June 17, 2015: Opening General Session

Menus of Change Annual Report: What’s New? What’s Ahead?

Arlin Wasserman and Walter Willett, MD, DrPH
OUR VISION

HEALTHY, SUSTAINABLE, AND DELICIOUS

BUSINESS MODELS AND STRATEGIES

THE FUTURE OF FOOD
INTEGRATED GUIDANCE FOR BUSINESS AND CULINARY LEADERS

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Putting Change on Menu…and the Agenda

Changing Menus Matters

Think Protein First

Water Footprint of Foods

Healthy
Sustainable
& Delicious
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SIGNIFICANT DECLINE OR REGRESS

GETTING BETTER, BUT FAR FROM WHERE IT NEEDS TO BE

NO SIGNIFICANT PROGRESS

GOOD PROGRESS, WITH ROOM FOR MORE

SIGNIFICANT PROGRESS
Executive Briefings

FISH, SEAFOOD, AND OCEANS

Seafood is a healthy and relatively environmentally friendly choice. And yet, annual U.S. seafood consumption is less than 15 pounds per person. That’s half the global average. Despite up to 800 different species of fish and shellfish being available in the U.S., the top 10 types comprise 50 percent of the volume consumed. This year, salmon became the second most consumed seafood behind shrimp, which has been the most consumed seafood for over a decade. Canned tuna dominated to third place, with a minor slip in volume consumed, but still above two pounds per person per year. The majority of shrimp, tuna, and salmon are caught or farmed overseas largely a result of a search for cheaper and more consistent protein. This has led to a lack of transparency, and concern about environmental practices, which in turn raises questions for chefs and consumers.

Seafood consumption is associated with a host of health benefits. Fish is an important source of low-essentials, proteins, provides high levels of omega-3 acids, and nutrients, and may be beneficial for brain development. Seafood, especially from marine sources, provides a good source of long-chain omega-3 fatty acids, which have been linked to lower risk of heart attack and stroke. These health benefits are weighed against how much mercury, or any other heavy metals, there are in the seafood. The FDA recommends consuming only about one-third of the FDA recommended amount of fish, and the can impact their children by not allowingUlti development. The FDA recommends that consumers including women who are pregnant or breastfeeding eat a minimum of two to three servings of fish a week.

The year, the discussion of seafood sustainability has continued to heighten, and we now see an ever-increasing number of claims that the seafood production is sustainable. Yet sustainability implies an end of journey, that all necessary work has been done, and there is no longer a need to improve. All sectors of the food industry need to work to continuously increase the sustainability of their products, as this is the ever-improving process toward food system improvement. Certification is an important component of this path to sustainability, but represents only a step along the way. The challenge moving forward will be to determine how to differentiate the rigor of different types of certification so that it does not converge toward a single low bar of sustainability that is passable by all.

Aquaculture: Aquaculture production is important because global demand for seafood exceeds supply of wild species. Of the top 10 seafood species consumed in the U.S., 50 percent is produced in aquaculture. However, much of that is imported. U.S. domestic production is low and focused on salmon, shrimp, and tilapia. The Global Aquaculture Alliance (GAA) Best Aquaculture Practices (BAP) and the Aquaculture Stewardship Council (ASC) continue to lead certification efforts to ensure production meets specific criteria.

To address the fact that, globally, less than 10 percent of seafood is certified to an independent third-party certification (e.g., GAA, ASC, ASC), efforts are underway to create Aquaculture Improvement Programs (AIPs) and to engage more aquaculture operations in the certification process, which will ideally reduce poor production practices. A new concept in AIPs is area management, which will address not only production at that level, but issues that multiple farms in an area do not interact in a way that cumulatively harms the environment.

Fisheries: As in aquaculture, improvements toward more sustainable fisheries continue. However, the Marine Stewardship Council (MSC), the largest and most widely accepted wild fisheries certification program, has only certified about eight percent of the global catch to date as meeting its standard for fishery management. The reasons for this low take-up include that are not limited to the price of fish, cost and time of conducting the certification; the uncertainty for the return on investment; and the potential for mixed messaging through the appearance of less rigorous programs. To assist in the creation of additional certified products, collaborative efforts—such as the fishing industry, retailers, and members of the Conservation Alliance for Seafood Solutions—have spearheaded many efforts to improve Producer Products (PPPs). These projects connect environmental organizations, industry, and other stakeholders with trusted farmers to move them toward sustainable practices and, ultimately, certification.

Because U.S. aquaculture includes mandates to establish sustainable fisheries, some argue that U.S. fisheries do not need additional independent evaluation. However, a number of U.S. exports are still subject to overfishing, and are overfished, are inadequately enforced, and, in some cases, are not managed with enough precision to adequately provide rebuilding. In the Gulf of Maine, managers want to limit the total allowable catches of cod. This could disrupt the U.S. Gulf of Maine groundfish fisheries, prompting much consternation.

RECOMMENDATIONS:

- Foodservice professionals must know what they buy and where it is produced, and must communicate this information honestly and effectively.
- DNA methods are becoming so readily available that high school biology classes now can use them. But DNA methods are only as good as the biological understanding of the species. In most cases, we can sell the species, but not a specific location, and most definitely not the methods used to catch or grow the fish. Widely available methods of testing seafood DNA will increase the social pressure for accurate labeling, and there is a growing interest in developing other labels such as mineral content that can provide regional information on fish stocks.

One of the biggest challenges to sustainability is waste. A fish certified as sustainable isn’t truly sustainable if it is thrown away. In many situations, thrown instead of used is a huge problem, since it means the fish is wasted. So, serving appropriate portions, using edible parts of fish, and decreasing food waste is critical. The one-third of the world’s fish stocks that are either low on the food chain, such as mollusks and sardines, or those that are critical to the balance of the ocean, are changing as oceanic conditions change. One way to help decrease this is the use of aquaculture. This has been a major trend in recent years, but it is not a silver bullet. One of the most sustainable options is that they are produced within the U.S., and have a very low environmental impact. Yet, on average, Americans eat only about one-third of a pound of salmon per year. Chefs and foodservice professionals can both serve a greater diversity of species and use their consumption influence to introduce diners to new varieties of fish and seafood, including through teaching American consumers how to cook with more varieties.

SCORE: 3

There are myriad public and private efforts to improve seafood sustainability. Thus, from a nutrition and environment perspective, the seafood category continues to be a ladder suggesting a score of 4. At the same time, however, some troubling claims that suggest the goal of sustainability has already been reached (which likely is further from the mark). These claims arrive at a time of continued environmental concerns, industrial fishing, overfishing, and a lack of transparency, all of which threaten the path toward true sustainability (suggesting a score of 2). Given the variation in actions across this diverse protein category, the overall score is an average of 3.

IN SUMMARY:

-Despite widely demonstrated benefits, Americans continue to undervalue seafood both in total and in sufficient variety.

- Chefs and foodservice professionals should reduce waste through the use of leftover fish and inedible portions, while also introducing diners to seafood choices beyond the typical salmon, shrimp, and tuna. Varieties such as sardines, clams, mussels, sardines, and sardines are undervalued and yet the best and

- Effects such as Aquaculture Improvement Projects and Fish Project Improvement activities of the Atlantic States are helping certify a greater number of aquatic fish and seafoods as sustainable, yet certification does not mean there isn’t more work to be done; it is merely an important part of the movement toward a sustainable seafood system.
A Year of Change

• Menus changed and so did the fundamentals of the foodservice industry.

• This year’s *it* ingredients were decidedly sustainable

...And last year’s — kale and Brussels sprouts — are now mainstream.

• We continued a successful trend of opening restaurants that think plants first.
A Year of Change

- Climate and water weigh heavily on the bottom line.
  ...and another year of record drought, temperatures and CO₂ levels.

- Plant-forward is a rare opportunity to better manage food costs and address climate and water issues.
A Year of Change

Supply chain transparency became a business priority in addition to a priority for diners.

✓ Labor Problems in Fisheries
✓ GMO labeling and new scientific findings
✓ Bird Flu and Eggs (to go along with pork and bacon)

Largest restaurant companies now making pledges to use “clean” ingredients.
Health and Environmental Imperatives are Converging
Major takeaways for 2015 DGAC report

- Focus on dietary patterns rather than individual nutrients – one size don’t fit all
- Remove restriction on total fat: types of fat are more important
- Retain 10% upper limit on saturated fat
- Remove restriction on dietary cholesterol: eggs (moderate amount) are Okay
- Consider environment: reduce red meat for both health & planet
- Set a 10% calorie upper limit on added sugars
- Retain 2300 mg/day sodium limit, but not 1500 mg/day
- Coffee consumption as part of a healthy diet/lifestyle
- Farm-raised and wild-caught seafood are equally nutritious
- Promote “Culture of health”: Accessible, affordable, and normative
Adults: RCTs

Weighted mean difference in weight change (kg) between intervention and control regimens from RCT's in adults. Interventions evaluated the effect of adding SSB
Meta-analysis of prospective studies on sugar-sweetened beverages and risk of type 2 diabetes

Montonen, 2007
Paynter Men, 2006
Paynter Women, 2006
Schulze, 2004
Palmer, 2008
Bazzano, 2009
Odegaard, 2010
Nettleton, 2009
de Konig, 2010

Combined

1.26 (1.12, 1.41)
How Sweet Is It?

Calories and Teaspoons of Sugar in 12 Ounces of Each Beverage

For more information, see The Nutrition Source, www.hsph.harvard.edu/nutritionsource/healthy-drinks/

Key

170 Total Calories
10 Teaspoons of Sugar
RED: Drink Sparingly and Infrequently
YELLOW: A Better Choice, but Don’t Overdo It
GREEN: Best Choice

Cranberry Juice Cocktail
Orange Soda
Orange Juice
Cola
FDA Definition of Reduced Calorie
Sports Drink
New Target for Food Industry
Seltzer With a Splash of Juice
Coffee With a Sugar Packet
BEST BET: SUGAR-FREE NATURALLY (Water, Tea, Etc.)
Red meat and type 2 diabetes

Relative Risk for 100 g/day unprocessed red meat (meta-analysis)

An Pan, 2011
Relative Risk of type 2 diabetes for replacing 1 serving/day of total red meat with other foods. Data from NHS, NHSII, HPFS, including 13,759 cases of diabetes (Pan A et al. AJCN, 2011)
Substitution of Protein Sources (1 sv/day) and Risk of CHD in NHS, 1980-2006 (3162 cases)

Red meat and Mortality

NHS 1980-2008

Unprocessed

(P for trend, <0.001)

HPFS 1986-2008

(P for trend, <0.001)

NHS 1980-2008

Processed

(P for trend, <0.001)

HPFS 1986-2008

(P for trend, <0.001)
Total Red Meat & Risk of Premenopausal Breast Cancer

Multivariate RR

Quintiles

$P_{trend} = 0.007$

(Farvid MS et al., Int J Cancer 2014)
Estimated Sources of Calories in US Diet

- Sat fat
- Mono fat
- Poly fat
- Trans fat
- Added sugar
- Protein
- Refined grain
- Whole grain
- Potatoes
- Other carbs

(unpublished, compiled from NHANES)
Saturated Fat

Unsaturated Vegetable Fats
--High monounsaturated vegetable fats
--High polyunsaturated vegetable fats

Trans Fat

Refined Starch, Sugar

Carbohydrates

Whole Grains
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Climate Change and Water

Climate

Emissions continue to rise, and agriculture both contributes to that, especially from livestock production, and is affected by it.

Our industry can direct our collective purchasing power toward better choices: actively support sustainably managed farms and provide alternatives to beef on menus.

Water

Reducing meat consumption and raising awareness about water stress are helpful measures that consumers and chefs can take.

But these trends do not yet reflect broad efforts in the foodservice industry, while producers face prolonged periods of drought.
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Startups hoping to “disrupt” the food and foodservice industries are increasingly attracting attention and investment from venture capital and private-equity investors.

Investors have increased their support for new food and foodservice companies that feature plant-forward concepts and focus on sustainable supply chains.

Investors also now more clearly link stock performance with sustainability performance.
This Year’s Menu for Change

Helping Culinary Professionals to be Better Change Makers and Intrapreneurs

Shaping Consumer Choices by Design

Plant Forward

Cooking Up the News
This Year’s Menu of Change

Making the Business Case for Change: Managing Risk
Major takeaways for 2015 DGAC report

- Focus on dietary patterns rather than individual nutrients – one size don’t fit all
- Remove restriction on total fat: types of fat are more important
- Retain 10% upper limit on saturated fat
- Remove restriction on dietary cholesterol: eggs (moderate amount) are Okay
- Consider environment: reduce red meat for both health & planet
- Set a 10% calorie upper limit on added sugars
- Retain 2300 mg/day sodium limit, but not 1500 mg/day
- Coffee consumption as part of a healthy diet/lifestyle
- Farm-raised and wild-caught seafood are equally nutritious
- Promote “Culture of health”: Accessible, affordable, and normative
Adults: RCTs

Weighted mean difference in weight change (kg) between intervention and control regimens from RCT’s in adults. Interventions evaluated the effect of adding SSB
Meta-analysis of prospective studies on sugar-sweetened beverages and risk of type 2 diabetes

Montonen, 2007
Paynter Men, 2006
Paynter Women, 2006
Schulze, 2004
Palmer, 2008
Bazzano, 2009
Odegaard, 2010
Nettleton, 2009
de Konig, 2010

Combined

1.26 (1.12, 1.41)
How Sweet Is It?

Calories and Teaspoons of Sugar in 12 Ounces of Each Beverage

For more information, see The Nutrition Source, www.hsph.harvard.edu/nutritionsource/healthy-drinks/

Key

- 170 Total Calories
- 10 Teaspoons of Sugar
- RED: Drink Sparingly and Infrequently
- YELLOW: A Better Choice, but Don’t Overdo It
- GREEN: Best Choice

Cranberry Juice Cocktail
Orange Soda
Orange Juice
Cola
FDA Definition of Reduced Calorie
Sports Drink
New Target for Food Industry
Seltzer With a Splash of Juice
Coffee With a Sugar Packet
BEST BET: SUGAR-FREE NATURALLY (Water, Tea, Etc.)

© 2009 Harvard University. May be reproduced for non-commercial educational purposes without specific permission. For all other uses, please contact The Nutrition Source, www.thenutritionsource.org.
Red meat and type 2 diabetes

Relative Risk for 100 g/day unprocessed red meat (meta-analysis)

An Pan, 2011
Relative Risk of type 2 diabetes for replacing 1 serving/day of total red meat with other foods. Data from NHS, NHSII, HPFS, including 13,759 cases of diabetes (Pan A et al. AJCN, 2011)
Substitution of Protein Sources (1 sv/day) and Risk of CHD in NHS, 1980-2006 (3162 cases)

Red meat and Mortality

NHS 1980-2008  Unprocessed


(P for trend, <0.001) (P for trend, <0.001)

Relative Risk

0.8 0.9 1 1.1 1.2 1.3 1.4

Q1 Q2 Q3 Q4 Q5

NHS 1980-2008  Processed


(P for trend, <0.001) (P for trend, <0.001)

Relative Risk

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Total Red Meat & Risk of Premenopausal Breast Cancer

Quintiles

\[ P_{\text{trend}} = 0.007 \]

(Farvid MS et al., Int J Cancer 2014)
Estimated Sources of Calories in US Diet

- Whole grain
- Potatoes
- Other carbs
- Sat fat
- Mono fat
- Poly fat
- Trans fat
- Refined grain
- Added sugar
- Protein

(unpublished, compiled from NHANES)
Saturated Fat

Unsaturated Vegetable Fats
--High monounsaturated vegetable fats
--High polyunsaturated vegetable fats

Trans Fat

Refined Starch, Sugar

Carbohydrates

Whole Grains
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Multivariate Risks of Cardiovascular Disease and Cancer Among 38,615 Men 1986-1994

(McCullough et al. 2002)

Relative Risk

Quintiles of Revised Healthy Eating Index

38,615 MEN
Change in AHEI through 1012

(Wang DD et al, unpublished data)
Change in AHEI components through 2012

(Wang DD et al., unpublished)
Trends in AHEI -2010 Score by Socioeconomic Status (SES) based on the NHANES

$P$ for interaction =0.0132

(Wang D et al., unpublished data)
Table 1 illustrates the greenhouse-gas emissions associated with several common protein sources and is a good indicator of environmental impact including energy and chemical use, soil management, and mechanical irrigation. Both public health and the environment will improve if restaurants decrease the amount of red meat on menus and replace it with alternative protein sources.


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MENUS of CHANGE
The Business of Healthy, Sustainable, Delicious Food Choices

June 17-19
2015

THE CULINARY INSTITUTE OF AMERICA
HARVARD T.H. CHAN
SCHOOL OF PUBLIC HEALTH
Department of Nutrition