

Imperial College
London

The Green Train has Left the Station: All Aboard?!

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Seminar and Discussion Day on Environmental
Foot-Printing from the Farm to Fork

Hilton Garden Inn, Leduc, Alberta

Monday, March 12th, 2012

Worried About Green Issues? More or Less!

- There's MORE:
 - Population 9 billion by 2050 with higher incomes
 - Meat- and dairy-based diets (70% more food by 2050)
 - Producing more GHG emissions from agriculture
 - Global warming and extreme climate events
 - Competition for grains and oilseeds (food versus fuel)
 - Under- and over-nourished consumers
 - Food wastage in developed and emerging countries
 - Countries focusing on food security (-ve trade impact)
 - Consumers, governments, NGO's, food industry, our children concerned about food sustainability issues

Worried About Green Issues? More or Less!

- And, globally, there's LESS:
 - Water (75% global water usage is in agriculture)
 - Land available for agriculture (10% less by 2050)
 - Fossil fuels (if not “peak” oil, higher cost oil)
 - Nutrients for agriculture (fewer locations/owners)
 - Public investment in agricultural R&D
 - Food stocks

We need to produce more food, from less resources with lower impact on the environment using every scientific and management tool in the box. OK?!

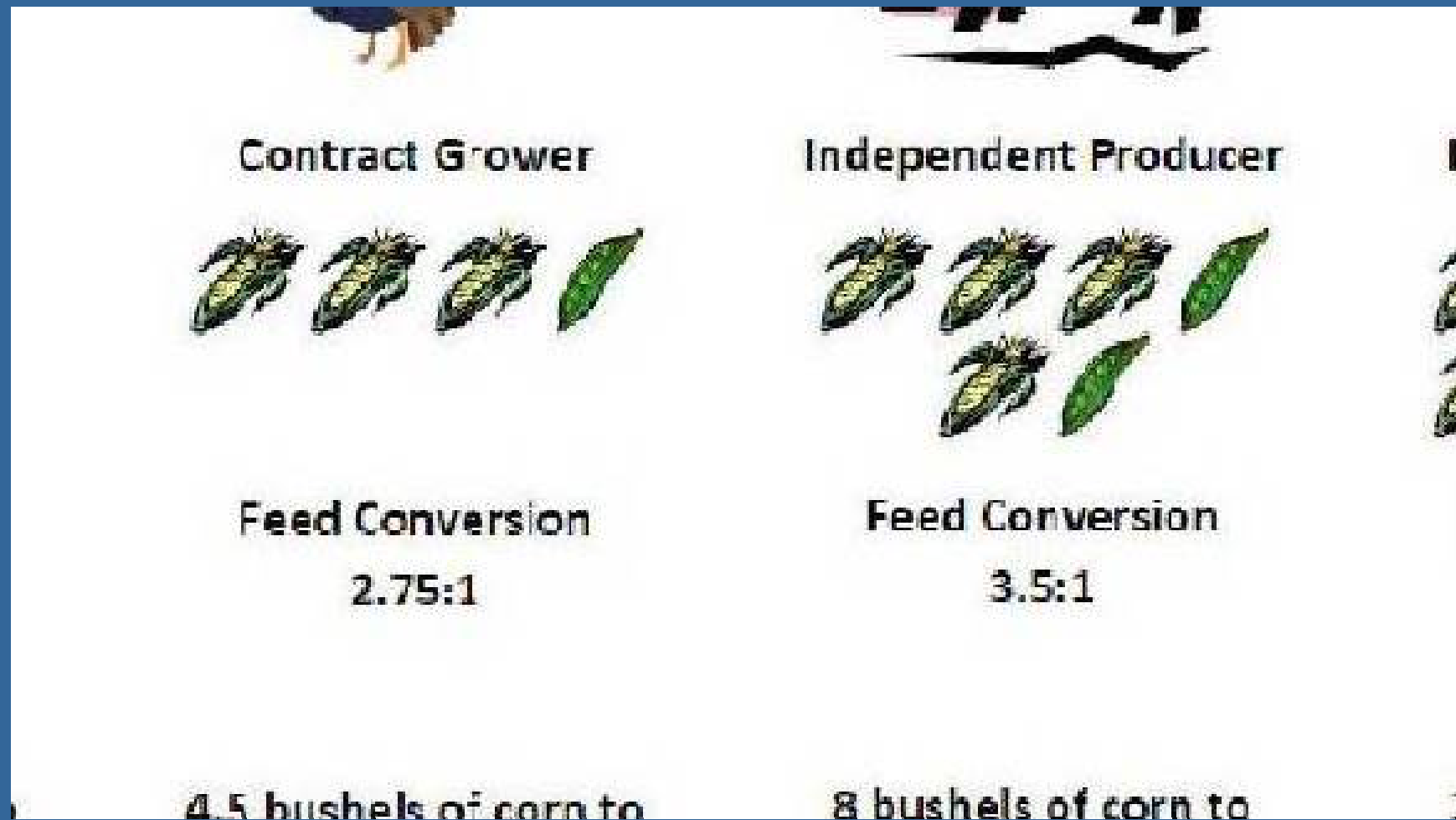
World Population: Who's Going Up and Who's Going Down?

	2010	2030	2050
	<i>- billion -</i>		
World	6.9	8.2	9.0
Africa	1.0	1.5	2.0
Asia	4.1	4.8	5.1
Europe	0.7	0.7	0.7
LAC*	0.6	0.7	0.8
North America	0.3	0.4	0.5
Oceania	0.04	0.04	0.05

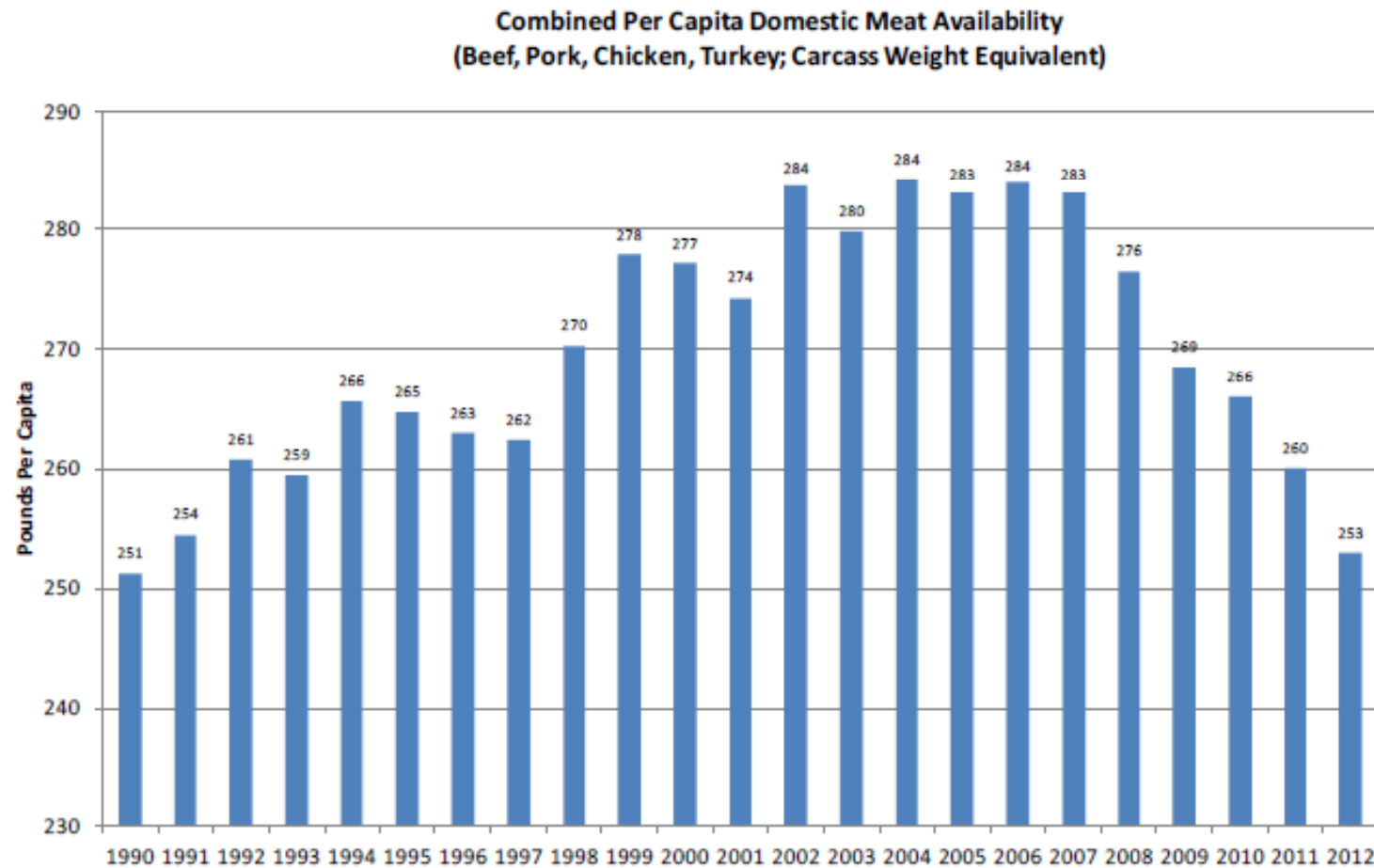
*Latin America & Caribbean

Source: UN (population scenario planning)

The Impact of Higher Grain-Fed Meat Consumption on Demand for Feed Grains

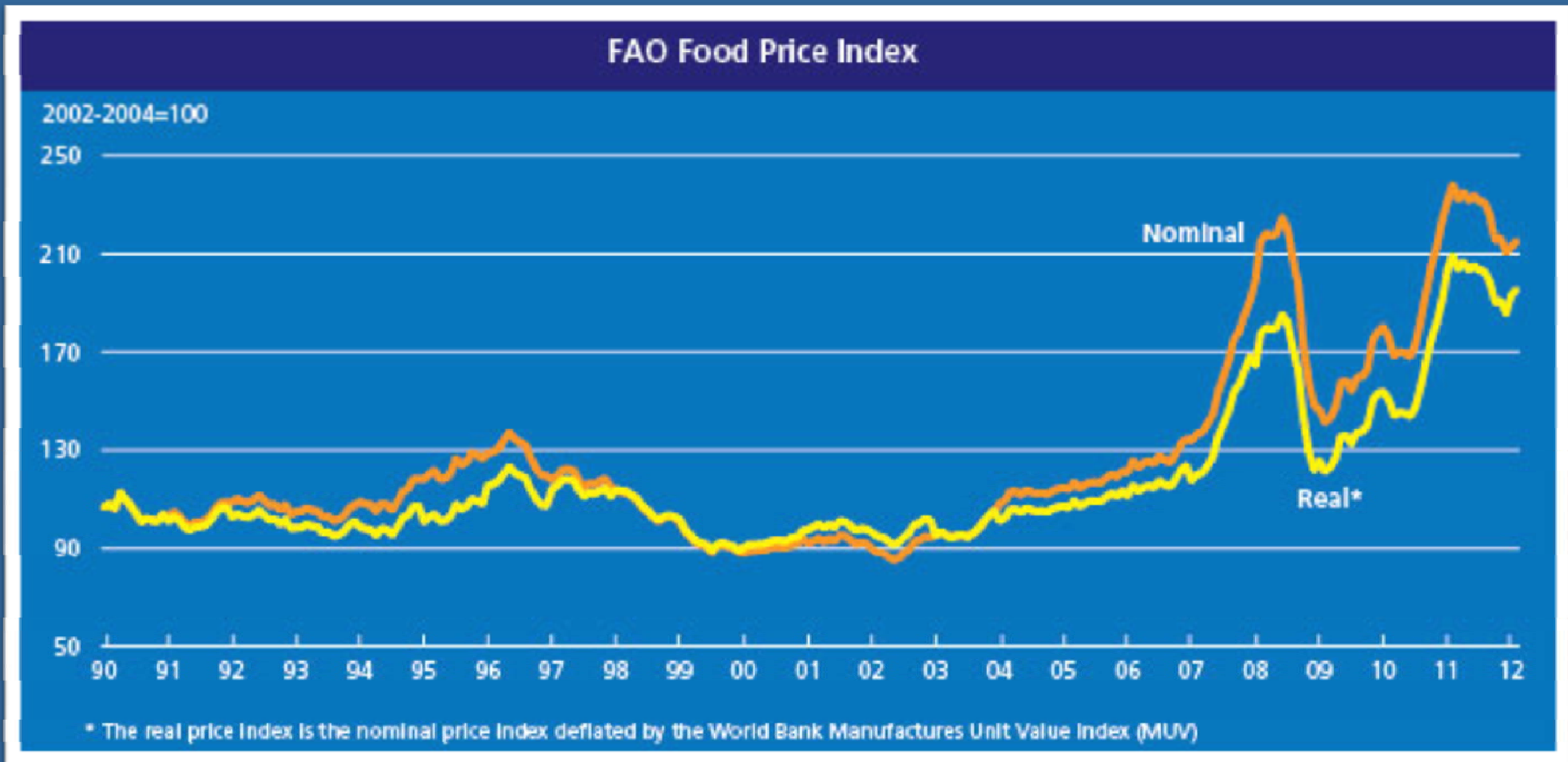


U.S. Land-Based Meat Protein Availability, 1990-2012



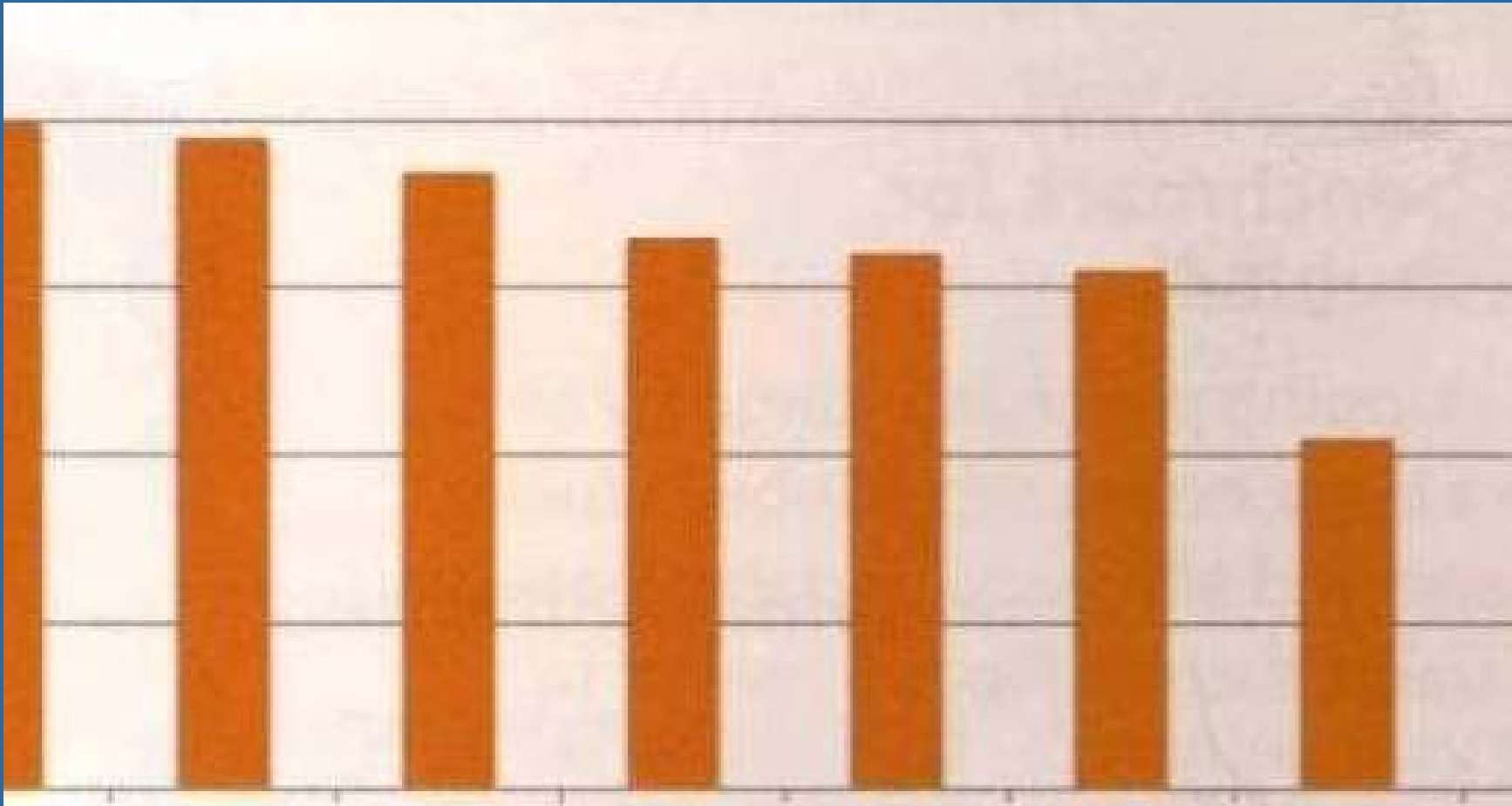
Source: Historical Actual Data – Source, USDA
2011 and 2012 Forecast by Robert A. Brown, Inc., January 25, 2011

FAO Global Food Price Index: 1990 to 2012



Source: FAO

Importance of Food in the Consumer Price Index, Selected Countries, 2011





Tesco Beef Lasagne
1.2kg

BEEF
LASAGNE

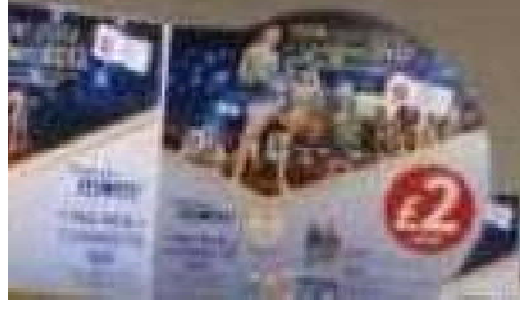
£3.95
£3.5



Young's
CHIP SHOP
4 Large Cod Fillets
with 200ml gravy sauce

£3.50
£3

Young's Chip Shop Cod Fillets 1.47kg



£2

64p

£40 today

£5 OFF

next week's
£40 shop*



A helping

Sainsbury's
**BRAND
MATCH**



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Sainsbury's
**BRAND
MATCH**

Values: The Other Half of the Equation



PRICE



PROMOTIONS



ETHICS

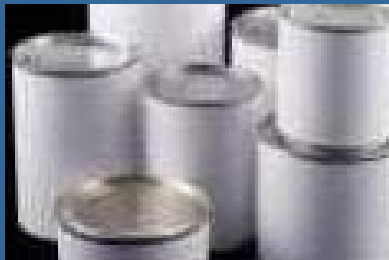


SUSTAINABILITY

VALUE



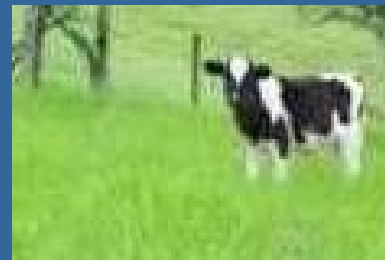
VALUES



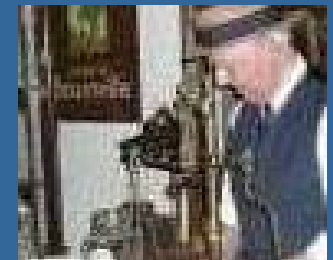
PACK SIZE



PERFORMANCE



PROVENANCE



HERITAGE

Sustainability as Lifestyle Choice and Economic Driver



Carbon emissions & energy consumption



Social sustainability



Environmentally friendly packaging



Customer communication



Packaging & waste reduction

Consumer Trends: Migration to the Poles



Industrial

“Feed the Family Food”

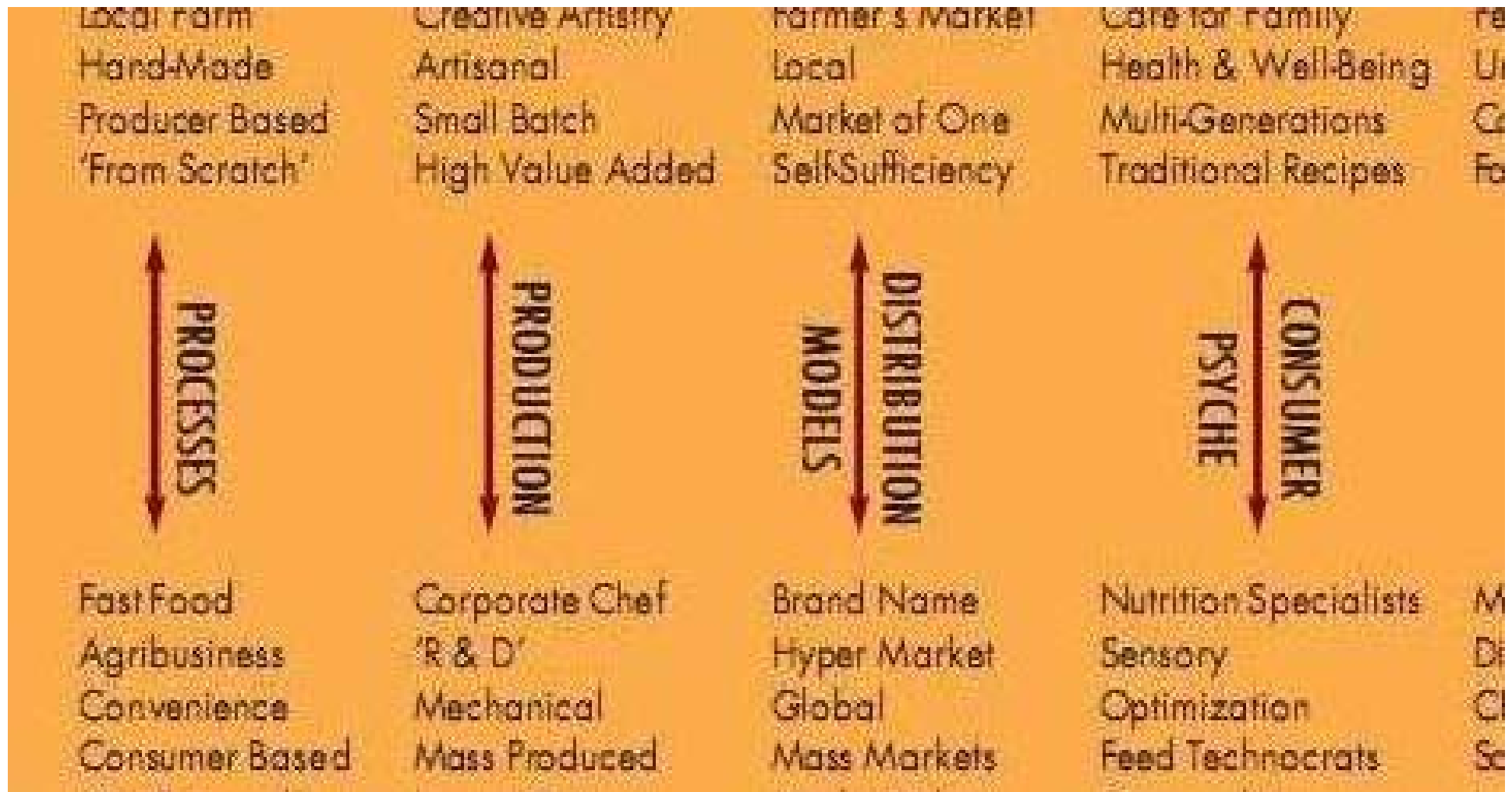
Global
High Tech
Drudge/Chore
Consumer Customer
New and Improved
Ready-to-Eat
Fast Food
Fuel Food
Just Me
Low Price
Good For You
All Year
Intensive

Artisanal

“Experience & Story Food”

Local
High Touch
Leisure/Experience
Citizen Customer
Traditional
Natural/Unprocessed
Slow Food
Story Food
Friends/Family
Premium Price
Naughty but Nice
Seasonal
Extensive

The “Good Guys”



The “Bad Guys”

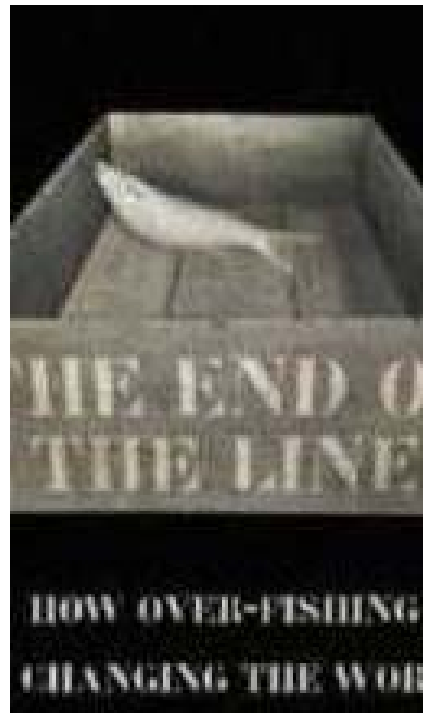
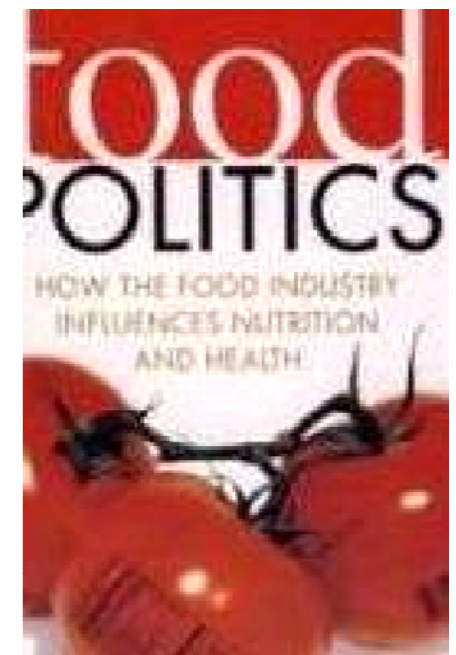
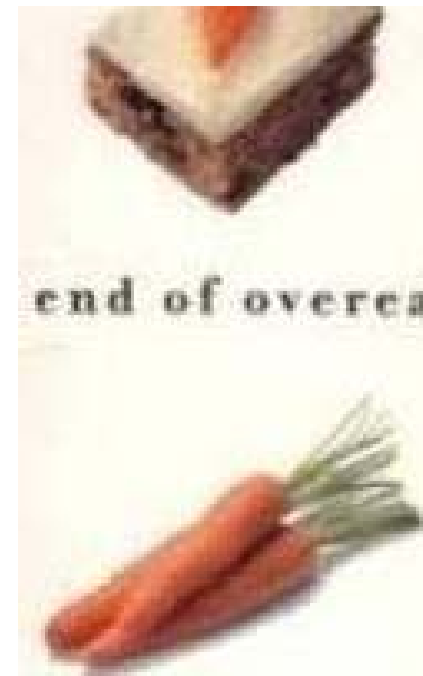
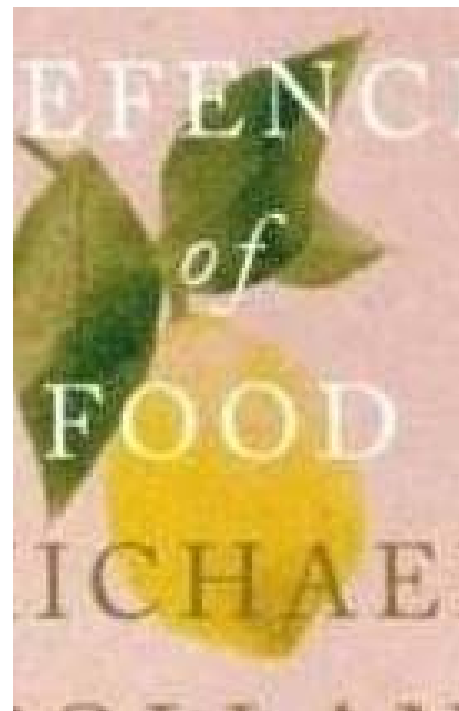
Source: GDI Gottlieb Duttweiler Institute, Switzerland, 2011, and David Hughes



In the Dock: The “Patriarchal Scientific” Food Industry!

The Charge? Threatening the Health & Well-Being of:

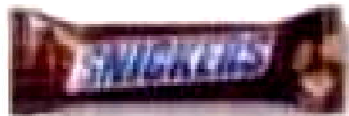
- ***The Planet*** - issues relating to sustainability, climate change, resource conservation, biodiversity, etc.
- ***Consumers*** – food safety, obesity
- ***Food System Participants*** – abusing farm animals, threatening smaller-scale farmers, bullying suppliers



For the Prosecution

New York Times





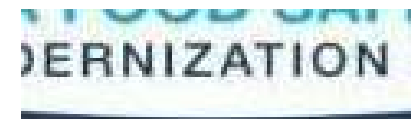
FREE FROM ARTIFICIAL COLOURS, FLAVOUR

R

FDA Food Safety Modernization Act:

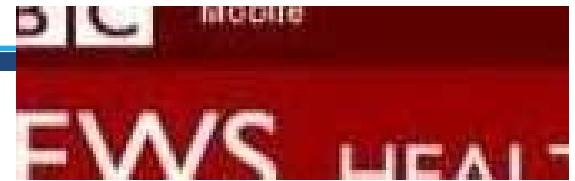
Why the Law is Needed

- Foodborne illness in the USA is a significant burden
 - About 48 million (1 in 6 Americans) get sick each year
 - 128,000 are hospitalized
 - 3,000 die
- Food supply more high-tech and complex
 - 15 percent of U.S. food supply is imported
 - More foods in the marketplace
 - New hazards in foods not previously seen



Sugar tax needed, say US experts

Sugar is as damaging and addictive as alcohol or tobacco and should be regulated, claim US health experts.



Sweden needs a fat tax to tackle obesity: expert



Breaking News: Sweden/Denmark to introduce sugar tax

MailOnline

France approves fat tax on sugary drinks such as Coca-Cola and Fanta

- Tax is expected to rake in £100m for state coffers
- 20 million French people are overweight, survey says

Denmark Imposes The World's First 'Fat Tax'

If you are in Denmark, go to the store and load up on as much junk food as you can right now, because your government is about to start charging the world's first "fat tax" in an effort to keep you thinner and healthier.





PROJECT:
**pet
slim down™**
FROM  **PURINA.**

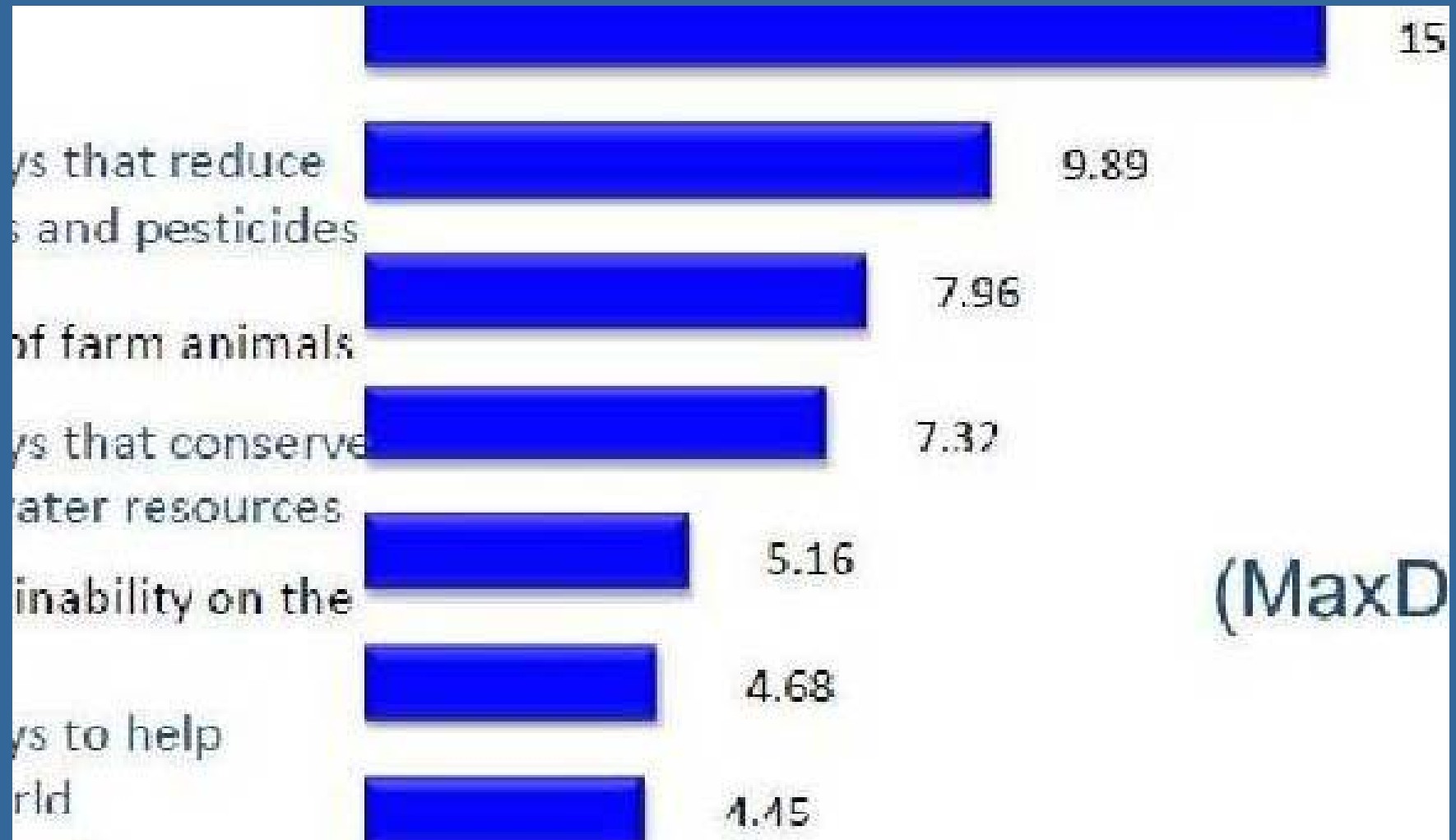


Dog Care: Heavy Isn't
Healthy for People or Pets
The American Animal Hospital Association



Nestlé seeks sustenance in pet diets

Priority Goals Driving Consumer Food Choices in the USA



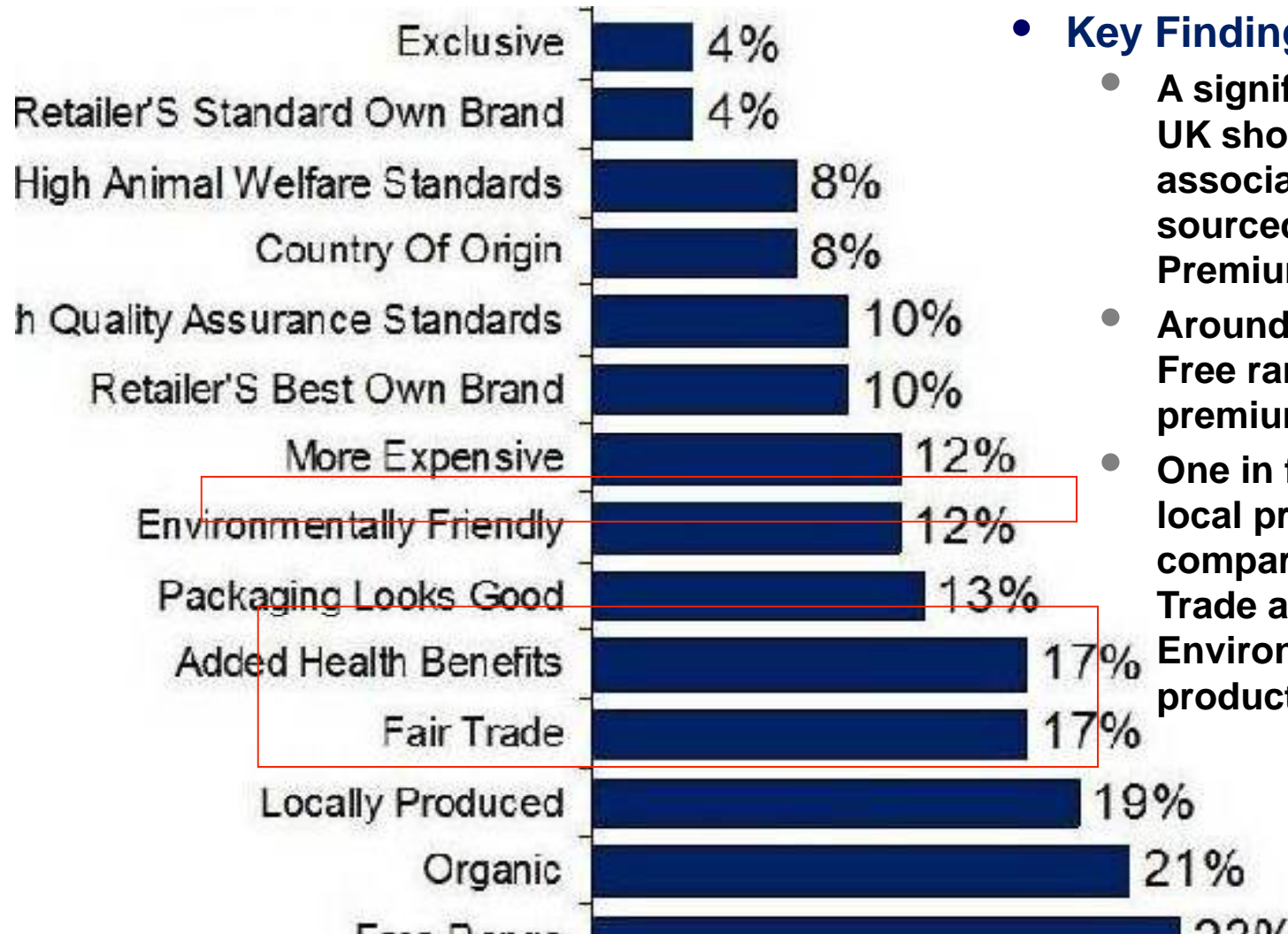
Source: The Center for Food Integrity, 2012 (survey of 2,000+ consumers)

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Premium attributes

Thinking about food and drink products, which of the following would most make you think a product is a 'premium' product?



Key Findings

- A significant proportion of UK shoppers already associate many ethically sourced products as Premium products.
- Around a quarter associate Free range (23%) as premium.
- One in five (19%) associate local products as premium compared to 17% for Fair Trade and 12% for Environmentally friendly products.