What’s Happening in Our World of Food and Does It Matter?

Dr. David Hughes  
Emeritus Professor of Food Marketing

A. Jean de Grandpré Distinguished Speaker Series  
Celebrating McGill’s Bicentennial and the Promise of a Better Tomorrow  
Wednesday, September 8th, 2021

@profdavidhughes  
www.supermarketsinyourpocket.com
By 2050, 10 Billion People Will Live in Our World and 80% of Them Will Live in Asia & Africa

Growing at a slower pace, world population is expected to reach 9.7 billion in 2050 and could peak at nearly 11 billion around 2100. (June 22nd, 2020)
Population 41m in 2030 with Median Age of 44

Canada 2020
Population 38m

Population 263m in 2030 with Median Age of 19

Nigeria

PopulationPyramid.net
Population: 206,139,587
Canada has 15% of the world's land mass but only 0.5% of the world's population. Bangladesh has 0.1% of the world's land mass and 2% of the world's population. Bit greedy of Canada to have all that land. Should it give some to Bangladesh as a 50th birthday present?

Dr. Food @ProfDavidHughes
Climate change–induced declines in agricultural production forecasted for Africa & much of Asia by 2050 (FAO). Hmmm, those are the same regions which will see the lion’s share of the anticipated 2 bn. extra people in our world by then! Good news for some big commodity exporters.

About half of Bangladesh’s 167m Population Live Close to Sea Level

"The Economist", August 17th, 2019
The Covid Pandemic

“It Ain’t Over ’Til It’s Over”!

Yogi Berra
Baseball Player
& Moral Philosopher

If the country colour is blue or blueish, then, it’s NOT brilliant!
Worldwide, Food Service (Eating Out) Sector has been Trampled by the Pandemic!
Rising Food Prices are Hitting the Headlines in Canada and Elsewhere.

[Pour Moi, Déjà Vu!: 1973 Establishment of Canada Food Prices Review Board]
A Combination of Short Term Covid-19 and Long Term Climate Change Factors

Why are prices going up at the grocery store?

Food will likely get even more expensive. What does the election mean for your grocery bill?

TORONTO -- Canadians can expect even higher grocery prices this fall as the cost of some items continues to climb.

Grocery prices have been on a steady rise since the beginning of the pandemic and both COVID-19 and climate change are the drivers behind the increases, according to a food expert.
FAO Global Food Price Index: 1961 to 2021*
Index at a 10 Year High

FAO Food Price Index in nominal and real terms

Source: FAO  * to August 31st, 2021, released September 2nd, 2021

* The real price index is the nominal price index deflated by the World Bank Manufactures Unit Value Index (MUV)
Everybody is Concerned about Rising Food Prices:

- The lowest income groups worry about affording food for the family
- The highest income group is cross about the price of Ancient Grain seeded sour dough increasing in price from $4 to $5!*

* $5 seeded sour dough bread isn't The Staff of Life!

Chicken For Dinner?

Do You Want to Pay:
• $4.50
• $14
• or $34?

Willow Farm Whole Chicken 1.1Kg - 1.5Kg

Write a review ›
Rest of shelf ›

Aldi Price Match

TESCO

The chosen weight of this product is only a guide, you will receive the closest weight available

1.65kg/£8.25

£ 2.47  £1.90/kg

£ 8.25  £5.00/kg

Sainsbury's Free Range Whole Fresh British Chicken, So Organic (approx. 1.7kg)

★ ★ ★ ★ ★ (45)

ORGANIC

2.21kg-2.6kg - £15

£19.37  £7.45/kg

Tesco Finest British Cornfed Free Range Whole Chicken 1Kg-2.3Kg

Write a review ›

£ 8.25  £5.00/kg
The Wheel of Grocery Retailing Continues to Turn!

UK Online Grocery Sales Peaked in 2020 at 16% of Total Grocery – Slipped Back 2% in 2021 But Still Very Strong. In Canada, Online Grocery Sales Started from a Lower Base But Increased Sharply. However, Online is Still Only Around a Modest 6% of Total Grocery Sales in Canada
In Canada, Online Grocery Sales Started from a Low Base & Increased Sharply. However, Online is Still Only Around a Modest 6% of Total Grocery Sales
Call Karo Cart. Bano Smart.

Dr. Food @ProfDavidHughes
Here's a neat example of combining traditional shopping with modern technology for fresh fruit & veggies in India where many like to see/touch fresh produce before buying. It's sort of how my Mum ordered our F&V in the 1950s, altho' she used a tel. party line rather than an app!
October 19th, 2020

Alibaba Group will spend $3.6 billion to take control of Chinese supermarket giant Sun Art

The Grocery Store Isn’t Dead …… BUT
It Needs to be Linked Digitally & have a Big Dollop of Theatre

October 2020

Alibaba’s Freshippo opens first membership-only store in Shanghai, challenging Costco and Sam’s Club

May 5th, 2021

Alibaba to open 10 more Freshippo X stores

The Grocery Store Isn’t Dead …… BUT
It Needs to be Linked Digitally & have a Big Dollop of Theatre
Amazon Fresh till-less grocery store opens in London

Amazon to open its first Fresh supermarket with checkout-free technology

Amazon is planning to open a new Fresh store on Thursday that will be the first full-size supermarket in the chain to feature the retailer's Just Walk Out checkout-free technology, according to a company blog post.
Gopuff enters UK rapid delivery market with Fancy acquisition
May 6th, 2021

Purchase by $9bn US microfulfilment company heralds arrival in crowded European market

GoPuff raises $1.15 bn at nearly $9 bn valuation from SoftBank
March 23rd, 2021

Dija: London startup launches 10-minute grocery delivery with £14.4M seed funding
March 30th, 2021

Ultrafast grocery delivery firm Getir secures $300m in funding

“Dark” Stores and Rapid Delivery of Grocery Essentials in the UK Market

July 9th, 2021

Gopuff is hiring over 100 employees to back ghost kitchens operation

US on-demand grocery giant Gopuff acquires UK’s Dija
August 15th, 2021
July 6th, 2020

Uber buys Postmates in $2.65B deal

July 6th, 2020

Accelerated Concentration in Restaurant Meal Delivery

% Share of USA Online Delivery Platform Sales

- DoorDash 51
- Uber Eats 23*
- Postmates 7
- Grubhub ** 18**

* Uber acquires Postmates

** Just Eat buys Grubhub

June 10th, 2020

Just Eat Takeaway acquires Grubhub for $7.3 billion to create largest food delivery firm outside China

January 17th, 2021

DoorDash has a current Market Cap. of US$65bn

Jan. 10th, 2020

Just Eat and Takeaway.com cleared to form £6.2bn food courier giant

June 10th, 2020

Deliveroo completes Series H funding round, now valued at over $7bn

January 17th, 2021
Ghost Kitchen Brands Partners with Walmart Canada Amid Pandemic

McDonald’s will close hundreds of locations in Walmart stores as pandemic changes shopping habits

April 9th, 2021
HelloFresh acquires Canadian meal kit company Chefs Plate  
October 2018

HelloFresh acquires ready-to-eat meal company Factor75  
November 27th, 2020

HelloFresh has agreed to buy Factor75, an Illinois-based firm that sells ready-to-eat meals oriented around health and wellness, according to a

HelloFresh Market Capitalisation: US$18bn*

*Loblaw’s Market Cap is US$24bn
Nestlé buys Mindful Chef to bulk up direct-to-consumer portfolio

Nestlé agrees to acquire recipe kit firm SimplyCook

Nestlé acquires prepared meal service Freshly to compete with HelloFresh, Blue Apron

Nestlé buys US meal delivery company Freshly in $950m deal
GROUP BUYING HUGELY ON-TREND IN CHINA

Value of team purchase: Aggregating demand that would otherwise be dispersed

People’s decisions can be dynamically influenced by their trusted sources as they do not always have strong preferences.

I want apples on Monday
I want pears on Thursday
I want oranges on Tuesday

I have great deals on apples and pears, why don’t we all buy apples on Monday and pears on Thursday?

Let’s buy apples on Monday together...
...and pears on Thursday together

Volume aggregation for merchants

GROUP BUYING HUGELY ON-TREND IN CHINA
Valentine’s Day Deal
C$36 per Couple

Rump steak with peppercorn sauce
21-day-matured tender rump steaks served with a tasty peppercorn sauce

Sirloin steaks with heart-shaped butter
21-day-matured juicy sirloin steaks served with a heart-shaped butter

Rack of lamb with mustard, honey and herb crust
Beautiful British lamb coated in a mustard, honey and herb crust

Plant Kitchen no-beef creamy peppercorn pie (Ve)
Pea protein in an indulgent peppercorn sauce, encased in flaky pastry and
“Home Cooked” Food Apps Expanded in 2020

Cook My Grub
Cook My Grub offers a refreshing new way to search and order fresh, authentic and healthy home cooked food and bakes in your local area.
Join the Food Growing Revolution in our Cities

Find a space to grow your own food

Earn money by renting out your garden

Get your own Plot

Become a Host
Singapore vending machines now dispense salmon, crab and even cacti

Chef-in-Box cafe in Singapore heats and serves ready meals from a machine

Marish Kumar with Norwegian Salmon ATM

Vacuum-packed salmon and Wagyu beef - straight out of a vending machine
HOW DO CONSUMERS SOLVE THEIR MEAL PROBLEMS?

FROM FOOD SERVICE
- FORMAL SIT DOWN RESTAURANT
- CASUAL DINE
- QSR
- STREET FOOD
- SANDWICH / COFFEE SHOP CHAINS

FROM RETAIL
- MEAL COMPONENTS
- MEAL SOLUTIONS
- READY MEALS
- MEAL KIT INSTORE
- MEAL DEALS
- MEAL KIT DELIVERED
- SUPERMARKET RESTAURANT
- DELICATESSEN COUNTER
- FOOD TO GO SUPERMARKET
- SUPERMARKET DARK KITCHEN

MEALS
- REGULAR MEALS
- MINI-MEALS

FOOD RETAIL & FOOD SERVICE CONVERGE
- INGREDIENTS FROM SUPERMARKETS, CONVENIENCE STORES, ON/OFFLINE GREENGROCERS, BUTCHERS, ETC.

RESTAURANT EAT OUT
- RESTAURANT DARK KITCHENS
- DELIVERY "EAT OUT IN"
- DELIVERY BRANDED MEAL
- FOOD TO GO "TAKEAWAY"
- STREET FOOD

RESTAURANT "EAT OUT IN"
The Notion of “Climate-Friendly and Planet-Friendly Diets” are Gaining Substantial Traction. Just Ask Your Children/Grandchildren!

Student Climate Strikes Across Asia: “There Is No Planet B”
February 14th, 2020

Covering Climate Now

Youth climate strikes sweep Asia ahead of UN Climate Action Summit
September, 2019

Global “Climate Change Strikes”
Friday, September 20th, 2019

Climate activist Xiye Bastida makes powerful speech to world leaders
April 23rd, 2021

‘Put her in charge of a continent or two’: Teen climate activist is lauded for powerful speech at White House climate summit

Fridays for Future: how the young climate movement has grown since Greta Thunberg’s lone protest
Health and environmental impacts of various foods

Diets for a Better Future:
Rebooting and Reimagining Healthy and Sustainable Food Systems in the G20

Figure 4. The health and environmental impacts of various foods. Overconsumption of red and processed meats increases the risk to both human health and the environment. Plant foods tend to be good for both people and planet. Added sugar is a major driver of poor health but has much lower environmental impacts. 

Source: Clark et al. (2019).”
THE POWER IS ON YOUR PLATE
The Unequivocal Evidence that Obesity and Diabetes Increase Health Risks Associated with Viruses will Increases Governmental Pressure on Citizens to:

- Eat Less and Much More Healthier;
- and Exercise More.

We Shall See MORE Regulation on Health Issues Related to Food (moving on from Nudging to Taxing!). UK Food Strategy Report Recommends Tax on Salt & Sugar Used in Food Processing.

Many Canadians gaining weight during COVID-19

Young people report snacking more and gaining weight during lockdown

Weight gain in Chinese youth during a 4-month COVID-19 lockdown
“Big Food” has had an Exceptional Sales Bonanza During Covid-19

Score: 8.8/10

In the end, the classic macaroni and cheese brand took the crown. That’s right, your standard box of Kraft is really the best packaged mac and cheese out there! Costing less than a dollar a box, we’re not complaining!
Queen’s Speech 2021: Junk food adverts to be banned completely online and on TV before 9pm

May 11th, 2021

Government proposal to tackle obesity forms part of its promise to the NHS at the forefront of the recovery from the coronavirus pandemic.
Carrefour and Colruyt Introducing Nutri-Scores On Private Label Products

How Would Your Products Score?

- The majority of Nestlé’s traditional food and drinks do not meet a "recognised definition of health."

- Just 37% of its consumer food and beverage products meet international health standards.

- The global food company acknowledged the issue in an internal presentation seen by the Financial Times.
Smash: Healthy food discount app for young people launches

May 20th, 2021

Source: Smash
To access the app, which is available exclusively to 13 to 24-year-olds, users must take a selfie to pass a facial age scan
New store in Sweden prices goods based on carbon emissions 

In a world first, major Swedish food brand Felix has launched its own grocery store where products are priced on their climate impact: the more the carbon dioxide emissions, the higher the price.
And Eco-Scores are Next Up!

Eco-Score’s European expansion: Lidl and Colruyt adopt environmental footprint labelling

Lidl to help consumers go greener with new Eco-Score trial in Scotland

Eco-Score labelling scheme gaining traction in Europe / Pic: GettyImages-Goran13
Want to Know Nutrition and Environmental Scores for Your Food? There’s an App for That!

Yuka

The mightiest of European shopping apps, Yuka enables the scanning of 1.5 million products – 70% of which are food and drink, the rest cosmetics. Some five million products are scanned on a daily basis.

Giki

Giki awards products badges, based on data provided by the manufacturer and referenced against more than 30 subject matter expert partners, such as RSPCA Assured, RSPO, Fairtrade and the Rainforest Alliance.
CLIMATE-FRIENDLY MILK NOW AVAILABLE TO BRITISH CONSUMERS

In UK coffee shops and to enjoy at home

Can This Swiss Feed Supplement Do For Cows What Tesla Is Doing For Cars?
# Total U.S. plant-based food dollar sales and dollar sales growth by category, 2020

<table>
<thead>
<tr>
<th>Category</th>
<th>Dollar Sales</th>
<th>% chg YA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant-based milk</td>
<td>$2.5b</td>
<td>20%</td>
</tr>
<tr>
<td>Other plant-based dairy</td>
<td>$1.9b</td>
<td>28%</td>
</tr>
<tr>
<td>Plant-based meat</td>
<td>$1.4b</td>
<td>45%</td>
</tr>
<tr>
<td>Plant-based meals</td>
<td>$520m</td>
<td>29%</td>
</tr>
<tr>
<td>Plant-based protein liquids and powders</td>
<td>$292m</td>
<td>10%</td>
</tr>
<tr>
<td>Tofu and tempeh</td>
<td>$175m</td>
<td>41%</td>
</tr>
<tr>
<td>Plant-based baked goods</td>
<td>$152m</td>
<td>-1%</td>
</tr>
<tr>
<td>Plant-based condiments and dressings</td>
<td>$81m</td>
<td>23%</td>
</tr>
<tr>
<td>Plant-based eggs</td>
<td>$27m</td>
<td>168%</td>
</tr>
</tbody>
</table>

Note: the data presented in this graph is based on custom GFI and PBFA plant-based categories that were created by refining standard SPINS categories. Due to the custom nature of these categories, the presented data will not align with standard SPINS categories.

Source: SPINS Natural Enhanced Channel, SPINS Conventional Multi Outlet Channel (powered by IRI) | 52 Weeks Ending 12-27-2020
UK giant Unilever bets on vegan food with 'scary target'

November 2020

The company is betting on growing its plant-based meat brand The Vegetarian Butcher, which it acquired two years ago, and now sells in 30 countries.

It's through this brand that Unilever supplies Burger King's plant-based Whopper in 26 countries, with the fast-food chain having plans to sell its plant-based nuggets.

Unilever also wants to push its vegan dairy ranges, which include Vegan Ben & Jerry's ice cream, Magnum Vegan, Vegan Cornetto, and Hellmann's Vegan mayonnaise.

Unilever’s The Vegetarian Butcher expands plant-based Whopper roll out in Latin America, the Caribbean and China

January 6th, 2021

One of the UK’s biggest consumer goods firm is betting on more people eating vegan food and has set itself a "scary target" to increase sales.

Unilever wants to increase its annual sales of plant-based meat and dairy products five-fold within seven years, hitting €1bn (£900m) by 2027.

In the UK, there has been exponential growth in vegan food sales with sales of meat-free products in the UK up from £488m last year to £577m this year, according to analyst firm Kantar.
For Nestlé, the future of food is rooted in plants  September 2nd, 2020

The Switzerland-based company is investing heavily in its Sweet Earth brand and other plant-based offerings to grow in a segment populated by heavyweight competitors and nimble upstarts.

Sweet Earth adds bacon to make its plant-based burger more Awesome  July 17th, 2020

Nestlé launches plant-based Vuna with ‘rich flavour and flaky texture of tuna’  August 20th, 2020
Big Food has been Busy Buying Up Little Food!

- **General Mills and GoodBelly partner to launch probiotic cereal, yogurt**
  - July 2019

- **Mars snaps up remainder of US snacks maker Kind**
  - November 18th, 2020

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**Mondelez Agrees to Buy Rest of Paleo Chocolate-Bar Maker Hu**

- Maker of Oreo cookies and Ritz crackers has been adding to its snack portfolio as consumers’ tastes turn toward healthier fare
- January 5th, 2021

- Mondelez takes minority stake in Hu through SnackFutures program
  - April 19th, 2019

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**Danone Manifesto Ventures buys majority stake in Harmless Harvest**

- July 5th, 2021

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Imperial College London
UN report reveals 17% of all food available at consumer level is wasted

08 Mar 2021 --- An estimated 931 million metric tons of food, or 17 percent of total food available to consumers in 2019, went into the waste bins of households, retailers, restaurants and other food services, according to new UN research conducted to support global efforts to halve food waste by 2030.

<table>
<thead>
<tr>
<th>Country name</th>
<th>Reference</th>
<th>Sector</th>
<th>Food waste estimate (kg/capita)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>(Environment and Climate Change Canada, 2019)</td>
<td>Household</td>
<td>79</td>
</tr>
<tr>
<td>United States of America</td>
<td>(U.S. Environmental Protection Agency, 2020a)</td>
<td>Household</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Food service</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Retail</td>
<td>16</td>
</tr>
</tbody>
</table>
Did you know?

160,000,000,000 pounds of food in North America end up in the landfill

Flashfood

Save money and fight against food waste

Get exclusive access to fresh food items like never before at grocery stores across Canada and the U.S.

Imperial College London
Frugalpac UK Paper Wine Bottle

Nestlé Goes Paper on Confectionery

Nature Valley makes recyclable wrappers for granola bars

These new McDonald’s trays are made from food waste
At franchises throughout Latin America and the Caribbean, you’ll now get your food served on an innovative new material.
Social Pressures Dictating Choice
Remind Me Again What We Can’t Eat?:

• Anything with palm oil as an ingredient
• Chicken that’s been fed soy from Brazil
• Fish that is unsustainably sourced
• Any meat/milk with hormones/antibiotics
• Food produced with slave labour
• Food produced by poorly paid farmers
• Water-intensive crops
• Eggs produced by hens in cages
• Eggs from “culled male chick” flocks
• Beef that has destroyed the Amazon
• Pork from pigs confined in stalls
• Anything in a non-recyclable pack

Post-Covid, What are the Major Social Issues which will Disturb Growth in Your Food & Drink Markets?
Unilever promises living wage across value chain and €2bn towards diversity  
January 21st, 2021

Unilever’s latest pledge will ensure that people who directly provide goods and services to the company will earn at least a living wage or income – which it defines as one that covers a family’s basic needs and that breaks the cycle of poverty.

While Unilever claims it already pays its own employees at least a living wage, it wants to secure the same for more people beyond its own workforce, specifically focusing on vulnerable workers in manufacturing and agriculture.
Danone extends regenerative agriculture program, furthering its pledge to climate change. December 22nd, 2020

We will advance regenerative agriculture on 1 million acres of farmland by 2030.

McCain Foods unveils raft of sustainable agriculture pledges. July 14th, 2020

Nestlé targets regenerative agriculture in €3bn climate plan. December 3rd, 2020


Soil & Water Sciences are Seriously Fashionable!
PepsiCo’s Net Water Positive Vision
Reduce Use + Replenish More

Efficiency
Achieve best-in-class or world-class water-use standards at all company-owned and third-party facilities by 2030.

- Over 11 billion liters of water a year saved
- 50% reduction in water use at PepsiCo sites
- Nearly half of sites located in high-risk watersheds

Replenishment
Replenish more than 100% of water used at all high-water-risk sites by 2030.

Safe Water Access
Provide 100 million people with safe water access by 2020.

Alliance for Water Stewardship Standard
Adopt in high-water-risk areas where PepsiCo operates by 2025.

We're crafting the foods + beverages you love with less water than ever.
Consumers can trace coffee beans through new blockchain app January 6th, 2020

Tech Giant IBM Unveils ‘Thank My Farmer’ App for Coffee Drinkers

LEADING BRANDS IMMERSE PEOPLE IN THE STORY

ORIGIN GIVES REASSURANCE OF QUALITY AND SAFETY

Mars teams with NSIP for 100% sustainable cacao supply chain January 9th, 2020
Infarm to establish 9,760-square-metre vertical farming facility in UK
August 5th, 2021

Market Valuations of Vertical Farming Enterprises are Managing to Defy Gravity!
The Emergence of AgriBusiness Unicorns

AeroFarms to go public in SPAC deal valuing vertical farmer at $1.2B
March 26th, 2021

AppHarvest starts trading after merger valuing company at $1B
February 2021

AppHarvest buys ag-robotics firm, Root AI
April 8th, 2021
Canada has Unicorns But They’re All in One Sector! And They’re Legal!
Saffron: The Highest Value (Legal) Agricultural Crop in the World?

Ranging in Retail Price from £6,200 to £10,000 per Kg
i.e. C$10,800 to C$17,400 per Kg

But, in Canada, Saffron is double the UK Retail Price:
C$22,000 to C$34,000 per Kg

An Arbitrage Opportunity Beckons: You Could Fly to London and Back First Class
To Buy Your Saffron and Still be Well Ahead of the Canadian Saffron Retail Price!
Source: “Northward shift of the agricultural climate zone under 21st-century global climate change”, by M. King et al. Memorial University of Newfoundland, Canada, 2018/
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