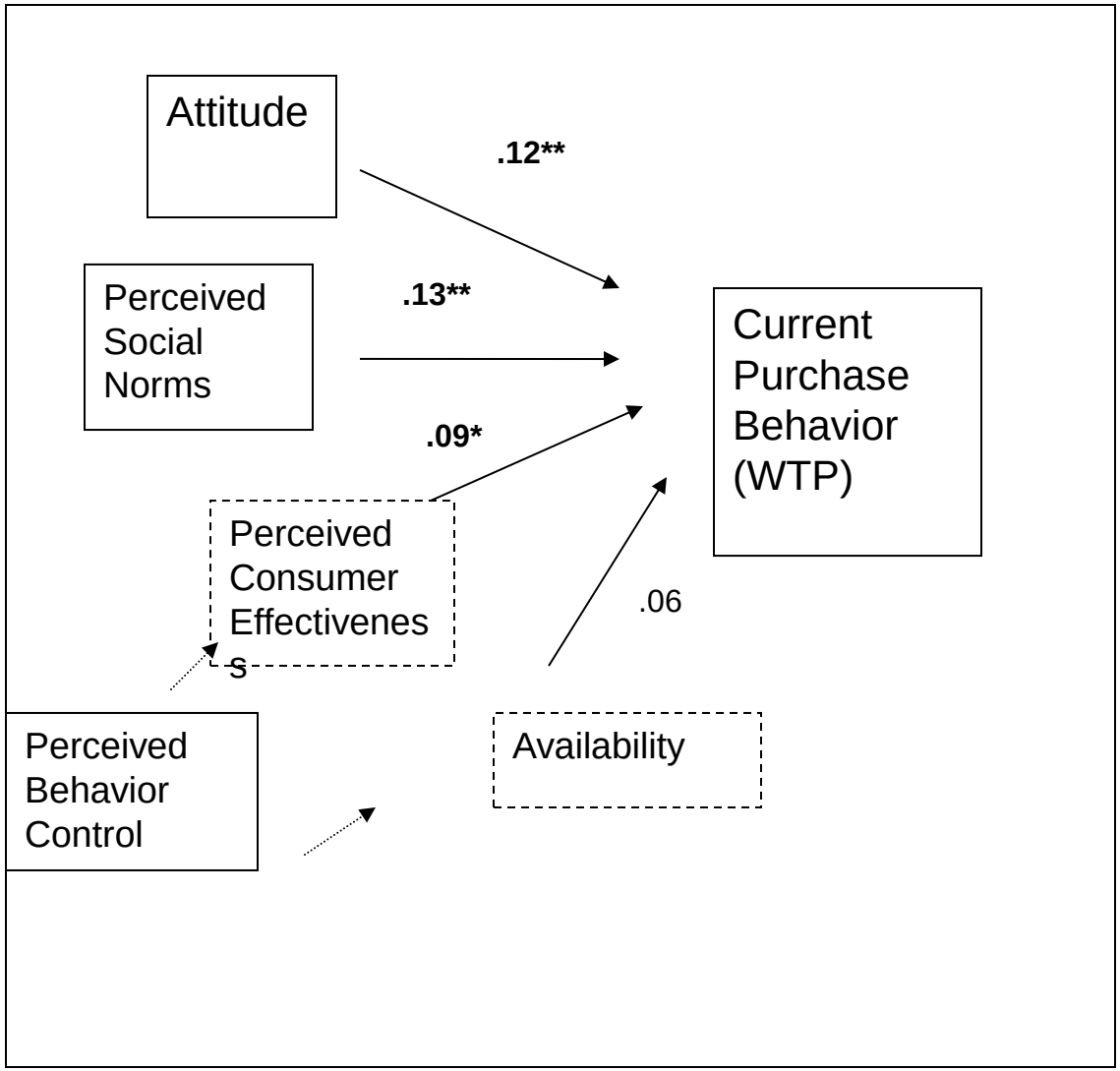


Theory of Planned Behavior (TPB)

- Fishbein and Ajzen 1975; Conner and Armitage 2002



What Does Consumer Psychology Say?



Dimension	Mean
Health	5.43
Impact local economy	5.08
Positive effect on society	4.74
Positive impact on environment	4.33
Statement for social fairness	4.09

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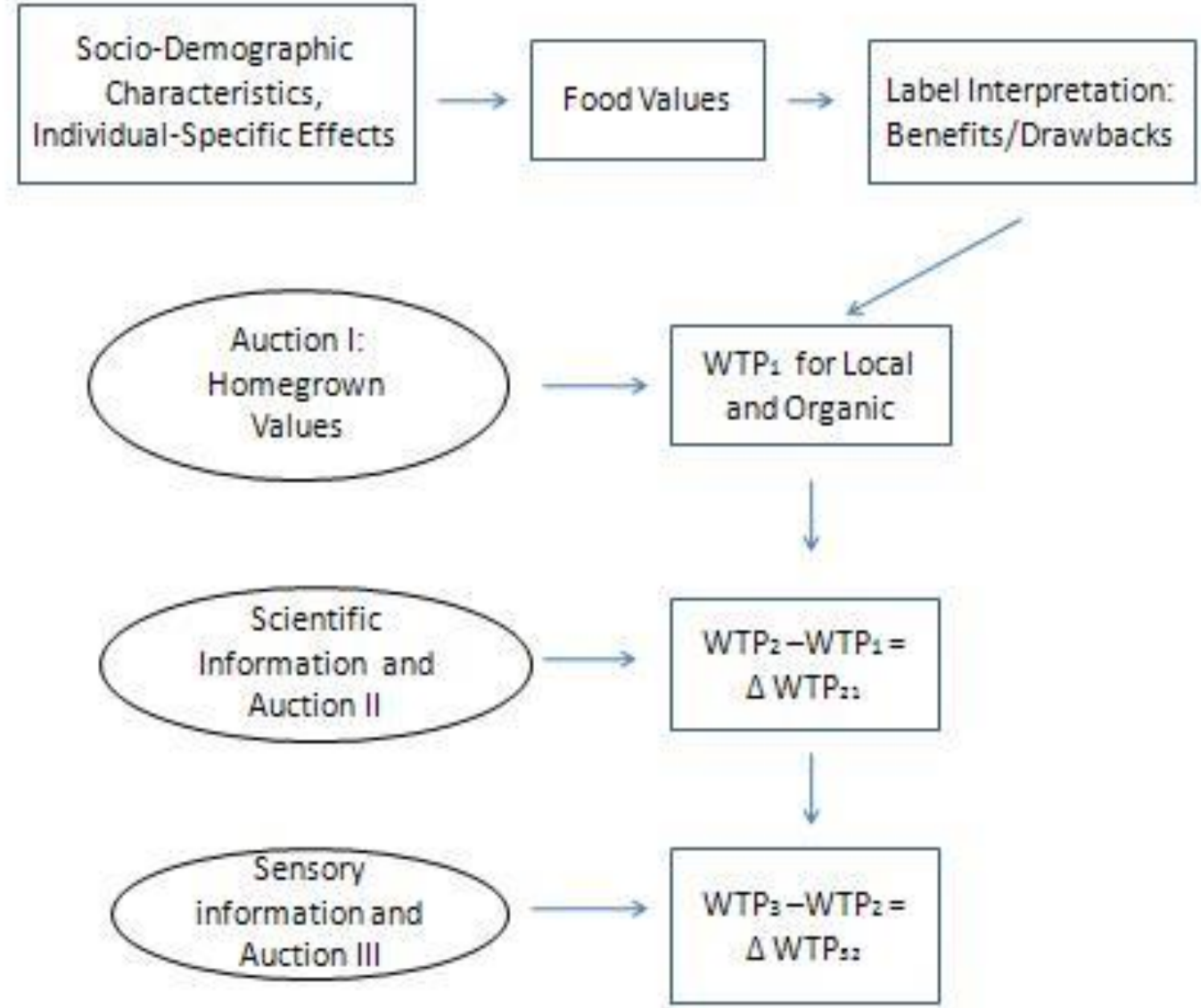
Integrating Sensory Analysis in a Valuation Study of Credence Attributes:

Joint Sensory and Economic Analysis Session

Dawn Thilmany McFadden, Marco Costanigro and Stephan Kroll
Colorado State University

Food Distribution Research Society


Socio-Demographic Characteristics, Individual-Specific Effects
Food Values
Label Interpretation: Benefits/Drawbacks
Auction I: Homegrown Values
WTP1 for Local and Organic
Scientific Information and Auction II
WTP2 – WTP1 = Δ WTP21
Sensory information and Auction III
WTP3 – WTP2 = Δ WTP32

Measuring Attitudes

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Table 3: Food System Perception Questions (1 = Strongly Disagree; 9 = Strongly Agree)

Statement	Definition	Mean
1	The environmental impact of fruit and vegetables is greater for conventional than for organic produce.	5.95 (2.20)[a]
2	Eating organic fruits and vegetables represents a lesser health risk than eating conventional fruits and vegetables.	6.27 (2.23)
3	Locally-grown produce represents a lower risk to climate change because the carbon footprint from transportation of the produce is lower.	6.87 (2.03)
4	There are more credible assurances about produce safety direct from local farmers than for other stakeholders in the food system (US govt. agencies, food distributors, retailers).	5.28 (2.03)
5	I trust the government agencies responsible for food safety in the United States.	5.21 (2.07)
6	Pesticide residues on fruits and vegetables are at a safe level if they meet US government standards.	4.39 (2.04)

Note: Number of observations = 109

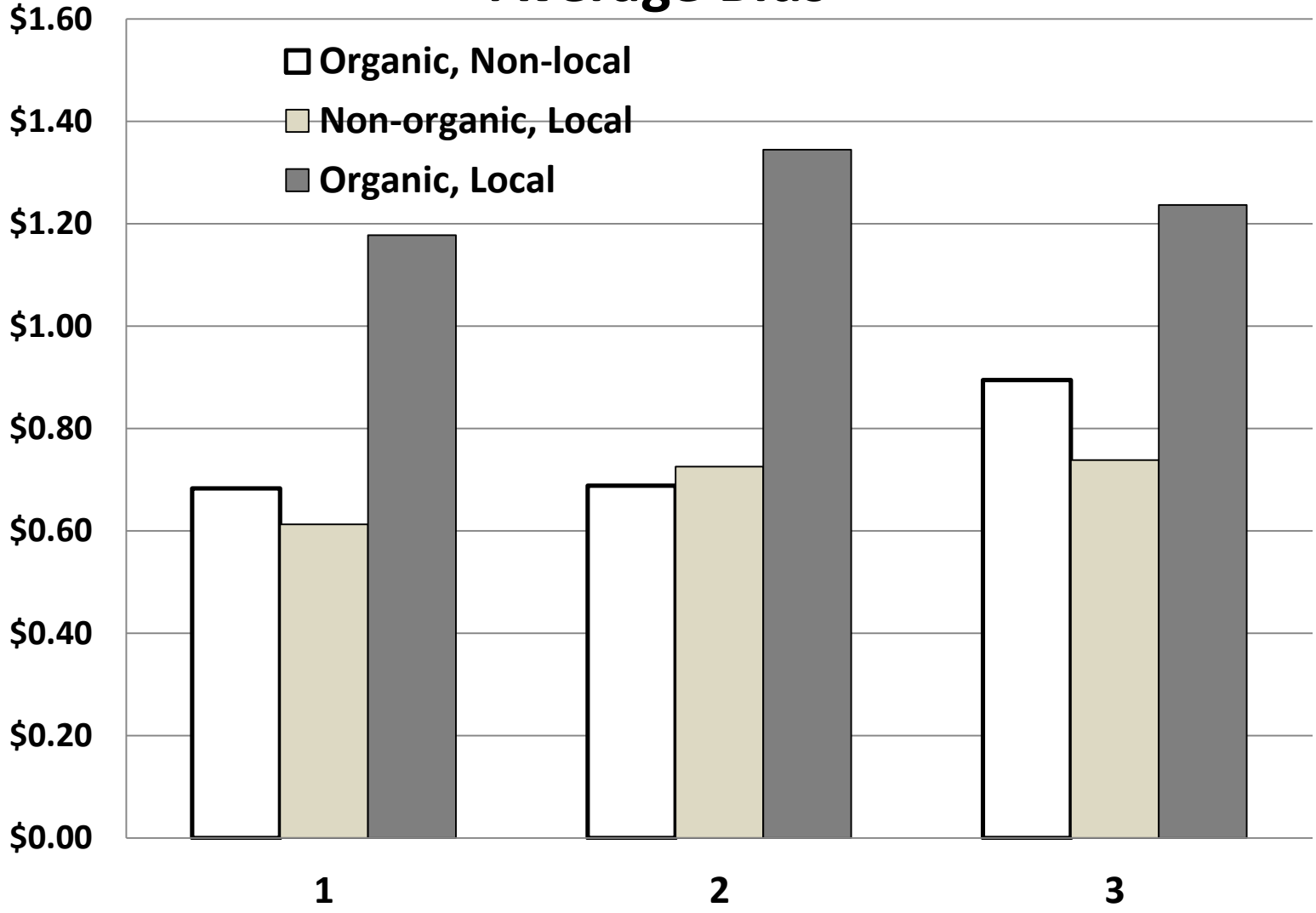
[a] Numbers in parentheses are standard deviations

NN	NO	LO	LN

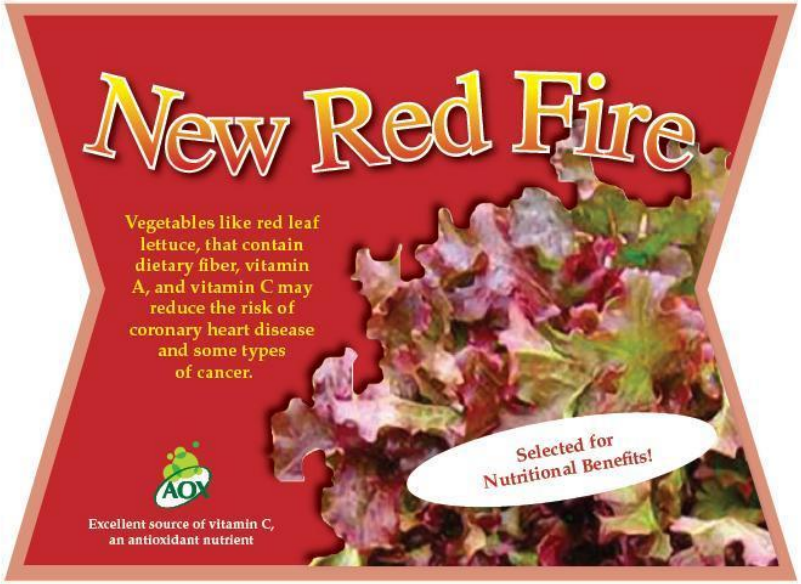
NN = Non-local (~1500 miles), Non-organically grown
NO = Non-local, Organically grown (USDA certified)
LN = Local (<300 miles), Non-organically grown
LO = Local, Organically grown

Figure 1. Growing location and production method of Gala Apples.

Average Bids



PRICE: $2.99



PRICE: $2.99

Organic Label and Claims

- Respondents **differentiate** between products on the basis of label claims
  - The non-specific claim of reducing risk of a human health condition is the **most highly valued** stand-alone attribute
- Bundling of attributes may **add or subtract** value depending on the specifics
  - There is **positive correlation** between valuation of nutritional attributes and organic attributes
- Valuation of claims **varies significantly** across individuals

REVIEW | Annals of Internal Medicine

Are Organic Foods Safer or Healthier Than Conventional Alternatives?

A Systematic Review

Crystal Smith-Spangler, MD, MS; Margaret L. Brandeau, PhD; Grace E. Hunter, BA; J. Clay Bavinger, BA; Maren Pearson, BS; Paul J. Eschbach; Vandana Sundaram, MPH; Hau Liu, MD, MS, MBA, MPH; Patricia Schirmer, MD; Christopher Stave, MLS; Ingram Olkin, PhD; and Dena M. Bravata, MD, MS

Background: The health benefits of organic foods are unclear.

Purpose: To review evidence comparing the health effects of organic and conventional foods.

Data Sources: MEDLINE (January 1966 to May 2011), EMBASE, CAB Direct, Agricola, TOXNET, Cochrane Library (January 1966 to May 2009), and bibliographies of retrieved articles.

Study Selection: English-language reports of comparisons of organically and conventionally grown food or of populations consuming these foods.

Data Extraction: 2 independent investigators extracted data on methods, health outcomes, and nutrient and contaminant levels.

Data Synthesis: 17 studies in humans and 223 studies of nutrient and contaminant levels in foods met inclusion criteria. Only 3 of the human studies examined clinical outcomes, finding no significant differences between populations by food type for allergic outcomes (eczema, wheeze, atopic sensitization) or symptomatic *Campylobacter* infection. Two studies reported significantly lower urinary the estimate for phosphorus; phosphorus levels were significantly higher than in conventional produce, although this difference is not clinically significant. The risk for contamination with detectable pesticide residues was lower among organic than conventional produce (risk difference, 30% [CI, −37% to −23%]), but differences in risk for exceeding maximum allowed limits were small. *Escherichia coli* contamination risk did not differ between organic and conventional produce. Bacterial contamination of retail chicken and pork was common but unrelated to farming method. However, the risk for isolating bacteria resistant to 3 or more antibiotics was higher in conventional than in organic chicken and pork (risk difference, 33% [CI, 21% to 45%]).

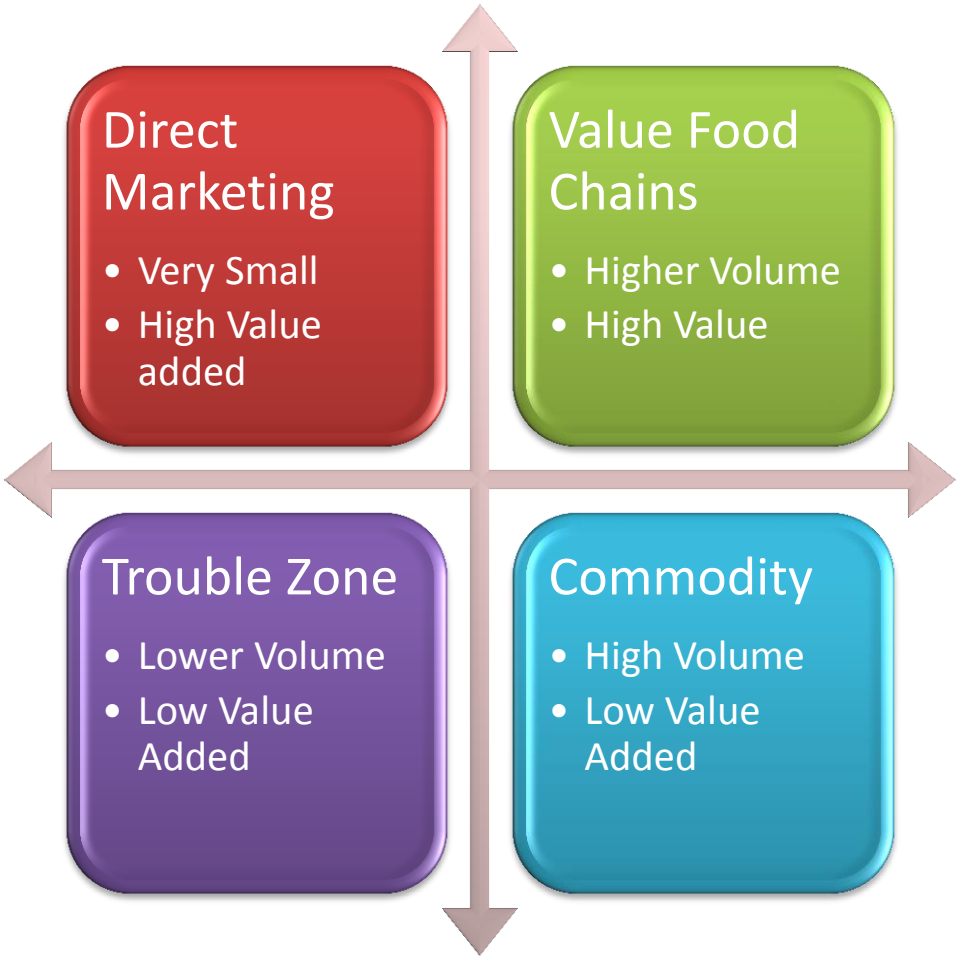
Limitation: Studies were heterogeneous and limited in number, and publication bias may be present.

Conclusion: The published literature lacks strong evidence that organic foods are significantly more nutritious than conventional foods. Consumption of organic foods may reduce exposure to pesticide residues and antibiotic-resistant bacteria.

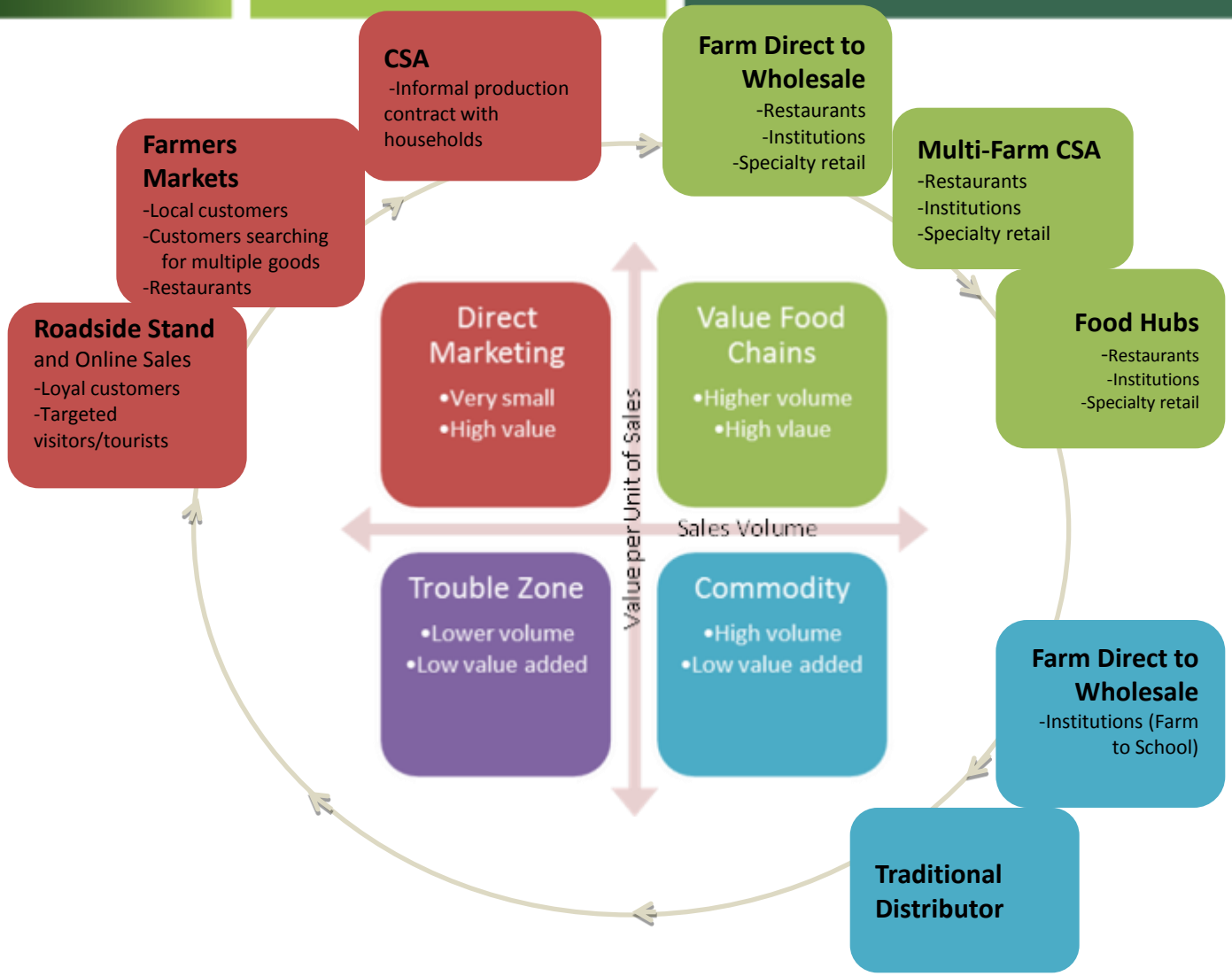
Opportunities

- There is no longer an “average” consumer
  - Many different farm and food business models can succeed if targeted well
- Consumer attitudes and behavior suggest some segments
  - Shorter supply chains give some assurances
  - Third party certification gives some confidence
- Consumer activism requires clear outcomes

A Typology of Farms



Modified from Stephenson, Ag of the Middle


CSA
-Informal production contract with households
Farm Direct to Wholesale
-Restaurants
-Institutions
-Specialty retail
Multi-Farm CSA
-Restaurants
-Institutions
-Specialty retail
Food Hubs
-Restaurants
-Institutions
-Specialty retail
Farm Direct to Wholesale
-Institutions (Farm to School)
Traditional Distributor
Roadside Stand and Online Sales
-Loyal customers
-Targeted visitors/tourists
Farmers Markets
-Local customers
-Customers searching for multiple goods
-Restaurants
Direct Marketing
•Very small
•High value
Value Food Chains
•Higher volume
•High vlaue
Trouble Zone
•Lower volume
•Low value added
Commodity
•High volume
•Low value added
Value per Unit of Sales
Sales Volume

The New Marketing Landscape?