

# INGREDIENTS FOR A SUSTAINABLE WORLD

*The Chef's  
Good Food  
Handbook*

FOOD  FORWARD



**The China Biodiversity Conservation and Green Development Foundation** is a proactive environmental non-governmental organization and social legal entity working to protect the environment, preserve natural resources and biodiversity in China and all around the globe. Founded in 1985, it is China's oldest environmental non-governmental organization.



**The Good Food Fund** aims to facilitate shifts in food production, distribution, and consumption patterns towards a healthier and more sustainable food system, by supporting relevant research, communication, and entrepreneurship efforts.

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Special thanks to Yale Hospitality for its leadership in conceiving, planning, developing the program for, and managing the Food Forward Forum, as well as Mia MacDonald, Jian Yi, Tiran Zhang, Ruiqi Xie, Jieli Xie, Cecilia Zhou, Cui Xin, Hailey Chang, Wenjing Zhu, Shuman Liu, Rafi Taherian, Adam Millman, Chelsey Toong, and Cheng Qiu for your input and assistance

Food Forward Forum logo design: William Wilson, Yale Hospitality

Food Forward Forum Partners:



*The contents of this handbook do not necessarily reflect the official positions of any organization, institution, or private enterprise that partnered with or participated in the Food Forward Forum in February 2019 or any of the organizations, networks, corporations, or individuals described in the text.*

\*Brighter Green



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# Part I

## Background and the Basics

INTRODUCTION TO SOME KEY TERMS AND CONCEPTS ABOUT FOOD

Photo by Zheng Wang on Unsplash

# Vision and Mission

*Mindful food for a better world.*

*Ingredients for a Sustainable World: The Chef's Good Food Handbook* was created for chefs, culinary students and associations, food service providers, and educators working to bring about more sustainable, plant-forward menus and food systems. Written by a chef and a chef educator in the U.S. and China, the handbook is intended to inspire chefs to undertake further innovation and provide practical guidance and tools to do so. Investors, policymakers, civil society groups, and eaters can use it, too.

The handbook's six sections are designed to be engaging and accessible. They encompass key terms and concepts; evidence-based research on sustainable food systems and major current issues (e.g., food ethics, animal welfare, climate change, and food waste); profiles of chefs from around the world making positive changes in how they source, cook, and educate about food; examples of policies and programs both in the U.S. and internationally that advance healthy, sustainable food; practical ideas for chefs to apply the handbook's content in their workplaces; and "Further Edibles:," additional resources for learning, connecting, and implementation.

This handbook also draws upon frameworks for accelerating progress on local, national, regional, and global health, sustainability, and equity. These include the United Nations' Sustainable Development Goals (SDGs), the Chefs' Manifesto, the "Cool Food" and "Good Food" pledges, the C-40 Food Systems Network, and the Circular Economy Food Initiative, among others.

The handbook is an outcome of the Food Forward Forum, a unique sustainable food exchange program that took place in 2019. A joint initiative of the Good Food Fund in China and Yale Hospitality in the U.S., the Food Forward Forum was conceived as way for top Chinese chefs and culinary leaders to learn how to make their menus greener and more plant-forward through hands-on collaboration with their peers as well as academics, public health professionals, and university students. Additional goals were to foster conversation, engagement, creativity, collaboration, ongoing commitments, and the sharing of best practices.

Who better than chefs to embody and spread the message that plant-centered eating is the best way forward—for public health and food security; our imperiled climate and ecosystems' and non-human animals, domesticated and wild?

Yale Hospitality developed the architecture, planning, and implementation of the Food Forward Forum, which over two weeks included visits to five top universities in the U.S. northeast (Yale, Harvard, University of Massachusetts-Amherst, and the University of Connecticut), and the New York City headquarters of Google. The Food Forward Forum built on previous Good Food Fund programming and collaboration with Yale Hospitality, and was timed to coincide with the Chinese (lunar) New Year festival and the arrival in early 2019 of the Year of the Pig.

We hope you will find a variety of ways to use, apply and enjoy the handbook.

WHAT IS

# Sustainable Development?

Sustainable development is a complex concept that includes ecological, social, and economic aspects.

The most widely accepted definition comes from the United Nations' 1987 report of the World Commission on Environment and Development, *Our Common Future*:

“

**Sustainable development** is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.<sup>1</sup>

”

In other words, it is to live a good life while leaving our future generations a healthy environment and livable society, so that they can continue to live a good life.

Since then, the definition has been broadened and adapted by many countries and organizations.

We support the sustainable development of our society by promoting a sustainable food system.

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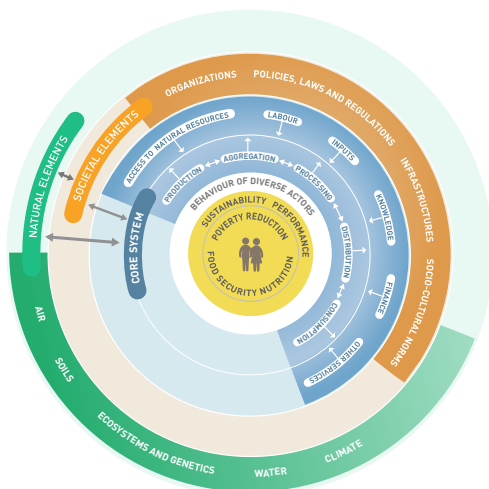


<sup>1</sup> United Nations. *Our Common Future*. <http://www.un-documents.net/ocf-02.htm#I>

# WHAT IS A Food System?

No matter where you are, no matter what you do, you are connected to a food system in some way. According to the United Nations Food and Agriculture Organization (FAO):

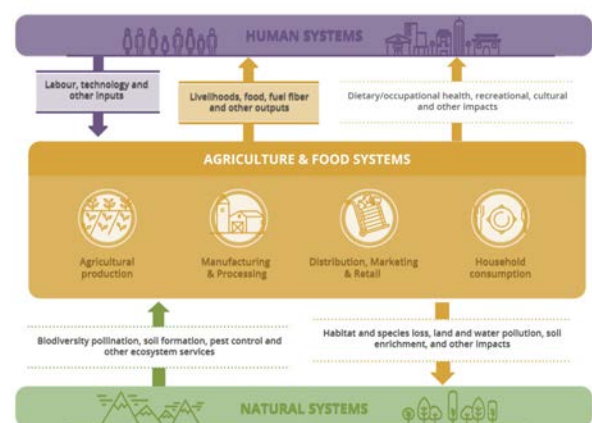
Food systems “encompass the entire range of actors and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption and disposal of food products that originate from agriculture, forestry or fisheries, and parts of the broader economic, societal and natural environments in which they are embedded.”<sup>2</sup>



Source: Food and Agriculture Organization, 2018

In 2018, the United Nations Environment Program launched The Economics of Ecosystems and Biodiversity for Agriculture and Food (TEEBAgriFood) research program, which expanded the concept to “**eco-agri-food systems**”,<sup>3</sup> in order to emphasize value chain-based system thinking as well as the important but often unrecognized role played by ecosystems.

There are many ways to look at a food system. Below are two ways to perceive a food system and its relationship with the natural and human worlds.



Source: United Nations Environment Program, TEEBAgriFood, 2018

<sup>2</sup> Food and Agriculture Organization of the United Nations (FAO). Sustainable Food Systems. <http://www.fao.org/3/ca2079en/CA2079EN.pdf>

<sup>3</sup> Müller, A. and Sukhdev, P. 2018. Measuring what matters in agriculture and food systems. [http://teebweb.org/agrifood/wp-content/uploads/2018/10/Layout\\_synthesis\\_sept.pdf](http://teebweb.org/agrifood/wp-content/uploads/2018/10/Layout_synthesis_sept.pdf)



# WHAT IS A Sustainable Food System?

According to the FAO, a sustainable food system is:

“

a food system that delivers food security and nutrition for all in such a way that the economic, social and environmental bases to generate food security and nutrition for future generations are not compromised.<sup>4</sup>

”

More definitions of a sustainable food system can be found in a compilation document prepared by Professor Ann Dale, from the School of Environment & Sustainability at Royal Roads University in Canada.<sup>5</sup>

It is not hard to see that everyone relies on a food system to survive and thrive, and everyone can help shape the food system to be a more sustainable one, for ourselves and for future generations to come.

In Part II of this handbook, we will go into more detail as to what a sustainable food system entails and why it is important to focus on food.

<sup>4</sup> FAO, *ibid.*

<sup>5</sup> Community Research Connections. Definition of a Sustainable Food System. [https://www.crcresearch.org/sites/default/files/u641/definition\\_of\\_a\\_sustainable\\_food\\_system.pdf](https://www.crcresearch.org/sites/default/files/u641/definition_of_a_sustainable_food_system.pdf)

# WHAT IS Good Food?



The "Good Food" promoted by the Good Food Fund can only come from a mindful and sustainable food system.

We envision that a "Good Food" system, including food choices, crop selection, production, storage, processing, distribution, consumption, and waste management, as well as all the socio-economic activities involved in the entire value chain, shall:

- conserve or regenerate the Earth's ecosystems and a livable climate;
- maintain or promote the health and well-being of human beings and animals;
- contribute to the livelihood and meeting the basic needs of food producers and consumers;
- contribute to honest, cooperative, and culturally relevant social relations; and
- contribute to a beautiful, regionally appropriate, and sustainable life for all.\*

The definition of "Good Food" is by no means limited to the one mentioned above. We encourage every person to learn more about the food system and the nexus of issues and shape one's own definition of "good food".

\*This definition is adapted from the definition proposed by Health Culture Revival and adopted in previous Good Food Fund events.

WHAT IS

# Plant-Forward?

The Menu of Change initiative (discussed further on page 70) defines the plant-forward concept as:

“

A style of cooking and eating that *emphasizes and celebrates*, but is not limited to, plant-based foods—including fruits and vegetables; whole grains; beans, other legumes, and soy foods; nuts and seeds; plant oils; and herbs and spices—and that reflects evidence-based principles of health and sustainability.

”

This definition was applied to the Plant-Forward Global 50, a list of fifty chefs and restaurants around the world who are advancing plant-forward food choices, a collaboration between the Culinary Institute of America and EAT Foundation.<sup>6</sup>

**Labels can be confusing. Here are some key differences between the plant-forward concept and similar alternative diet terms:**

**Plant-forward** is a flexible term, referring to broader food system transformation, not a specific diet or dish. It may or may not include animal

products, but tends to emphasize creativity in cooking and presenting plant-based ingredients to help customers shift towards a more plant-based diet while celebrating ecosystems and cultures.

**Plant-based** can refer to dietary patterns or ingredients derived solely from plant sources (sometimes this term is used interchangeably with ‘vegan’, but not always).

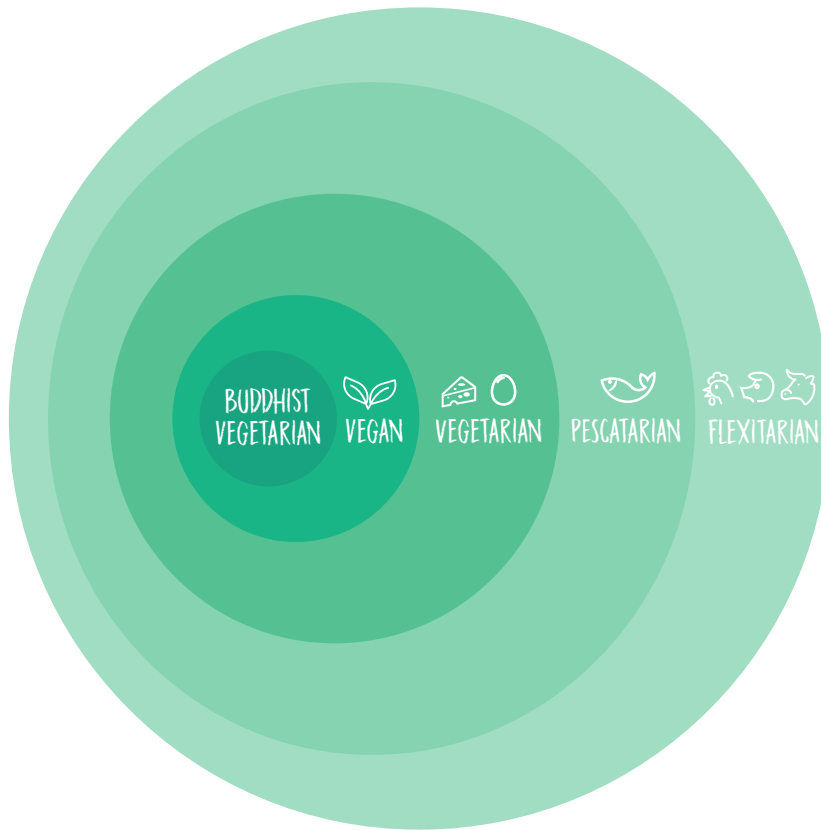
Compared to the **“Buddhist vegetarian”** cuisine that is quite established in China, plant-forward cooking is not normally associated with a religious theme and tends to use wholesome ingredients instead of highly-processed meat substitutes.

**Vegetarian diets** exclude meat, poultry, stock made from animal or fish bones, seafood, insects, and gelatin. **Vegan diets** exclude all animal products, including those listed above as well as dairy products and eggs.

**Pescatarian diets** follow the vegetarian guidelines, but allow for fish and seafood products.

**Flexitarian diets** include meat and/or other animal products, but with a conscious attempt to limit the intake of these products.

<sup>6</sup> Plant-Forward Global 50. <https://www.plantforward50.com/>



About the Buddhist vegetarian diet: The Good Food Fund adopts the stricter definition of Buddhist vegetarian, which is vegan excluding the "five strong-flavored foods". Originally, these included garlic, chives, Chinese onions, garlic chives, and asafetida. These days, the "five strong-flavored foods" include all the pungent herbs and spices from the *Allium* genus and *Ferula* genus.

## Special Clarification

The Good Food Fund's standard for "good food" represents our "ideal" vision of how foods should be produced and consumed. We recognize and encourage improvements towards the ideal situation, but we only actively promote practices and products that meet our standard. The standard includes plant-based foods produced in harmony with nature in a socially responsible way for direct (local) human consumption.

In the context of the Food Forward Forum, we have adjusted our practice to include menus that are at least 85% plant-based, with 15% or less of the foods coming from animal products or seafood, but only those that come from ecologically-sound farms and fisheries with the highest animal welfare standards and practices. These percentages mimic the standards Yale Hospitality targeted and implemented in all of its university cafeterias as part of a broader sustainability agenda.

The background of the page is a high-quality photograph of fresh produce. In the foreground, several bright orange carrots are laid out diagonally across a light-colored, weathered wooden surface. To the left, a bunch of green leafy vegetables, possibly kale or chard, is partially visible. In the upper right corner, two ripe red apples are shown. The lighting is soft and natural, highlighting the textures of the vegetables and the wood.

# Part II

## Deeper Dive: The Issue Nexus

SIX THEMES THE GOOD FOOD FUND USES TO FRAME FOOD AND SUSTAINABILITY

# Why Food?

Food is at the center of a nexus of complex ecological, socio-economic, and philosophical issues that we will break down over the next few pages.

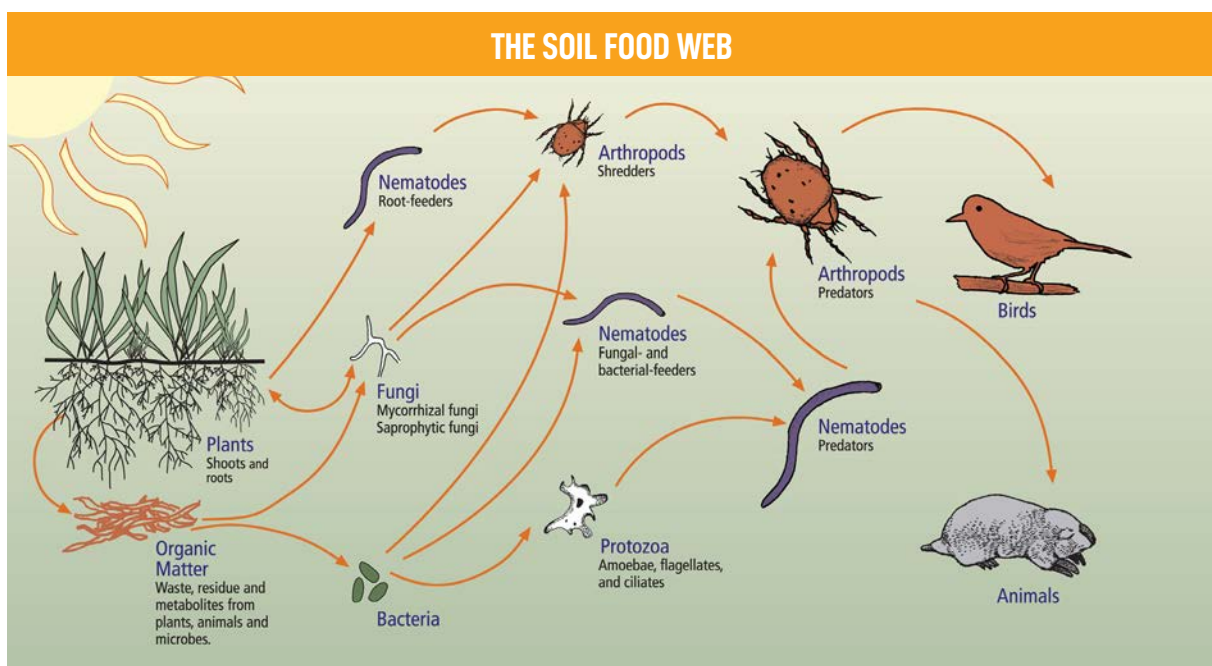


# Climate Change and Ecosystems

If human civilization is a tree, the ecosystems are the roots. The air we breathe, the water we drink, and the food we eat, all rely on a healthy ecosystem.

Soil is an ecosystem, perhaps the most relevant one to us and our food. According to the FAO, 95% of food comes from the soil directly or indirectly.<sup>7</sup>

Rich in minerals, the soil ecosystem is home to numerous microbes, plants, and animals. The health of these critters marks the health of the soil. Healthy soil lays the foundation for nutritious food, strong people, and prosperous societies.



Source: United States Department of Agriculture (USDA) Natural Resources Conservation Service, 2000

<sup>7</sup> FAO. Healthy soils are the basis for healthy food production. <http://www.fao.org/3/a-i4405e.pdf>

The health of an ecosystem builds on two main pillars – complete nutrient cycles and abundant biodiversity.

The core of sustainable agroecology is to protect soil health and ecosystems' health from these aspects.

- **Complete nutrient cycles:** turn the waste from every living being into nutrients for another. For example, make your own compost, or return composted manure to the field.
- **Biodiversity:** increasing the number of species in the field helps build a diverse and resilient ecosystem on the farm.

On the contrary, the conventional food system is harming ecosystems and threatening the survival of the human race. For example, industrial animal farming systems:

- Raise large amounts of animals in high concentrations, rely on commercial feed, and produce huge amounts of waste that can hardly be returned to the soil. **The nutrient cycle featuring “plants, animals, manure” has been broken**, leading to air, water, and soil pollution.
- Convert vast areas of natural grasslands, tropical rainforests, and other ecosystems into agricultural lands for producing feedstuff (e.g. soybeans), illustrated in the image below. This accelerates the extinction of wild flora and fauna, **damages biodiversity**, and hurts the stability and resilience of ecosystems.

The changes human beings are making to ecosystems are rocking the foundation of our own existence. Climate change is one of the most serious ecological crises we face today.



The stark contrast between forest and agricultural landscapes near Rio Branco, Acre, Brazil  
Photo by Kate Evans/CIFOR



Mass soybean harvesting at a farm in Campo Verde, Mato Grosso, Brazil  
Photo credit © Alffoto via World Wildlife Fund

Ten thousand years ago, the Earth entered an era with a relatively stable climate, which allowed unprecedented development of agricultural civilizations.

However, since the industrial revolution, we have been emitting **greenhouse gases (GHGs)** such as carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O) into the atmosphere at an accelerating rate, which **broke the nutrient – especially the carbon – cycles**.

GHGs trap heat in the atmosphere, causing a "greenhouse effect" that is rapidly changing the planet's climate, resulting in extreme temperatures, more frequent and severe storms and droughts, melting glaciers, rising sea levels, etc.

Many lifeforms on Earth, including us humans, have never experienced changes at such huge scales. In

terms of agriculture and food, climate change is affecting crop yield, triggering price fluctuations and social conflicts.

Although cutting industrial emissions is crucial, food is also an indispensable part of the solution.

According to researchers at Oxford University, **the food system is responsible for 20% to 30% of all anthropogenic GHG emissions**, with agricultural production being the biggest contributor, especially animal farming.<sup>8</sup>

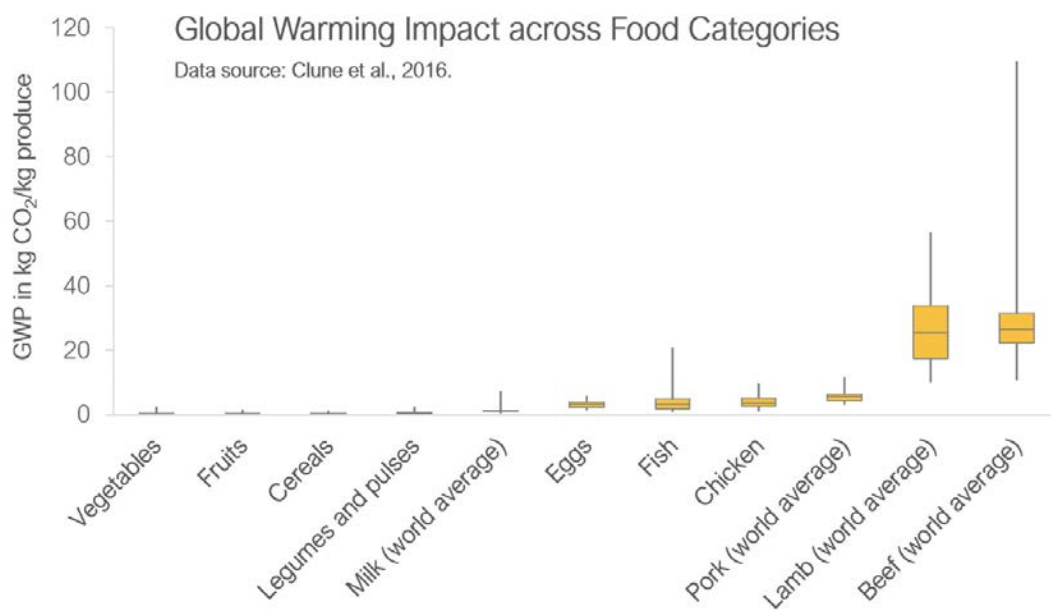
The major sources of GHGs in the food system include: deforestation due to farmland and ranchland expansion; soil damage from tilling, fertilizers, and pesticides; waste from industrial animal farming; fossil fuels in the agri-food value chain, as well as the handling of wasted food.

According to a 2013 FAO report, the livestock industry emits 14.5% of all anthropogenic GHGs, more than the combustion, or burning, of fuels in all the cars, ships, and airplanes in the world.

Major sources of GHGs in the livestock industry include:

- Production, processing, and transport of animal feed (45%);
- CH<sub>4</sub> from the digestive activity of ruminants (40%);
- CH<sub>4</sub> and N<sub>2</sub>O from the handling of animal waste (10%);
- Energy use in other sections of the value chain (5%).<sup>9</sup>

Different food products have different emission intensities (the amount of GHGs emitted to produce 1 kilogram of that food product).



The graph above shows the emission intensities of different food categories. It also shows that different production methods can result in different emission intensities. In the case of beef, for example, among the samples studied, producing 1 kg of beef can emit as low as 11 kg CO<sub>2</sub> or as high as 110 kg CO<sub>2</sub>, while 50% of the samples studied emit between 22 and 32 kg CO<sub>2</sub>, which is indicated by the yellow box.<sup>10</sup>

8 Food Climate Research Network. Foodsource. Chapter 3. Food systems and greenhouse gas emissions. <https://www.foodsource.org.uk/chapters/3-food-systems-greenhouse-gas-emissions>

9 FAO. Tackling Climate Change through Livestock. <http://www.fao.org/3/a-i3437e.pdf>

10 Clune, S. et al. 2017. Systematic review of greenhouse gas emissions for different fresh food categories. *Journal of Cleaner Production*, 140(2): 766-783. <https://www.sciencedirect.com/science/article/pii/S0959652616303584?via%3Dihub>

## THE PARIS AGREEMENT



In December 2015, at the United Nations Climate Change Conference in Paris, France, 195 countries signed onto the Paris Agreement.

The agreement is a non-binding text calling on signatory countries to deliver measurable intended nationally determined contributions to keep the planet's warming to less than 2 degrees Celsius above pre-industrial levels, with an aspirational target of 1.5 degrees, the arguably conservative scientific benchmark for the maximum amount of warming to prevent catastrophic climate change.

Even though the Paris Agreement was considered a major milestone and offered hope to much of the world, specific discussions about "fossil fuels", "oil", "coal", and "meat" were absent from the text, illustrating how the process relies on aspiration rather than proscription to reduce GHGs.

# Nutrition, Health, and Well-being

Many steps in the food production and consumption process can directly or indirectly affect the health and well-being of the producers, the consumers, and the public.

Two main aspects include: **diet and non-communicable diseases**, and the **public health impacts of food production**.

## DIET AND NON-COMMUNICABLE DISEASES (NCDs)

NCDs are responsible for 88% of deaths in China.<sup>11</sup> Unhealthy diets have led to a rapid increase in obesity, type 2 diabetes, cardiovascular diseases, and certain types of cancer.

In April 2019, an article published in *The Lancet* by the Global Burden of Disease (GBD) 2017 Diet Collaborators revealed the results of the most comprehensive analysis on the health effects of diet ever conducted: globally, unhealthy diet had become the top risk factor for mortality. Over-intake of sodium, as well as lack of whole grains, fruits, nuts and seeds, vegetables, and omega-3 fatty acids were found to be the most influential factors.

The research also showed that in a world-average diet, the amount of red meat (classified as a Group 2A carcinogen by the World Health Organization, WHO) intake had exceeded the optimum intake level, and processed meat (classified as a Group 1 carcinogen by the WHO) had far exceeded the optimum intake level.<sup>12</sup>

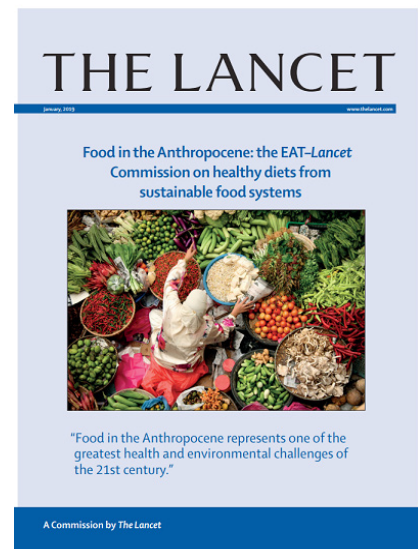
11 The Centers for Disease Control and Prevention. CDC in China. [https://www.cdc.gov/globalhealth/countries/china/pdf/17\\_China\\_Fact-Sheet.pdf](https://www.cdc.gov/globalhealth/countries/china/pdf/17_China_Fact-Sheet.pdf)

12 Global Burden of Diseases, Injuries, and Risk Factors Study. 2017. Health effects of dietary risks in 185 countries, 1990-2017: a systematic analysis for the Global Burden of Disease Study 2017. [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(19\)30041-8/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(19)30041-8/fulltext)

The result echoes a 2019 report released by the EAT-Lancet Commission, which proposed a "Planetary Health Diet", a relatively more sustainable diet that meets nutritional needs and helps prevent many NCDs.

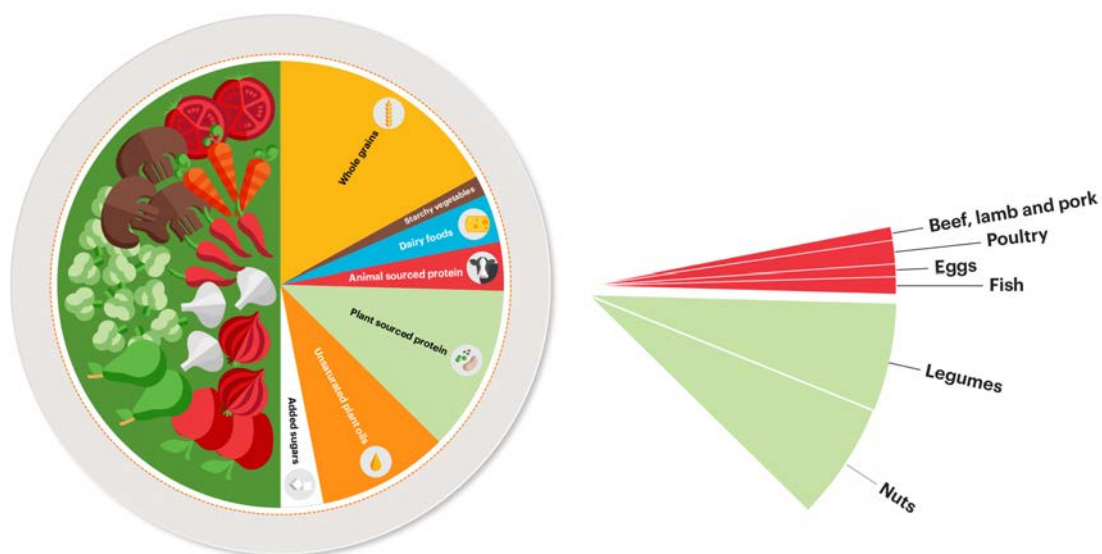
The Planetary Health Diet emphasizes the intake of fresh vegetables, fruits, whole grains, and plant-sourced proteins, while suggesting to lower the intake of animal-sourced protein and dairy foods.<sup>13</sup>

In 2017, the average person in China consumed 60.5 kg of meat.<sup>14</sup> This is twice the amount suggested by the 2016 Chinese dietary guidelines.<sup>15</sup>



The cover of the full report of the EAT-Lancet Commission

## THE PLANETARY HEALTH PLATE



Source: EAT-Lancet Commission, 2019

13 Willett, W., Rockström, J., Loken, B., Springmann, M., et al. 2019. Food in the Anthropocene: the EAT-Lancet Commission on healthy diets from sustainable food systems. EAT-Lancet Commission on healthy diets from sustainable food systems. [https://doi.org/10.1016/S0140-6736\(18\)31788-4](https://doi.org/10.1016/S0140-6736(18)31788-4)

14 Ritchie, H., Roser M. Meat and Dairy Production. Our World in Data (last revision November 2019). <https://ourworldindata.org/meat-production>

15 Chinese Nutrition Society. Chinese Dietary Guidelines 2016. <http://dg.cnsoc.org/article/04/8a2389fd5520b4f30155be01beb82724.html>

## FOOD PRODUCTION AND PUBLIC HEALTH



The waste lagoon at a concentrated pig farm.  
Photo courtesy of Steve Reid

In large-scale industrial animal farms, hundreds and thousands of animals are highly concentrated, creating a breeding ground for germs. Bacteria and viruses can easily contaminate foods and lead to food-borne diseases. They can also be passed on to other farms and the public by farm workers, feed, and equipment to cause large-scale epidemics such as avian flu and swine flu.

In China, as much as 50% of the antibiotics are used to prevent infection and promote animal growth, which is accelerating the evolution of “superbugs” that can resist many antimicrobial drugs. Globally, by 2050, antimicrobial resistant infection might lead to 10 million deaths every year, a number larger than the death toll of cancer.<sup>16</sup>

Pollution caused by animal farming is also a health threat to nearby communities. Researchers in the United States found that it was much more likely for people who live near concentrated animal farms to be diagnosed with asthma than those who live farther away. Children are especially susceptible to the harm caused by air pollution from those farms.<sup>17</sup>

Meanwhile, workers in the farms and slaughterhouses are exposed to hazardous environments while performing risky tasks for long hours. Some even develop mental illness due to the stress caused by repeated violence they had to perform.<sup>18</sup>

16 Review on Antimicrobial Resistance. 2016. Tackling Drug-resistant Infections Globally. [https://amr-review.org/sites/default/files/160525\\_Final%20paper\\_with%20cover.pdf](https://amr-review.org/sites/default/files/160525_Final%20paper_with%20cover.pdf)

17 The Pew Commission on Industrial Farm Animal Production. 2008. Putting Meat on the Table: Industrial Farm Animal Production in America. Executive Summary. [http://www.pewtrusts.org/~media/Assets/2008/PCIFAP\\_Exec-Summary.pdf](http://www.pewtrusts.org/~media/Assets/2008/PCIFAP_Exec-Summary.pdf)

18 Eisnitz, G.A. *Slaughterhouse: The Shocking Story of Greed, Neglect, and Inhumane Treatment Inside the U.S. Meat Industry*. Amherst, N.Y.: Prometheus Books, 2007.

# Socio-economic Development

The current economic system emphasizes monetary values, efficiency, and standardization while ignoring other values that exist in the production and exchange processes but can hardly be monetized, especially environmental, health, and social values.

In agri-food systems, such imbalance has led to a series of social ailments, such as conflict between animal producers and nearby communities, corporate control of food, mistrust between producers and consumers, as well as the loss of some traditional values and culture.

Since 1980, the livestock industry in China has gone through major transformations. The once-popular backyard farming has largely been replaced by small- to medium-scale intensified animal farming, which in turn are being pushed out of the market by large producers and meat-packing integrators.<sup>19</sup>

Such transition has made meat more accessible for consumers (see page 19), but with many consequences:

- **Large animal farms rely on subsidies** that are paid for by taxpayers indirectly;
- **Smaller, less competitive producers lose their ground**, leading to unemployment and market oligopoly;
- **Consumers increasingly rely on supermarkets and e-commerce platforms** for meat and produce, thus can hardly connect with food producers to establish transparent and cooperative social relations;
- **Consumers no longer know where their food comes from**, and the cultural context of the relationship between humans and animals has been lost (see page 28).

<sup>19</sup> Bai, Z., et al. 2018, ibid.

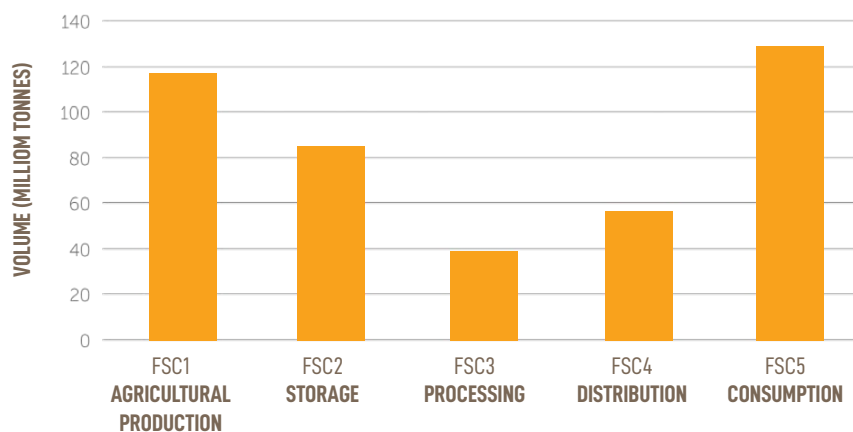
# Food Security and Food Waste

Thanks to economic development, China has largely eliminated hunger. But the abundance and shifting dietary structure pose a new question: how can the use of food be more effective and reasonable?

Globally, about one third of all the food produced is lost or wasted.<sup>20</sup> In China, as much as 3.65 million tons of food is lost or wasted every year, which is equivalent to the total amount of imported food and worth tens of billions of dollars, enough to feed hundreds of millions of people.<sup>21</sup>

As shown below, food consumption has become the major source of food waste in the supply chain in China, requiring urgent awareness-raising.<sup>22</sup>

**CHINA FOOD WASTAGE VOLUMES, BY FOOD SUPPLY CHAIN PHASE**



Sources: FAO, 2013 / Collective Responsibility, 2015



Source: Daily Acts, 2017

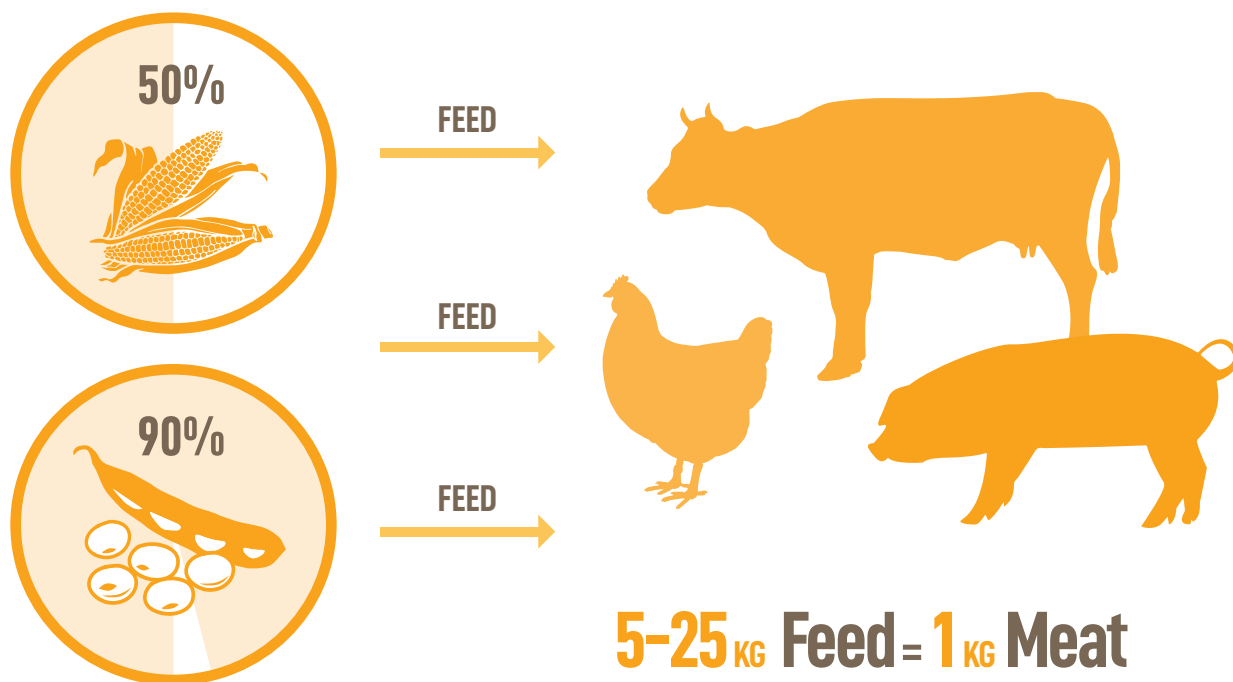
The United States Environmental Protection Agency - along with many sustainable food groups and advocates - promotes a food recovery hierarchy for reducing commercial food waste (see image on the right).<sup>23</sup>

<sup>20</sup> FAO. Food Loss and Food Waste. <http://www.fao.org/food-loss-and-food-waste/en/>

<sup>21</sup> FAO. 2015. Reduction of food loss and waste urgent in China. <http://www.fao.org/save-food/news-and-multimedia/news/news-details/en/c/350718/>

<sup>22</sup> Collective Responsibility. 2015. China's Food Waste Challenge. <https://www.coresponsibility.com/chinas-food-waste-challenge/>

<sup>23</sup> United States Environmental Protection Agency. Food Recovery Hierarchy. <https://www.epa.gov/sustainable-management-food/food-recovery-hierarchy>



Meanwhile, nearly 50% of cereals and more than 90% of oilseeds in the world are processed into animal feed (with vegetable oils as the by-product), instead of being used to feed people directly.<sup>24</sup>

It takes 5 to 25 kilograms of feed to produce 1 kilogram of meat.<sup>25</sup> From the perspective of resource allocation, at a time when 800 million people are still starving, it could be considered wasteful to use so much land, freshwater, and energy to grow animal feed.

The demand for feed has posed a new form of food security challenge for China. China is the origin of soybeans, but the country is increasingly reliant on imported soybeans for feed as the demand for meat grows. In 2017, China imported 9.55 million tons of soybeans,<sup>26</sup> equivalent to 7.3 times the amount of soybeans produced domestically.

The imported soybeans usually come from highly industrialized, large-scale monocultures in South and North America. Mass-produced at the cost of ecological and human health, these soybeans are highly competitive price-wise. Chinese soybean farmers have been largely pushed out of the market, taking a devastating blow in the birthplace of soybeans.<sup>27</sup>

24 FAOSTAT. <http://www.fao.org/faostat/en/#home>

25 A Well-Fed World. Feed: Meat Ratios. <https://awfw.org/feed-ratios/>

26 Ministry of Commerce of the People's Republic of China. Department of Foreign Trade. Monthly Reports on China's Agricultural Commodities Trade (December 2017). <http://wms.mofcom.gov.cn/article/ztbx/ncpmy/ncpydtj/200603/20060301783733.shtml>

27 Institute for Agriculture and Trade Policy. 2014. The Need for Feed. [https://www.iatp.org/sites/default/files/2017-05/2017\\_05\\_03\\_FeedReport\\_f\\_web\\_0.pdf](https://www.iatp.org/sites/default/files/2017-05/2017_05_03_FeedReport_f_web_0.pdf)

# Animal Welfare

Advanced technologies have allowed the livestock industry to become highly specialized, concentrated, and mechanized. Meanwhile, farm animals have been moved far away from human beings and hidden behind solid walls.

However, the state of farmed animals is not only relevant in terms of their own health and the compassion of consumers, but also food safety.

A widely-adopted definition for **animal welfare** is the **Five Freedoms**:

An animal is in a good state of welfare if it is

**free from hunger and thirst,**

**free from discomfort,**

**free from pain, injury, or disease,**

**free to express normal behaviour, and**

**free from fear and distress.**<sup>28</sup>

Researchers found that poor animal welfare can cause stress that suppresses the immune functions of animals and promote food-borne diseases; genetic modifications for maximizing productivity might also compromise the healthiness and safety of the food.<sup>29</sup>



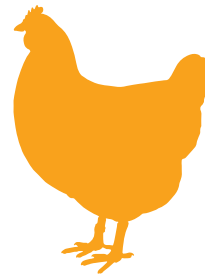
28 Farm Animal Welfare Council. Five Freedoms. <https://webarchive.nationalarchives.gov.uk/20121010012427/fawc.org.uk/freedoms.htm>

29 Boyle, L.A., and O'Driscoll, K. 2011. Animal welfare: an essential component in food safety and quality. *Food Chain Integrity: A Holistic Approach to Food Traceability, Safety, Quality and Authenticity*, pp 169-186. <https://www.sciencedirect.com/science/article/pii/B9780857090683500111>

Concentrated animal farms often cannot guarantee good animal welfare. Below are some situations that farm animals routinely find themselves in (using the case of egg laying hens and pigs as an example):

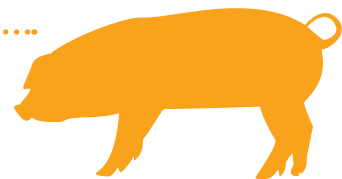
### **Egg laying hens:**<sup>30</sup>

- High-yield breeds often suffer from higher risk of calcium deficiency, osteoporosis, and bone fractures;
- Large numbers of hens are concentrated with high risk of diseases and mental stress that can lead to feather pecking;
- To prevent feather pecking and injuries, chicks often have part of their beaks cut off and hens their combs cut off without anesthetic, causing pain, trauma, and potential infection;
- Hens in narrow cages are deprived of their natural behaviours including spreading wings, cleaning feathers, walking, running, or flying;
- Male chicks are often ground alive after hatching since they cannot lay eggs.



### **Pigs for meat:**<sup>31</sup>

- Fast-growing breeds are more likely to suffer from crippling and cardiovascular diseases;
- Narrow and poor living environment causes mental illness for pigs that can lead to tail-biting and ear-biting, injuries, infection, and even death;
- To prevent fighting and injuries, piglets often have their teeth clipped, tail clipped, and genitalia removed without anesthetic, causing pain, trauma, and potential infection;
- Floor enclosures are often slippery, lack bedding, and slated for easy waste removal, leading to cripples;
- Sows in gestation crates and farrow crates are not able to turn around or move freely, making it impossible for them to take care of their piglets.



30 Compassion in World Farming (CIWF). Welfare issues for egg laying hens. <https://www.ciwf.com/farm-animals/chickens/egg-laying-hens/welfare-issues/>

31 CIWF. Welfare issues for commodity pigs. <https://www.ciwf.com/farm-animals/pigs/welfare-issues/>

# Food Ethics

Food is related to ethics. From the ancient saying that “a noble man stays far away from slaughter sites” to the rise of vegetarianism, fair trade, and local slow food movements, all foods reflect the values of their producer and consumer.

“Food ethics” touch on three main issues: well-being, autonomy, and justice:<sup>32</sup>

- **Well-being:** what will be good or bad for humans and animals, for their health and welfare?
- **Autonomy:** how far should people be free to make their own choices about what they eat?
- **Justice:** are our ways of producing and consuming food fair to everyone?

The Food Ethics Council also spelled out what food ethics mean for members in the food system:

RESPECT FOR	WELL-BEING (Health & Welfare)	AUTONOMY (Freedom & Choice)	JUSTICE (Fairness)
PEOPLE IN THE FOOD INDUSTRY	Income and working conditions	Freedom of action	Fair trade laws & practice
CITIZENS	Food safety & quality of life	Democratic informed choice	Availability of affordable food
FARM ANIMALS	Animal welfare	Behavioural freedom	Intrinsic value
THE LIVING ENVIRONMENT	Conservation	Maintenance of biodiversity	Sustainability

Source: Food Ethics Council, 2010

In the discussion of food justice, the concept of speciesism is worth noting.

**Speciesism** refers to discrimination based on species membership and is usually used to describe discrimination from human beings against non-human animals.

32 Food Ethics Council. Food Ethics in Practice. <https://www.foodethicscouncil.org/programme/food-ethics-in-practice/>

For example, treating chickens, pigs, cows, and sheep as food, cats and dogs as pets, while seeing human beings as superior to other animals, is a prevalent speciesist view.

The idea of speciesism was proposed by British psychologist **Richard Ryder** in the 1970s and popularized by Australian philosopher **Peter Singer**. In his book *Animal Liberation*, Singer reviewed the evolution of western societies' attitude towards non-human animals, dating back to **Judaism** and **ancient Greek** culture.

In the Holy Bible, human beings were granted a special status. In the Garden of Eden, humans were created to feed on fruits from trees and to rule over all other animals peacefully. It was after the fall of man when human beings were allowed to kill and eat animals and sacrifice them.

In ancient Greece, **Pythagoras** was a vegetarian and encouraged people to respect animals. However, Aristotelianism proved to have influenced the society in a more profound way.

**Aristotle** believed that rationality is unique to human beings. Those who are good at rational thinking are born to rule, those who lack the ability to think properly are born to be ruled. Therefore, "irrational" animals, as Aristotle saw them, are born to be ruled by human beings.<sup>33</sup>

Born in the Roman Empire, **Christianity** absorbed both the Judaist and ancient Greek views about the human-animal relationship and reinforced the belief that only human lives are sacred; human beings are superior to other beings.

Such belief provided the foundation for speciesism in western societies, which led to a series of abusive behaviours towards animals, and later underlaid the industrialization of agriculture and animal farming.

It was not until the eighteenth century when English philosopher **Jeremy Bentham** condemned human beings' violent dominion over animals. Bentham believed that abuse towards a living being should not be justified based on its ability to think, speak, or any external characteristics; **as long as a living being is capable of suffering, its welfare should be considered on equal terms**.<sup>34</sup>

Since then, many western thinkers have accepted the idea of animals' rights. However, most of them didn't implement the idea when it came to eating animals. Why not?

In order to answer this question, American social psychologist **Melanie Joy** promulgated the concept of "carnism", which explained many speciesist behaviours around us, such as why people love dogs but eat pigs.

33 Singer, P. *Animal Liberation: The Definitive Classic of the Animal Movement*. Reissue edition (February 24, 2009). Published by Harper Perennial Modern Classics.

34 Singer, P. *ibid*.

Joy believes that carnism has a deeply rooted ideology in western societies. It normalizes the behaviour of eating and exploiting animals so that it is difficult to break the habit. However, as soon as people are aware of this hidden ideology, it becomes much easier to make changes.<sup>35</sup>

Compared with the anthropocentric philosophies in the West, Asian philosophies – including the three major philosophies in China: **Confucianism, Buddhism, and Taoism** – tend to advocate for respect, understanding, and care towards other animals.

In the **Confucius** worldview, “**all living things grow together in their order without harming each other**”, while human beings, through learning the nature of all beings, are able to “**assist the forces of creation of the Universe**”,<sup>36</sup> which is similar to the ideal world in the Garden of Eden.

The **Buddhist** worldview includes reincarnation and karmic forces where lives are reborn into different life forms again and again. Therefore, the Buddha taught people to treat all living beings equally and with compassion, not to kill, and not to eat the meat of animals.

The **Taoist** worldview is that “**the myriad kinds of beings in the Universe co-exist with us, one kind**

**is no nobler than another, and the non-human beings are not bred for humans' sake**”,<sup>37</sup> and thus recognizes the intrinsic value of all beings. This philosophy aligns with the idea of equity and anti-speciesism from the West.



Photo by Wan Park/Brighter Green

**When applied to food, these philosophies translate into these principles:**

- Work with nature to produce food instead of against it. For example, practice agroecology, eat seasonally, and locally.
- Eat a diet that the human body is designed for, which mainly includes whole grains, beans, fruits, and vegetables, i.e. a plant-based or plant-centric diet.
- If one chooses to eat meat, the animal(s) should not have been raised or slaughtered in a way that causes suffering or ecological damage.

35 Joy, M. *Why We Love Dogs, Eat Pigs, and Wear Cows: An Introduction to Carnism*. 2010. Conari Press.

36 Doctrine of the Mean. *Book of Rites*. (《禮記·中庸》)

37 Explaining Conjunctions. *Liezi*. (《列子·說符》)

# Part III

## Chefs as Agents of Change

EXEMPLARY CHEFS FROM AROUND THE WORLD LEADING IN  
PRACTICES ACROSS OUR SIX THEMES



Food is at the center of a nexus of complex ecological, socio-economic, and philosophical issues – how are chefs fighting for a better food system?

Read on about a selection of inspiring chefs around the globe who are offering plant-forward creations at the heart of their kitchens...



# Chef Spotlight

## CLIMATE CHANGE AND ECOSYSTEMS

**SELASSIE ATADIKA**



Chef Selassie runs Midunu, a nomadic dining concept showcasing New African cuisine in Accra, Ghana. In January 2018, one of her nomadic dinners featured oft-forgotten African superfoods, including fonio, moringa, Bambara beans, baobab, sorghum, cocoa nibs, and prekese. The meal's theme encouraged consumption of local ingredients for their known health benefits, but also to support local farmers and economies.<sup>38</sup> Her work blends culture, community, cuisine, and sustainability.



“

With a background in environmental studies and practical involvement working on global nutritional crises and food insecurity, my life experience has shown the importance of eating lower on the food chain as a method to enable more people to access food. Why invest considerably more resources for few people to eat animal protein when those same resources could be spent growing lower cost, healthier food for consumption for all?<sup>39</sup>

”

<sup>38</sup> Midunu. <http://midunu.com/>

<sup>39</sup> Eat Forum. Q&A With Selassie Atadika. <https://eatforum.org/learn-and-discover/qa-with-selassie-atadika-plant-forward-50/>

## Plant-Forward Global 50

Chef Selassie and Chef Virgilio are on the Plant-Forward Global 50 list.

### VIRGILIO MARTÍNEZ 🇵🇪

Chef Virgilio has a popular restaurant in Lima, Peru called Central that highlights traditional and 'unknown' ingredients. He brings to the table curious ecosystems at different elevations in the country's unique landscape, reflecting a huge diversity in habitats and species. Once a year, he and his sister take a small group of diverse professionals working on food into the Amazon rainforest to experience the incredible biodiversity and instill the importance of species preservation. The annual event is called Momento, and is organized by Mater Iniciativa, a research institute that partners with Central. Their website describes the relationship this way:

“

The work process of one implies the research and knowledge of the other. Through Mater's research we locate ingredients that we then learn to use in Central's kitchen. Our motivation is to know the origin of those ingredients and tell their story from the beginning, and they are then presented to the world in the dishes we create. It inspires such emotion to interpret what grows in our Earth. The actions of Mater influence the soul of Central.<sup>40</sup>

”



<sup>40</sup> Mater Iniciativa. <http://materiniciativa.com/english.html>

# Chef Spotlight

## NUTRITION, HEALTH, AND WELL-BEING

### TONY LU

Chef Tony owns several restaurants in China, five in his hometown of Shanghai. One of these, Fu He Hui opened a few years ago and received a Michelin star when the Shanghai guide launched in 2016 and have since maintained. The restaurant is a fine dining showcase of haute vegetarian cuisine that Chef Tony conceived after being inspired by the zen-like ambiance of the space. He wanted the dining experience to reflect the peaceful atmosphere that encourages mindfulness. A meal of light, Shanghai-style fare can often last three hours. Chef Tony described the space in a 2018 interview with Food & Wine magazine:



“

It's the appropriate ambiance, the appropriate everything. The food becomes very powerful, and you'll remember the dishes vividly, because you were not forced or told. The information comes from your inner world—you feel the space, you feel zen. You feel that you're eating the right food tonight.<sup>41</sup>

”

Photo Courtesy of Mandarin Oriental Pudong

<sup>41</sup> Food & Wine magazine. Meet the Shanghai Chef Building a Different Kind of Restaurant Empire. <https://www.foodandwine.com/travel/restaurants/tony-lu-shanghai-chef-restaurant-empire-china>

## Plant-Forward Global 50

Chef Tony is on the Plant-Forward Global 50 list.

### BRYANT TERRY

Chef Bryant is a prominent food justice activist based in San Francisco, California. Mentored by the great chef activist Alice Waters, he advocates for community and racial justice alongside his vegan soul food creations. He reimagines the classic dishes of the Afro-Caribbean Diaspora with seasonal Southern flavors. Chef Bryant champions access to healthy foods for all, and how eating ecologically produced, plant-based ingredients can improve public health as well as social justice and the environment. He has written several books, hosted a public television series, and been featured in several documentary films.<sup>42</sup>

“

All communities, and low-income communities especially because of food insecurity and lack of access to healthy foods, need more farmers markets, need more community gardens and urban farms. It would be great if people living in communities had the tools and resources to grow food in their own backyard - community-based food systems.<sup>43</sup>

”



Photo by Margo Moritz

<sup>42</sup> Bryant Terry. Long Bio. <http://www.bryant-terry.com/longbio>

<sup>43</sup> Mother Jones. MoJo Video: Bryant Terry's Vegan Soul Kitchen. <https://www.motherjones.com/environment/2009/04/mojo-video-bryant-terrys-vegan-soul-kitchen/>

# Chef Spotlight

## SOCIO-ECONOMIC DEVELOPMENT



### CLAUDIA ALBERTINA RUIZ SÁNTIZ

Chef Claudia is part of the Tsotsil community, an indigenous group in San Cristóbal de Las Casas, Chiapas in southern Mexico. Her leadership in her restaurant Kokono is matched by her work outside of the kitchen. She promotes girls' education across her community, where girls are often not enrolled in school and lack access to formal employment opportunities. She has openly discussed her challenges fighting against machismo, or sense of exaggerated masculine pride, in school and her profession. Many of her classmates and colleagues were uncomfortable with a woman being a chef. Like her own mother inspired her, she hopes to serve as a role model for more girls so they too can push past the objectification and stereotyping of Mexican indigenous women, whom are expected to marry early and engage in domestic work.

Chef Claudia seeks to elevate the role of ingredients traditionally used by indigenous groups, such as kokone (a local tea plant, and the namesake of her restaurant) across the Mexican (and global) gastronomy scene. She highlights regional food from small-scale producers like beets, turnips, and amaranth greens. Such foods make up the



bulk of her own diet, as she only eats meat - chicken and beef - on special occasions. She works to instill appreciation for ingredients, where they came from and how they were produced, from the diners at her restaurant to other chefs and the general public. Kokono has its own vegetable garden for ultimate local food sourcing. Not surprisingly, she actively promotes the Slow Food movement and is part of the Alianza de Cociner@s, or Chefs' Alliance, network (discussed further on page 60).<sup>44,45,46</sup>

Photo by Roberto Molina Tondopó/Nicolás Pérez

44 The Seattle Globalist. Chef in Mexico seeks to instill taste for indigenous cuisine. <https://www.seattleglobalist.com/2019/04/25/chef-in-mexico-seeks-to-instill-taste-for-indigenous-cuisine/83571>

45 Notimia. Mujeres Indígenas en Terra Madre Salone del Gusto 2018: Claudia Albertina Ruiz Sántiz, chef tsotsil. <http://notimia.com/mujeres-indigenas-en-terra-madre-salone-del-gusto-2018-claudia-albertina-ruiz-santiz-chef-tsotsil/>

46 Slow Food México. La memoria de la Cultura Gastronómica Tsotsil en manos de la Chef Claudia Ruiz. <https://www.slowfood.mx/2017/04/la-memoria-de-la-cultura-gastronomica-tsotsil-en-manos-de-la-chef-claudia-ruiz/>

**JENNIFER YEH**  

Jennifer Yeh is a baker and school lunch consultant. She grew up in Tainan, Taiwan and lived in the United States for a number of years. In 2006, she moved to Beijing with her family, where she opened Boulangerie Nanda, a small bakery named after her daughter, to serve additive-free baked goods through local marketplaces.

In 2018, Jennifer became a school lunch consultant for her daughter's school, Daystar Academy. The Academy pioneered organic healthy school lunch in 2010 and developed connections with a number of small- and medium-scale local, ecological farms.

As the number of students grew, the school needed more suppliers. Jennifer volunteered to utilize her connections at the Beijing Organic Farmers' Market to expand the resource pool and harness the Market's quality control mechanism to ensure healthy and ecologically grown food.

Meanwhile, Jennifer worked with the kitchen team to develop menu items and trained them to cook with local and seasonal produce. Now, the team creates one new seasonal dish for each of the 24 solar terms throughout the year, and one dish inspired by a talented parent every other Wednesday.<sup>47</sup>

The partnership enhanced the social network that benefited all the stakeholders: the students, the parents, the farmers, and the school, while inspiring food activists nationwide.



47 谷声.《本地采购、直营食堂:校餐如何让城乡生活都更美好》. <https://www.douban.com/note/659429238/>

# Chef Spotlight

## FOOD SECURITY AND FOOD WASTE

### LI QUN

Chef Li began working in professional kitchens when she was 18 years old and has been practicing culinary arts for half a century. She specializes in preparing China's wheat and rice products, including pasta, desserts and dim sum. She is an enthusiastic instructor, culinary leader, consultant, and cookbook author, who has taught and inspired thousands of young chefs. Chef Li advocates a healthy and balanced diet and always tries to use ingredients to their fullest. She urges her students and team members to use plant-based and chemical-free condiments and cotton cloth instead of disposable plastics.



Photo: Good Food Fund

“

In China, I think the Good Food Pledge represents a good start to raise awareness [about food waste] among customers. The next step is to influence the food industry.

From my point of view, cooking in the traditional way is the way to minimize food waste in China. For example, green onion is a common ingredient in our kitchen. Usually, we only use the leaves and throw away the roots. In fact, green onion roots are effective for preventing colds; the same is for cabbage root, parsley root and radish root. The roots are a natural medicine for us.

”

**PALMIRO OCAMPO** 🇵🇪

Chef Palmiro is driven by a desire to end hunger and food waste in his native Peru. In culinary school, he was shocked by the huge amount of scraps that many professional kitchens waste (in fact, the average rate of food waste in fine dining establishments is about 65%).<sup>48</sup> To spread awareness, he hosted a national television show to educate viewers how to utilize scraps and leftovers to achieve zero waste in their own kitchens.<sup>49</sup> With his wife, he co-founded a social research and development organization, Ccori (which translates to 'treasure' in Quechua, the language of several South American indigenous groups), to help develop new and better techniques to reduce waste and repurpose otherwise 'inedible' raw material. After his fine dining restaurant 1087 in Lima closed in 2017, he focused more on Ccori and opened a free-range egg-focused restaurant that operates with the zero-waste concept. He also has a couple other businesses in the works, and hopes to scale-up the zero-waste movement (what he calls 'optimal cooking') and, with the right partnerships, end hunger in Peru by 2030.<sup>50</sup>



Photo courtesy of CCORI/Facebook

48 McAdams, B., von Massow, M., Gallant, M., and Hayhoe, M. 2019. A cross industry evaluation of food waste in restaurants. *Journal of Foodservice Business Research*. <https://doi.org/10.1080/15378020.2019.1637220>

49 Ozy. The Peruvian Chef Daring to Serve Recycled Food and End Hunger Nationwide. <https://www.ozy.com/rising-stars/the-peruvian-chef-daring-to-serve-recycled-food-and-end-hunger-nationwide/79698>

50 Cook Concern. Palmiro Ocampo (Ccori): The chef who takes advantage of the parts that you do not eat from the food. <https://www.cookconcern.com/en/blog/post/palmiro-ocampo-ccori-the-chef-who-takes-advantage-of-the-parts-that-you-do-not-eat-from-the-food/>

# Chef Spotlight

## ANIMAL WELFARE

LI YAN 

Chef Li Yan, originally from Henan, began his culinary journey at age 19 when he was hired as a dishwasher at a family-owned pizzeria in. He revealed his mastery on the day he stepped in to help prepare food when the cook was out sick. Early in his career, Chef Li traveled to Ireland, Switzerland, Greece, Italy, Spain, Japan, and Thailand and became inspired by established chefs, international culinary traditions, and local cuisines. He promotes plant-based eating at his own restaurant, Charlie's Coffee, through Meatless Monday, and by educating his staff about vegetarian food and animal welfare. He is the winner of the Good Food Fund's 2019 Good Food Designer Contest.



Photo: Good Food Fund

“

In my opinion, if 'plant forward' is a priority for the restaurant, then it's possible to choose [high] animal welfare products for the customers. We organize staff training in our restaurant and share the knowledge and information about vegetarian food and animal welfare that I have learned. We plant 'seeds' in everyone's consciousness.

It's necessary to exchange opinions and experience among chefs. For example, chefs can share recipes, and share their own successes or failures in developing plant-forward menus at events such as Good Food Summit and the Chef's Manifesto.

”

**WILLIAM DISSEN** 

Chef William has always enjoyed fishing. As a chef, he finds it imperative to maintain sustainable seafood sourcing. He is part of Seafood Watch's Blue Ribbon Task Force, which pushes producers for quality, ocean-friendly products while working to spread awareness to customers, colleagues, and policy makers.<sup>51</sup> He teaches people about sustainable seafood consumption and how chefs can uniquely impact sourcing methods:

“

Sourcing sustainably and locally was always my first choice when looking for the best ingredients because they come from people who care about the animals they are raising, the process in which they are growing their plants and tending to their animals, and they care about the impacts their decisions make toward our planet. Sourcing sustainably equals having a greater outlook on the future. If we take care of our farms, fields, and oceans now we will also be able to harvest from them in the years to come.<sup>52</sup>

”



Photo by Market Place Restaurant

51 Seafood Watch: Blue Ribbon Task Force. <https://www.seafoodwatch.org/businesses-and-organizations/blue-ribbon-task-force>

52 EthicalFoods. Your Chef and Climate Change: William Disсен of Market Place Restaurant. <https://ethicalfoods.com/your-chef-and-climate-change-william-dissen-of-market-place-restaurant/>

# Chef Spotlight

## FOOD ETHICS

### JEONG KWAN 🇰🇷

Chef Jeong Kwan is a Zen Buddhist nun, and head of Baekyangsa temple in South Jeolla province, South Korea. She's also a world-renowned chef, earning great respect from culinary giants like Eric Ripert and David Chang, although she has no restaurant, nor received any formal culinary training. Yet she and the temple receive a great number of visitors from many parts of the world, anxious to taste her famous temple cuisine.



Chef Jeong Kwan grew up on a farm, but left in her late teens to become a nun. She determined her spiritual calling was to "[communicate] with sentient beings through the medium of food..."<sup>53</sup> Her simple eco-friendly, eating-well practices are firmly rooted in her philosophy to live harmoniously with others and the natural world.<sup>54</sup>

53 The New York Times Style Magazine. Jeong Kwan, the Philosopher Chef. <https://www.nytimes.com/2015/10/16/t-magazine/jeong-kwan-the-philosopher-chef.html>

54 Plant-Forward Global 50. Chef Jeong Kwan - Bio. <https://www.plantforward50.com/chefs/jeong-kwan#bio>

55 National Geographic. Coming to Grips with Food Ethics for Chefs. <https://www.nationalgeographic.com/people-and-culture/food/the-plate/2014/10/15/food-ethics-for-chefs/>

56 Esquire. José Andrés is Feeding Government Workers During the Shutdown. <https://www.esquire.com/food-drink/a25684681/jose-andres-government-shutdown/>

57 VegNews magazine. Celebrity Chef José Andrés Says the Future is Plant-Based. <https://vegnews.com/2018/3/celebrity-chef-jose-andres-says-the-future-is-plant-based>

58 World Central Kitchen. Our Mission. <https://wck.org/mission>

59 WBUR - Boston's NPR News Station. *Here & Now*. José Andrés Wants To Change The Way You Think About Vegetables. <https://www.wbur.org/hereandnow/2019/05/23/jose-andres-vegetables-unleashed-cookbook>

## Plant-Forward Global 50

Chef Jeong Kwan and Chef José are on the Plant-Forward Global 50 list



### JOSÉ ANDRÉS

Chef José is not only a well-known restaurateur, but also an activist for several food-related causes. He penned an article as part of National Geographic magazine's *Future of Food* series in 2014, discussing a campaign with fellow celebrity chef Tom Colicchio against a United States bill that would weaken labeling requirements for food producers who use genetically modified organisms, commonly referred to as the Denying Americans the Right to Know (DARK) Act.<sup>55</sup> He has also stepped up and offered help and food for those in need, from his humanitarian relief work in hurricane-devastated Puerto Rico to offering United States federal employees a daily free meal during a political government shutdown in early 2019.<sup>56</sup> Putting his values first, he pulled out of a developing restaurant project in the Trump International Hotel in Washington, D.C. after presidential candidate Donald Trump disparaged immigrants in a 2015 speech.<sup>57</sup> He founded a nonprofit organization, World Central Kitchen, after a devastating 2010 earthquake in Haiti to involve chefs in developing smart solutions to poverty and hunger.<sup>58</sup>

Chef José is also a proponent of plant-forward cooking. He owns a vegetable-centric fast casual chain, Beefsteak, with outlets in Washington, D.C. and Philadelphia. In May 2019, he released a cookbook highlighting vegetables and hopes to elevate them for those who may be 'veggie-phobic'. In a radio interview discussing the book, he stated:

“

[Vegetables] deserve more respect than the respect we're giving them... If we want to be feeding the world, I believe that vegetables are going to have to be at the center of the plate.<sup>59</sup>

”



Photo by Jason Kindig

# Culinary Creativity and Insp



Photo by Brent Herrig

**Chef Amanda Cohen** owns the award-winning vegetable restaurant, Dirt Candy, in New York City. It was the first vegetable-*focused* restaurant (versus those branded vegan or vegetarian) in the city when it opened in 2008. She has been nominated for the James Beard Award's Best Chef in New York City the last two years.<sup>60</sup> She offers this insight into how she experiments with plants:

“

I find a lot of inspiration in seeing what other cuisines do with vegetables, like Korean or Mexican cooking. Or I look at a technique like smoking or making pâté and try to think about how to apply that to a vegetable.<sup>61</sup>

”



Photo credit: Dirt Candy

## Portobello Mousse

One of its signature dishes, portobello mousse has been on the menu in various versions since Dirt Candy opened. It is served in its current incarnation with cherries, Asian pears, and tiny rounds of truffle toast.<sup>62</sup>



Photo credit: Dirt Candy

## Smoked Cabbage Hot Pot

Dirt Candy's take on a Chinese hot pot for two or more diners: a kettle of smoked cabbage broth served warm, alongside a selection of sauces and accompaniments for personalized taste.<sup>63</sup>

60 Maggie Marguerite Studio. Amanda Cohen (Dirt Candy). <https://www.maggiemarguerite.com/chefs/2019/2/28/amanda-cohen-dirt-candy>

61 Food News Feed. Winning Plant-Forward Menus. <https://www.foodnewsfeed.com/fsr/flavor/winning-plant-forward-menus>

62 Dirt Candy. Menu. <https://www.dirtcandynyc.com/menu>

63 Dirt Candy, *ibid.*

# iration

## CHEFS REINVENTING PLANTS



Photo by Tairroir

**Chef Kai Ho** is a Taiwanese chef who blends the French flare of his culinary training with deconstructed Taiwanese classics.<sup>64</sup> He opened his first restaurant Tairroir in 2016, which earned its first Michelin star in 2018, followed by another in 2019. The name of the restaurant plays off of Taiwan and *terroir*, a term derived from the French philosophy that a totality of environmental factors determine the character of a particular crop.<sup>65</sup> While not overwhelmingly plant-forward, his exceptional plating and humorous dish-naming warrant inclusion.



Photo credit: Tairroir

### Heirloom Tomato "Collection"

A variety of tomatoes flavoured with white balsamic and black olives.<sup>66</sup>



Photo credit: Instagram / @kaiho1011

### "Beet" Wellington

Inspired by Alain Passard's Beetroot Tartare, Chef Kai created this special dish for the Chinese New Year celebration in 2018.<sup>67</sup>

64 French Chefs. Kai Ho. <http://frenchchefs.com/kai-ho>

65 Jet Set Times. Exclusive: Tairroir's Chef Kai Ho On Opening Taipei's Restaurant Of The Moment. <https://jetsettimes.com/travelers/foodies/tairroir-taipei/>

66 Instagram. Tairroir. 20 November 2016. <https://www.instagram.com/p/BNBtu04BvU3/>

67 Instagram. Tairroir. 20 January 2018. <https://www.instagram.com/p/BeMLZHqniGr/>

# Culinary Creativity and Insp



Determined to reconcile her love for both cheese and animals, **Chef Miyoko Schinner**, nicknamed the "Queen of Vegan Cheese", created a line of artisan cashew-based cheese varieties in 2014 under the brand Miyoko's Kitchen (now shortened to Miyoko's).<sup>68</sup> Since then, the company has grown rapidly and offered even more products, including a creamy coconut-based butter and spreadable vegan cream cheeses (all dairy, gluten, soy, and GMO free). Her products, with names like Rustic Alpine, Sharp English Farmhouse, and Winter Truffle, are meant to rival traditional European dairy in flavor and texture.



Photo by The Rose & Bean



Photo by Miyoko's

68 New Hope Network. Miyoko's Kitchen chef creates cheese that's better for people and the planet. <https://www.newhope.com/people-and-company-profiles/miyoko-s-kitchen-chef-creates-cheese-s-better-people-and-planet>

69 Forbes. This Woman Is Taking On The \$120 Billion Cheese Industry. <https://www.forbes.com/sites/vinettaproject/2018/05/15/this-woman-is-taking-on-the-120-billion-cheese-industry/#6b054e786782>

# iration

## CHEFS REINVENTING PLANTS



**Chef Guy Vaknin** was working at a kosher catering company's sushi station when the idea for Beyond Sushi was born.<sup>70</sup> Targeting pregnant mothers and other groups with food sensitivities or concerns about seafood sustainability or safety, he opened a fast-casual vegetable-based sushi restaurant in New York City in 2012.

While initially including dairy and eggs in his colorful sushi rolls and wraps, he quickly adapted to customer demand for a completely vegan menu. Fresh, seasonal, healthy ingredients are a mainstay of the restaurant - now with six Manhattan locations.



Photo credit: Instagram / @chefguyvaknin

### Spring 2019 Seasonal Roll

Black rice, blackened goguma, avocado, and baby arugula topped with lemon dill fava beans, puffed quinoa and tomato powder with lemon saffron sauce.<sup>71</sup>



Photo credit: Instagram / @beyondsushinyc

### Flower Top Dumplings

Charred broccoli, cauliflower, spinach, and potatoes with toasted lemon panko, chili oil and yuzu coconut mint sauce.<sup>72</sup>

70 Eater New York. Beyond Sushi, a Nutritious Alternative to White on Rice. <https://ny.eater.com/2014/9/12/6160367/beyond-sushi-a-nutritious-alternative-to-white-on-rice>

71 Instagram. Chef Guy Vaknin. 16 April 2019. <https://www.instagram.com/p/BwVZeWjgZNi/>

72 Instagram. Beyond Sushi. 10 May 2019. <https://www.instagram.com/p/BxTLgNbl3Fd/>

# Culinary Creativity and Insp

## CHEFS REINVENTING PLANTS



**Chef Hitoshi Sugiura** is the executive chef of a French-Japanese fusion restaurant, PATINASTELLA in Tokyo. In 2017, advised by fellow chef and colleague Masayuki Okuda, who has led a movement to bring back heirloom vegetables at risk of extinction in northeastern Japan with the help of local schools and universities,<sup>73</sup> he entered the Vegetarian Chance culinary competition in Milan, Italy.



For the competition, he created a dish with a modern twist on *Shōjin Ryōri*, or Buddhist devotional cuisine, called 'Bouquet'. The aptly-named dish showcased organic daikon, yuzu, tofu, ginger, soy sauce, hazelnuts, maple syrup, and a sesame seed puree garnished with Japanese pepper leaf buds. It was meant to express his gratitude for the concept of the event, as well as Japanese culinary tradition.<sup>74</sup> Pictured to the left, it's no wonder the dish won accolades. He's adapted it since, including at the inaugural Sakura Festival at Morimoto Asia in Walt Disney World.<sup>75</sup>

73 Slow Food International. Japan's Heirloom Vegetable Revival. <https://www.slowfood.com/japans-heirloom-vegetable-revival/>

74 Vegewel. An interview with Hitoshi Sugiura, top 8 ranked Japanese chef in a vegetarian cooking world competition. <https://vegewel.com/en/style/patinastella-sugiura-2>

75 Tasty Chomps. Morimoto Asia hosts first Guest Chef Series Dinner during their inaugural Sakura Festival. <http://tastychomps.com/2018/04/morimoto-asia-hosts-first-guest-chef-series-dinner-during-their-inaugural-sakura-festival.html>



iration

# Culinary Creativity and Insp

## CHINA



More innovative recipes can be found in  
the Good Food Roadshow cookbooks:

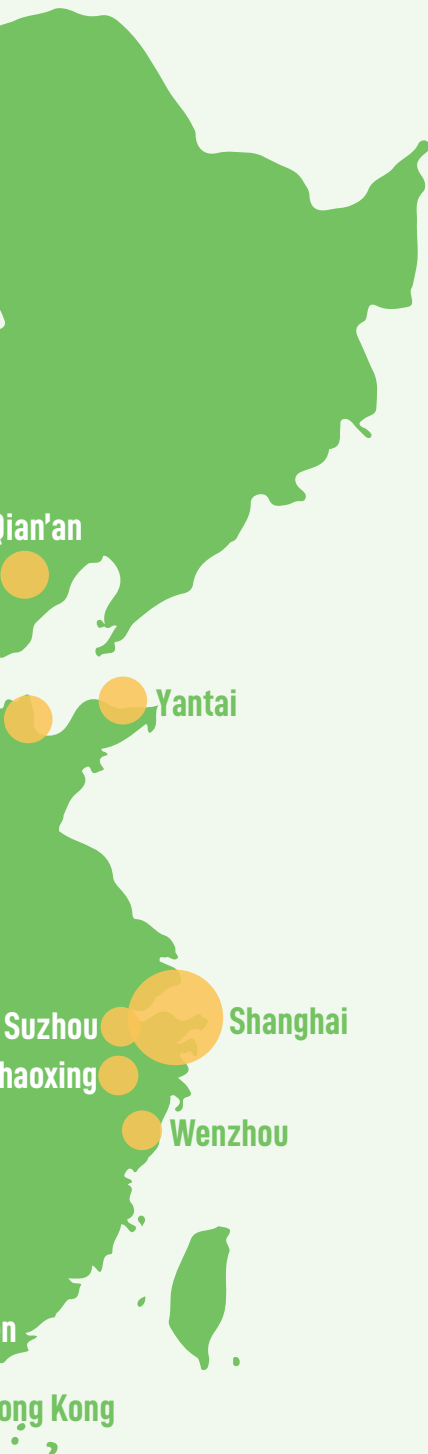


Book I



Book II

# iration



## Beijing

- ♥ Yeye Puti
- ♥ King's Joy
- ♥ Vege Tiger
- ♥ Bestease
- ♥ Feast Food by East
- ♥ Tribe Organic

## Shanghai

- ♥ Fu He Hui
- ♥ Wu Guan Tang
- ♥ HSH Veggie
- ♥ Green Vege Cafe
- ♥ WUJIE
- ♥ Vegetarian Life Style
- ♥ If Vegan
- ♥ Botanik

## Guangzhou

- ♥ Xin Tian Garden
- ♥ Shui Mu Sheng Vegan
- ♥ Hersels
- ♥ Vine Vegetable

## Shenzhen

- ♥ Planet Green
- ♥ QiKang Veg Fooding
- ♥ Orchid Veggie

## Hong Kong

- ♥ Grassroots Pantry
- ♥ Green Common

## Chengdu

- ♥ Hua Dao Yu Shan Ge

## Suzhou

- ♥ Su Wei You Shi

## Wenzhou

- ♥ Su He Hui

## Nanchang

- ♥ Jing Ju Su

## Zhongshan

- ♥ Su-Xi

## Yantai

- ♥ Ga'sang Flowers Bloom
- ♥ Miao Yu Xin Deng

## Shaoxing

- ♥ Pu Ti Shu Su Xin Zhai

## Dongying

- ♥ Yi Su Ban Cha

## Qian'an

- ♥ Sheng Hua Jiu Pin

## Part IV

# Food Policy Ruminations: The C

A SAMPLE OF POLICIES AND PROGRAMS TACKLING FOOD, HEALTH, AND SUST



A close-up photograph of a hand holding a slice of lime over a bowl of fresh green beans and purple cauliflower. The green beans are vibrant and fill the background, while the purple cauliflower and green bean are in the foreground, partially covered by the hand and lime slice.

# Global Context

SUSTAINABILITY

## SUSTAINABLE FOOD INITIATIVES:

### Local to Global Policy

There are a number of local, regional, national, and global sustainable food initiatives that in some way seek to influence policy directly or indirectly. It is not uncommon for many of these to be founded or led by chefs.

We hope that these examples, in addition to the activities of the Food Forward Forum and follow-up communication, inspire more unique, chef-led efforts in China.

# Networks, Labs, and Entrepreneurship

## SUSTAINABLE DEVELOPMENT GOALS AND ZERO HUNGER

To catalyze global action and prevent the worst impacts of climate change, world leaders attended a special summit at the United Nations in New York in September 2015 to adopt Resolution 70/1, or Agenda 2030, which introduced the Sustainable Development Goals (or SDGs).<sup>76</sup>

The 17 goals succeeded the Millennium Development Goals, forged in 2000, and provide a holistic framework, applicable to all countries, aiming to eradicate poverty and deprivation by 2030, but also to grow economies, protect the environment, and promote peace and good governance.<sup>77</sup>

## 17 GOALS TO CHANGE THE WORLD



76 United Nations. Transforming Our World: The 2030 Agenda for Sustainable Development. <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf>

77 United Nations, *ibid.*



## SDG2 ADVOCACY HUB

While all 17 goals are related to food, the goal with the most explicit connection is SDG2 (Zero Hunger). In order to improve advocacy efforts around this target to end hunger by 2030, and tackle more specific sub-targets and indicators, a coalition of non-governmental organizations (NGOs), agricultural networks, nutritionists, campaigners, civil society, the private sector, and UN agencies was established called the SDG2 Advocacy Hub.

### CHEFS' MANIFESTO

A growing part of the SDG2 Advocacy Hub is a campaign defining a new global conversation about food, called the Chefs' Manifesto. Led by Hub director, Paul Newnham, the initiative engages and amplifies the voices of chefs all over the world in order to contribute to the implementation of the SDGs, most specifically SDG2.

After initial workshops in New York City, London, and Milan, a manifesto with 8 thematic areas of focus was created in 2017, with input from over 130 chefs from 38 countries. The manifesto's contents are ideas and principles synthesizing the SDGs that are *by* chefs, and *for* chefs. It provides a centralized and motivated network where chefs can access and share information that will help them spur change in their own kitchens, as well as their communities.



#### The 8 themes of the Chefs' Manifesto are:

- Ingredients grown with respect for the Earth & its oceans
- Protection of biodiversity & improved animal welfare
- Investment in livelihoods
- Value natural resources & reduce waste
- Celebration of local & seasonal food
- A focus on plant-based ingredients
- Education on food safety & healthy diets
- Nutritious food that is accessible & affordable for all

In order to actualize these themes, an Action Plan was unveiled by 16 chefs from 13 different countries at the EAT Forum in Stockholm, Sweden in June 2018. The Plan provides simple actions that chefs can take across each thematic area:

**“We think chefs can be powerful advocates for a better food future – inspiring people to make changes in their kitchens and communities and empowering them to call on governments and companies to also play their part.”<sup>78</sup>**

We encourage the Food Forward Forum alumni and any chef that is able to join this exciting and growing network.

## CHEFS' MANIFESTO PARTNERSHIPS

### #ActNow

At the 2018 United Nations Climate Change Conference in Katowice, Poland, the UN launched the ActNow campaign, a global call for individual climate action. On Sustainable Gastronomy Day in June 2019, the UN kicked off the ActNow Food Challenge, encouraging individual climate action specifically around dietary choices. The campaign asks that people commit to eating less meat and more, diverse plant-based ingredients as well as reduce food waste.<sup>79</sup>



**#ACTNOW** FOOD CHALLENGE  
un.org/ActNow

It's no surprise that the Chefs' Manifesto partnered with the ActNow campaign to galvanize chefs to inspire measurable action from people around the world, providing tips for climate-friendly cooking and eating with examples from their own kitchens via social media.<sup>80</sup>

78 SDG2 Advocacy Hub. Chefs' Manifesto: Join our community today. <http://www.sdg2advocacyhub.org/chefmanifesto>

79 United Nations. Tackling climate change, one bite at a time, UN enlists chefs to lead in campaign for sustainable food. <https://www.un.org/sustainabledevelopment/blog/2019/06/actnow-food-challenge/>

80 SDG2 Advocacy Hub. Foodies: Act Now. <http://sdg2advocacyhub.org/actions/foodies-actnow>

## 2020FOR2020

Another recent collaboration is the 2020FOR2020 campaign with Forever Food, a multi-stakeholder partnership raising awareness about the need to protect the remaining diversity within our food system and improve resiliency.



Their mission is inspired by SDG Target 2.5—to maintain genetic diversity in food production by 2020. Forever Food's secretariat is run by the Global Crop Diversity Trust (Crop Trust) and the Dutch Government. It partners with politicians, farmers, chefs, businesses, and individuals to drive action on biodiversity.

# 2020 FOR 2020

2020FOR2020 launched in Paris, France at the Future 50 Forum in February 2019, calling on chefs to advocate for ingredient diversity within our food systems.<sup>81</sup> The campaign seeks to inspire 2,020+ chefs from across the world to champion biodiversity by 2020 through online showcases and in-person global food events throughout the year to demonstrate how chefs are uniquely positioned to inspire better, conservation-friendly ways of cooking and eating. They have a survey for interested chefs to join the campaign, and provide a map showing those that have already signed up.<sup>82</sup>

This global effort was announced alongside the release of Knorr and World Wildlife Fund's joint report, Future 50 Foods. The report shares information about 50 superfoods that grow and are available in a wide number of countries that

we should eat more of to promote a more sustainable global food system. These 50 foods, all plants, were selected because they are nutritious and have a lower impact on the environment than animal-based foods.<sup>83</sup>

# FOOD FOREVER

81 Food Forever. <https://www.food4ever.org/>

82 SDG2 Advocacy Hub. 2020FOR2020. <http://sdg2advocacyhub.org/actions/2020for2020>

83 Knorr. Future 50 Foods report. <https://www.knorr.com/uk/future50report.html>

# Networks, Labs, and Entrepreneur

## NORDIC FOOD POLICY LAB

The Nordic Food Policy Lab is one of six flagship projects under the "Nordic Solutions to Global Challenges" initiative, which was launched by the prime ministers of all five Nordic countries in 2017.

The overall objective is to encourage the application of Nordic policy solutions to help address food issues identified as challenges in the Sustainable Development Goals. The project establishes opportunities to advocate for innovative policies that encourage consumers to choose more sustainable food.

The Lab sponsored a full-day of programming at the UN Climate Change Conference in Bonn, Germany in November 2017 called Nordic Food Day, gathering journalists, policymakers, researchers, activists, entrepreneurs, and others together to collectively grapple with food-related challenges and identify opportunities.



In 2018, they released a 168-page guide called the "**Solutions Menu: A Nordic guide to sustainable food policy**". The document covers and summarizes the most innovative food policy solutions in the Nordic region. The Solutions Menu includes 24 policies that aim to shift food consumption and intends to inspire

# neurship

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new and robust policy responses to the societal and environmental challenges caused by our current food systems. The solutions are structured around the topics of nutrition, food culture and identity, public food procurement, food waste, and sustainable diets.

The Nordics have often been on the cutting edge of progressive food policy development. In 2004, they launched the New Nordic Food Manifesto, which combined a focus on health and ethical production practices with traditional foods. In 2017, various Indian stakeholders created a food manifesto inspired by the New Nordic philosophy.

In December 2018, the Food Safety & Standards Authority of India (FSSAI) invited the Nordic Council of Ministers to New Delhi to share their experiences developing sustainable food policies following the launch

of the Solutions Menu. This event was the first Indo-Nordic Food Policy roundtable, and focused largely on nutrition, especially India's "triple burden" of obesity, undernutrition, and malnutrition.<sup>84</sup>

# Networks, Labs, and Entrepreneurs

## INDIA

### Tasting India Symposium



After two years of preparation, co-founders Sanjoo Malhotra and Sourish Bhattacharyya launched the first Tasting India Symposium in December 2017. The symposium aims to share and amplify India's diverse culinary heritage, food destinations and agricultural produce, and the sustainable diet options it can offer to the rest of the world. One of the specific objectives is to "connect the international vegetarian movement with its peers here to popularise the Indian vegetarian diet as a sustainable option to reduce the planet's carbon footprint and create a long-term basis for food security". An important outcome of the symposium was the adoption and launch of the ten-pointed Indian Food Manifesto: Working Towards a Sustainable Food Culture.<sup>85</sup>

### Young Chefs' Association for Sustainable India



At the second symposium in 2018, the previously mentioned Indo-Nordic Food Policy workshop was held, promising further collaboration between FSSAI, a principal partner of Tasting India, and the Nordic Food Policy Lab (see page 58). Also at this event, various partners established the Young Chefs' Association for Sustainable India (YCA), with 600 initial members and 45 participating restaurants. The group's founder, Tasting India Symposium co-founder and renowned food critic, Sourish Bhattacharyya described the new network in an interview:

"Young Chefs' Association is a group of [food and beverage] professionals dedicated to improving culinary standards in India through continual professional development and international exposure to sustainable food practices and responsible sourcing... Our motive is simple. We want the new generation of chefs to minimise waste, promote local grains, reduce carbon footprint, and, in the long run, help farmers grow more local and seasonal crops".<sup>86</sup>



<sup>85</sup> Tasting India Symposium. <http://www.tastingindiasymposium.com/>

<sup>86</sup> That Girl in Muddy Boots. Young Chef's Association: Cooking together for a sustainable future. <https://thatgirlinmuddyboots.com/2018/09/07/young-chefs-association-cooking-together-for-a-sustainable-future/>

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## ITALY

### Slow Food

Now a global movement in 160 countries with 100,000 members, Slow Food began as an activist campaign led by Carlo Petrini to protest the opening of a McDonald's restaurant in Rome in the late 1980s. In 1989, the Slow Food Movement was officially founded in Paris with a signed Manifesto. The purpose of the movement is embodied in their logo, the snail, an animal known for its slow and steady way of moving. Its creation was a reaction to rapidly industrializing, western fast food-style production and consumption patterns far removed from traditional, ecological agricultural practices.<sup>87</sup>

One of many programmatic offshoots of the movement is the Slow Food Chefs'

Alliance, established in Italy in 2009; it now includes 1,102 chefs from 24 countries. The participating chefs have diverse backgrounds and cooking styles, but all share a commitment to protecting agricultural biodiversity and safeguarding gastronomic knowledge.



The project encourages chefs to purchase as many local ingredients as possible from known providers that are conscious of the environment, land stewardship, and animal welfare, for optimal transparency.<sup>88</sup>

### Rome Sustainable Food Project

Founded in 2007 under the guidance of Alice Waters, the Rome Sustainable Food Project (RSFP) operates within the American Academy in Rome, a residency program offering scholarships to innovative artists, writers, and thinkers. The RSFP nourishes creativity and connection by providing the community with seasonal, nutritious, and delicious food. Guided by the spirit of the Roman table and using the Academy's vegetable garden, the project aims to provide a replicable model of simple, sustainable food for other like-minded institutions. RSFP is sustained by a dynamic internship program and volunteers, and is also a member of Rome's Slow Food community.<sup>89</sup>



87 Slow Food International. <https://www.slowfood.com/>

88 Slow Food Foundation for Biodiversity. Slow Food Chefs' Alliance. <https://www.fondazione-slowfood.com/en/slow-food-chefs-alliance/>

89 American Academy in Rome. Rome Sustainable Food Project: About the RSFP. <https://www.aarome.org/about/rsfp>

# Networks, Labs, and Entrepreneurs

## TIMOR-LESTE FOOD LAB



Building upon their establishment of Slow Food Dili—the capital of Timor-Leste, also known as East Timor—in 2015, Alva Lim and Mark Notaras co-founded the Timor-Leste Food Lab in 2016. The Food Lab is a social enterprise funded entirely by a plant-forward partner restaurant and cafe, Agora Food Studio. Both aspire to shape a truly sustainable food system in Timor-Leste based on the production and consumption of nutritious, local foods. The restaurant focuses on using seasonal, plant-based ingredients, maintaining minimal waste, and reviving indigenous knowledge. They source 90% of their ingredients from small-scale farmers and local markets.

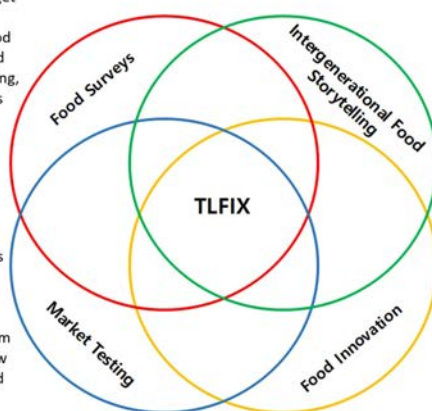
For even wider impact, in 2017 Lim and Notaras co-founded the Timor-

Leste Food Innovators Exchange (TLFIX), an interactive platform for leading chefs, youth, entrepreneurs, and community leaders to raise public awareness about the availability and value of local foods. Shown in the activity diagram, the four programmatic areas aim to reinvigorate the production and utilization of healthy Timorese foods (both wild harvested and locally grown) to improve food security and address malnutrition.<sup>90</sup>

TLFIX even measures how their efforts contribute to the Sustainable Development Goals, including the number of nutritious meals served (SDGs 2 and 3), plastic bottles avoided (SDGs 6, 11, and 12), and financial investment in the Timorese agricultural economy (SDGs 8, 10, and 11).<sup>91</sup> For a refresher on the SDGs, see page 53.

**Food Surveys** in the target community are used to understand the local food system and enablers and disablers to healthy eating, including cultural taboos around food.

**Food Innovation** involves people from the village working with young Timorese chefs to understand and transform traditional foods into new flavour combinations and presentations.



**Intergenerational Food Storytelling** brings people together from across the generations to share knowledge about, and validate the importance of, their local food.

**Market Testing** of the new food products with consumers gives participants useful feedback and helps build their confidence in the taste and presentation of their local food.



Source: Timor-Leste Food Innovators Exchange (TLFIX) Activity Diagram

<sup>90</sup> Timor-Leste Food Lab. <https://www.timorlestefoodlab.com/>

<sup>91</sup> Timor-Leste Food Lab. TLFIX Blog. Our Impact. 2019 - Super Sweet Dashboard. <http://ec2-54-202-239-21.us-west-2.compute.amazonaws.com:3030/tlfoodlab>

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## IRELAND

### FoodSpace

A prime example of a mission-driven food business is FoodSpace, a sustainable on-site catering and hospitality company operating throughout Ireland. FoodSpace tries to source as many ingredients as possible within a 50-mile radius of their kitchen, highlighting dishes with a '50-mile Menu' stamp on their menus. They also limit their seafood purchases to those listed in the Marine Conservation Society's Good Fish Guide, a tool comparing the sustainability ratings of various fish species to encourage ocean stewardship. Their principles also include nutritionally-balanced menus, compostable packaging, and a growing number of meat-free

offerings meant for omnivores as well as vegans and vegetarians.

For Earth Week 2019, FoodSpace's executive

# FOOD SPACE

chef Conor Spacey teamed up with the 2020FOR2020 campaign (mentioned previously on page 56) and launched the Planetary Plate—a different dish each day of the week showcasing the bountiful April harvests in Ireland—serving over 2,000 of them across the country. Along with the dishes, customers learned about the importance of using and promoting lesser-known, native ingredients.<sup>92</sup>



<sup>92</sup> FoodSpace. <https://food-space.com/>

# Networks, Labs, and Entrepreneurs

## UNITED KINGDOM

### Sustainable Restaurant Association



Founded in 2010 as the intersection of the foodservice industry and the sustainable food movement, the Sustainable Restaurant

Association (SRA) is often dubbed the 'Michelin Guide for sustainability'. Its 10,000 members range from street-food vendors to fine dining establishments. The SRA created



an industry standard Food Made Good Sustainability Rating system offering zero to three stars based on three pillars: Sourcing, Society,

and Environment. Each pillar has 3-4 key areas that cover a selection of measurable achievements, adding up to 50 total (The Food Made Good 50). This benchmark engages restaurants, consumers, and sustainability advocates by rewarding progress

and encouraging improvement. They publicly acknowledge the most pioneering businesses with the annual Food Made Good Awards.

In addition to their rating system, the SRA launched two plant-forward campaigns in 2018.



One Planet Plate is a global movement to help chefs serve and diners choose

more planet-friendly dishes, based on six ethical and sustainability guidelines. The website allows diners to find restaurants serving certified dishes and download recipes. Another campaign, 'Make Veg a Star', acknowledges and encourages a changing mainstream:

"As climate change accelerates ever faster, it's clear that our consumption of animal protein is not sustainable. In response, foodservice businesses across the sector are creating dishes that make plant-protein and veg the stars of the show."<sup>93</sup>

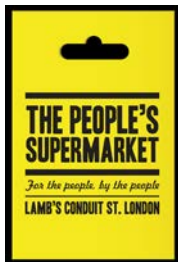


<sup>93</sup> The Sustainable Restaurant Association. <https://thesra.org/>

<sup>94</sup> The People's Supermarket. <http://www.thepeoplesupermarket.org/>

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## The People's Supermarket

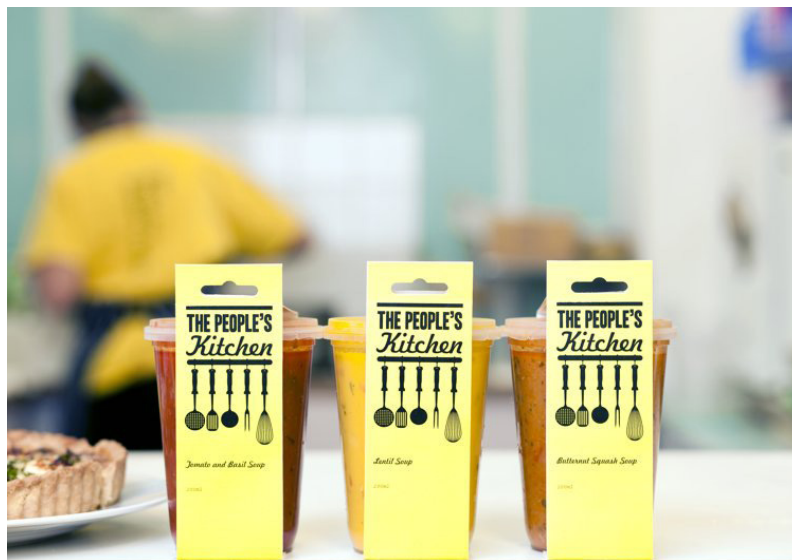


Inspired to offer consumers an alternative to supermarkets with mass-produced, low-quality products while stimulating local

economies, British eco-chef and food waste activist Arthur Potts Dawson founded The People's Supermarket in 2010 in London. It "presents an innovative, inspiring, disruptive and

brilliant new business model to supply people with quality food. It demonstrates how, by collaborating in new ways, we can find economic, social and environmental triple wins - where all of us do better".

The food co-operative is meant to serve as a community hub as well as a place for quality, local grocery shopping. Members pay an annual fee of £25 and volunteer for four hours each month in exchange for purchasing access and a 20% discount.<sup>94</sup>



A selection of soups made in The People's Kitchen, inside the market  
Photo courtesy of The People's Supermarket

# Networks, Labs, and Entrepreneur

## TAIWAN, CHINA



In March 2018, ecological diet promoter Wu Xiu-Juan and ecological chef Ma Ai-Yun launched Round Island Cycling with Abi Wild Vegetables, an island-wide elementary school-based food education initiative featuring native edible plants cultivated under the shade of Arabica coffee trees (“Abi” trees).

Through presentations and interactive cooking demonstrations, the four-month initiative highlighted the huge diversity of ecosystems in Taiwan, the urgency of protecting the land from pesticides and other destructive farming practices, and the benefits of

agroecological practices such as forest farming.

In November 2018, the initiative evolved into the **Taiwan Eco Chefs Training Program**. Fifty chefs and pastry chefs joined the program to learn about native edible plants, their natural habitats, and traditional as well as creative ways of transforming them into delicious dishes.

In February 2019, the Taiwan Eco Chefs Training Program hosted the Earth’s Produce Exhibition. At the exhibition, local ecological farmers were invited to share the stories of their produce, which were then made into creative dishes by the trainees.

After the chefs graduated from the training program in March 2019, they began to work with the Soil and Water Conservation Bureau to influence farmers and encourage them to implement agroecological practices in order to protect ecosystems, the environment, public health, and a culture that coexists in harmony with nature.<sup>95</sup>

95 Facebook. Taiwan Eco Chefs Training Program. <https://www.facebook.com/groups/wu611003/>

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## UNITED STATES

### Chef Action Network



Co-founded by chef Michel Nischan in 2013, Chef Action Network (CAN) uses tools, training, and supportive infrastructure to enlist passionate chefs to become sustainable food policy advocates.<sup>96</sup> Collaborating with the James Beard Foundation, CAN conducts 2-3 training opportunities each year, called The Chefs Boot Camp for Policy and Change. These thematic retreats allow participants to receive advocacy and media training while learning about important issues facing the food world. These experiences are very much in demand, exemplified by a wait list of as many as 800 people for a given training.<sup>97</sup>



CAN retreat at Blackberry Farm, September 2015

Photo credit: beall + thomas photography

### Green Restaurant Association



Founded in 1990, the Green Restaurant Association (GRA) pioneered the Green Restaurant® movement, encouraging restaurants to upgrade their operations using transparent, science-based certification standards to become more environmentally sustainable in a number of areas, including energy, water, waste, food, chemicals, disposables, and building materials. The GRA operates in 41 states as well as Canada. Their website includes an Education Portal with accessible resources for restaurants and consumers, including certification label explanations and the impacts of animal agriculture under key facts about sustainable food. In other awareness-raising efforts, the GRA has created an informational map of current environmental legislation that affects the greening of restaurants (related to recycling, composting, and polystyrene foam).<sup>98</sup>

<sup>96</sup> Chef Action Network. Who We Are. <https://chefaction.squarespace.com/who-we-are>

<sup>97</sup> The New York Times. Chefs Struggle Over Whether to Serve Up Politics. <https://www.nytimes.com/2017/03/14/dining/chefs-politics-immigration.html>

<sup>98</sup> Green Restaurant Association. <https://www.dinegreen.com/>

# Municipal Food and Climate

## NATIONS LACK AMBITION

Even though there are many troubling trends in the global food system, national policymakers have been largely resistant to or ambivalent about making significant adjustments to the status quo.

Only a handful of countries incorporate sustainability into their official national dietary guidelines (while several others have quasi-official recommendations): Germany, Brazil, Qatar, Sweden, Norway, Switzerland, Canada, and China.

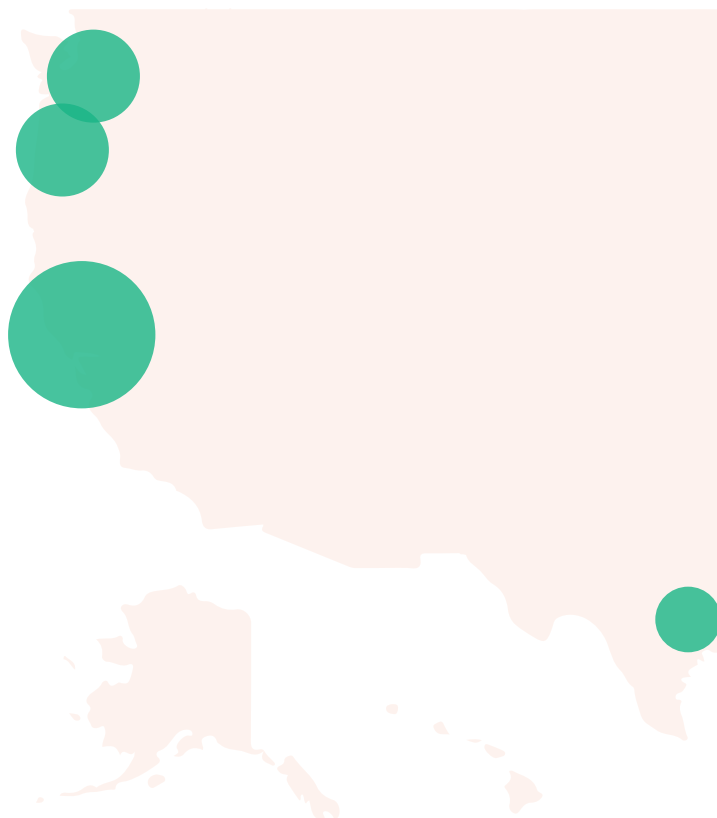
Under the Paris Agreement, most countries must submit a set of nationally determined contributions (NDCs), detailing their intended post-2020 climate actions to limit global warming to the agreed-upon targets, by the year 2020. So far, 184 countries have submitted NDCs.

While the word 'agriculture' appears in 178 of those NDCs and 'food' appears in 106, the word 'diet' only appears in 4; and none of those four acknowledge diet or food choices in the context of its contribution to climate change, public health, or any other related policy concern.<sup>99</sup>

## CITIES STEPPING UP

With little traction in national policy development, cities and municipalities are stepping up on food and climate issues.

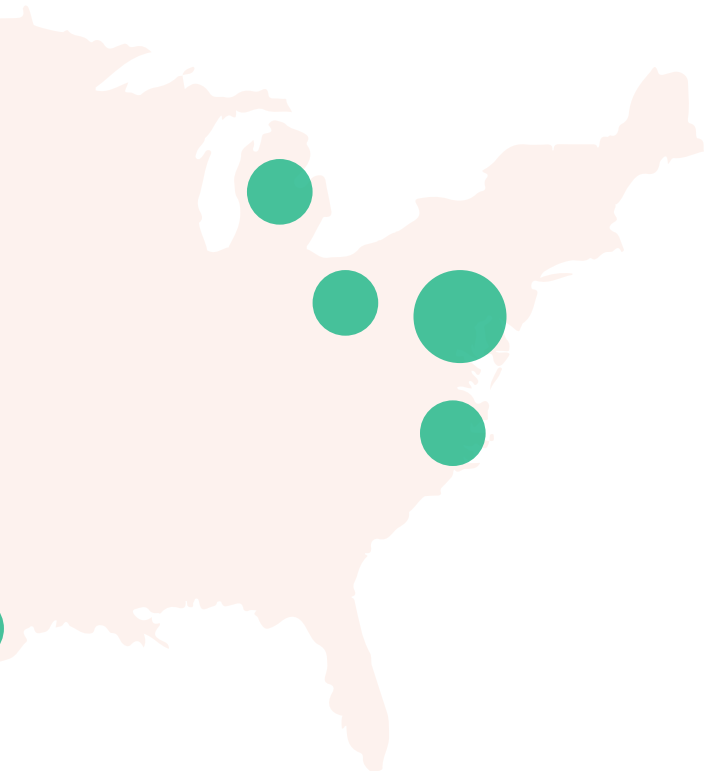
On Earth Day 2019, the **New York City** mayor announced a number of new commitments and updates to the City's climate action plan, OneNYC. Two of these updates involve food procurement: the City will reduce beef purchases by 50% and phase out all purchases of processed meat by 2030.<sup>100</sup> Since New York City serves about 260 million meals a year via its various agencies, the potential climate benefits are enormous.



# Policy

Other United States (U.S.) municipalities and counties that recognize the essential role of reducing meat (and dairy) consumption in their climate action plans include:

- California - **Albany, Berkeley, Cupertino, Davis, Oakland, and Santa Monica**
- Michigan - **Ann Arbor**
- North Carolina - **Carrboro**
- Ohio - **Cincinnati**
- Oregon - **Eugene, Multnomah County, and Portland**
- Pennsylvania - **Pittsburgh**
- Texas - **Austin**
- Washington - **King County, Seattle, and Shoreline**



## MALMÖ, SWEDEN

The City of Malmö, Sweden has an especially visionary policy on sustainable food procurement. The 2010 "Eat S.M.A.R.T." standards task all food served in the city to be certified organic by 2020, and to reduce food-related GHGs 40% by 2020 (compared to 2002 levels). A less and better meat policy is at the heart of these guidelines, based on Sweden's nutrition recommendations and environmental goals.<sup>101</sup>



99 Climate Watch. NDC Search. <https://www.climatewatchdata.org/ndc-search?document=ndc>

100 OneNYC 2050. <https://onenyc.cityofnewyork.us/>

101 Friends of the Earth. Meat of the Matter: A Municipal Guide to Climate-Friendly Food Purchasing. <https://foe.org/resources/meat-of-the-matter/>

# Programs, Pledges, and Initiatives

## GOOD FOOD PLEDGE .....



In June 2019, the China Biodiversity Conservation and Green Development Foundation's Good Food Fund released the Good Food Pledge, in order to promote ecological sustainability, public health, and social equity.

The Good Food Pledge includes 8 principles, which the Good Food Fund invites all NGOs around the world to follow in their work meals and banquets:

- 1. Plant Forward** – In each meal, plant-based dishes account for no less than 85%, while animal protein (meat, seafood, eggs, and milk) does not exceed 15%; or, as an initial goal, make plant-based dishes account for no less than 70% and animal protein not exceed 30%.
- 2. Animal Welfare** – If animal products are used, support high-welfare animal products such as cage-free eggs and meat.
- 3. Healthy Eating** – Choose whole foods, support healthy cooking, avoid high sugar, salt, and/or processed foods and beverages.
- 4. Reduce Waste** – Take/order only what we can finish and finish what we take/order.
- 5. Local, Seasonal** – Choose local and seasonal ingredients as much as possible; support ecological agriculture and small farmers.
- 6. Circular Economy** – Refuse disposables, especially plastics. Reuse and recycle.
- 7. Preserve Biodiversity** – Refuse to eat wildlife, choose sustainable aquatic products, and support sustainable and diverse ingredients.
- 8. Food Education** – Provide food education to employees and encourage them to participate in food education courses.<sup>102</sup>

In order to achieve the best practical results, the Good Food Fund will adjust the specific content of the Good Food Pledge based on the latest science and feedback.

<sup>102</sup> 良食基金.《收藏:如何成为《良食共识》&《良食倡议》第一批签署方和共创方?》. <https://mp.weixin.qq.com/s/gA-xGkneXcLkBfplnhcOjg>

## MENUS OF CHANGE

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

Launched in 2012 as a national, educational project developed by The Culinary Institute of America (CIA) and the Harvard T.H. Chan School of Public Health, Menus of Change®: The Business of Healthy, Sustainable, Delicious Food Choices works to realize a long-term, practical vision integrating optimal nutrition and public health, environmental stewardship and restoration, and social responsibility concerns within the foodservice industry and the culinary profession.

More specifically, the goal is to "create and grow a world-class structure of collaboration between leaders in nutrition research and public health, the environmental sciences and sustainability, the culinary arts, and business and management to consider and incubate new models of food and foodservice innovation that anticipate future imperatives and are economically sustainable. Menus of Change also strives to provide the next generation of culinary and business leaders the skills and knowledge to work at the intersection of health, environmental, and social concerns."

In their 2017 Annual Report, Menus of Change provided a baseline definition

for 'plant-forward' dining, while at the same time, CIA and EAT Foundation amplified the concept by launching the Plant-Forward Global 50 list (discussed on page 9).

In addition to an annual leadership summit at CIA's campus in Hyde Park, New York, an annual report on the state of the industry, and an ongoing series of tools and practical guidance for culinary professionals, there's also a Menus of Change University Research Collaborative. Co-founded and jointly led by Stanford University and CIA, it's a working group of forward-thinking scholars, food service leaders, executive chefs, and university administrators who are accelerating efforts to move people towards healthier, more sustainable, and delicious foods using evidence-based research, education, and innovation.

The Collaborative provided the foundation for another seminal Menus of Change tool, the 24 Principles of Healthy, Sustainable Menus. These principles bring together findings from nutritional and environmental science perspectives on optimal food choices, trends in consumer preferences, and impacts of projected demographic shifts.<sup>103</sup>

<sup>103</sup> Menus of Change. <http://www.menusofchange.org/>

# Programs, Pledges, and Initiatives

## MEATLESS MONDAY



In 2003, Sid Lerner, Chairman and Founder of U.S. nonprofit The Monday Campaigns, in association with the Johns Hopkins Bloomberg School of Public Health's Center for a Livable Future, launched the Meatless Monday campaign.

The Meatless Monday campaign aims at reducing meat consumption by 15% for personal and planetary health, by encouraging people to go meat-free at least one day a week.

The campaign provides information, news, recipes, and free promotional materials to help individuals, schools, restaurants, hospitals, food companies, and entire communities to start each week with a commitment to eating healthy, environmentally-friendly, meat-free meals.

Now, the campaign has grown into a global movement, active in more than 40 countries and regions, in over 20 languages.<sup>104</sup>



Image courtesy of Meatless Monday

<sup>104</sup> Meatless Monday. <https://www.meatlessmonday.com/>

## BEYOND MEATLESS MONDAY

Initiatives like Meatless Monday exist all around the world, including:



Meat Free Monday, a campaign launched by former Beatles member Paul McCartney and his family in 2009, which has worked with hundreds of schools, universities, restaurants, and businesses in the United Kingdom (U.K.) and beyond to encourage people to help slow climate change, conserve natural resources, and improve their health by eating plant-based at least one day each week.<sup>105</sup>



Green Monday, a Hong Kong-based social startup established in 2012, which inspires people to go green on Mondays and explore environmentally-friendly vegetarian food options by making a meatless diet and sustainable lifestyle simple, viral, and actionable.<sup>106</sup> and



Veganuary, a nonprofit campaign launched in the U.K. in 2014, encourages people to try going vegan for the month of January and throughout the rest of the year to benefit the animals, personal health, and the environment.<sup>107</sup>

<sup>105</sup> Meat Free Monday. <https://www.meatfreemondays.com/>

<sup>106</sup> Green Monday. <https://greenmonday.org/>

<sup>107</sup> Veganuary. <https://veganuary.com/>

# Programs, Pledges, and Initia

## FORWARD FOOD ..... **FORWARD FOOD**

In 2015, in response to a request for culinary assistance from Harvard University, the Humane Society of the United States and its international affiliate, Humane Society International, developed and launched the Forward Food program.



Through culinary training, sustainability assessment, and information sharing, the Forward Food program helps the foodservice industry recognize the financial, health, and environmental benefits of offering plant-based menu items and works with the industry to transition towards a more sustainable food system.<sup>108</sup>



Since 2017, the Forward Food program has been partnering with Compass Group, the world's largest food service provider, and Aramark, the largest U.S.-based food services company, to leverage impact.<sup>109</sup>

Now, the program has seen more than 500 university and college campuses, hospitals, school districts, and other institutions around the world pledge to offer more plant-based options, impacting millions of meals each year.<sup>110</sup>

Photo by Jason Geil for the Humane Society of the United States

<sup>108</sup> Forward Food. <https://forwardfood.org/>

<sup>109</sup> Humane Society of the United States. A Humane World Blog. Compass, Aramark work with the HSUS to introduce plant-based options at universities, hospitals. <https://blog.humanesociety.org/2017/09/compass-aramark-work-hsus-introduce-plant-based-options-universities-hospitals.html>

<sup>110</sup> Food Climate Research Network. Blogs. Building a better food system through institutional partnerships. <https://www.fcrn.org.uk/fcrn-blogs/building-better-food-system-through-institutional-partnerships>

## COOL FOOD PLEDGE .....



WORLD  
RESOURCES  
INSTITUTE

In 2018, World Resources Institute, together with United Nations Environment, Carbon Neutral Cities Alliance, Health Care Without Harm, Practice Greenhealth, and Climate Focus launched the Cool Food Pledge, aiming to reduce the climate impact of the foodservice industry.

Cool Food Pledge signatories commit to a collective target of reducing the greenhouse gas emissions associated with the food they provide by 25% by 2030, relative to 2015 figures. This level of ambition is in line with keeping global warming below 2°C.

To achieve the goal, the pledge helps signatories track the climate impact of the food they serve, develop plans to sell delicious dishes with smaller



climate footprints, and promote their achievements as leaders in the sustainable food movement.

Currently, the Cool Food Pledge has over 30 members that collectively serve more than 850 million meals annually. The pledge has partnered with Sodexo, one of the world's largest food service companies, and aims to reach 10 billion meals served per year by 2023.

IKEA, Hilton, the city of Toronto, and Harvard University are just a few of the Cool Food members who use the latest cutting-edge behavioural science to achieve "delicious climate action".<sup>111</sup>

111 World Resources Institute. The Cool Food Pledge. <https://www.wri.org/our-work/project/cool-food-pledge> and <https://www.coolfoodpledge.org>

# Programs, Pledges, and Initiatives

## “4 PER 1000”



At the 2015 UN Climate Change Conference, the French government launched the “4 per 1000” initiative, calling on countries and organizations to help mitigate climate change and enhance food security by implementing regenerative agriculture.

The essence of regenerative agriculture is to regenerate carbon-rich organic matter in the soil through agroecological practices, thereby regenerating healthy soil ecosystems and producing healthy food, all while capturing carbon from the atmosphere and storing it in the soil to re-establish a healthy carbon cycle.

The initiative claims that by increasing organic carbon content in the world's soils by 0.4% every year, combined with emission reductions in other industries, we can potentially stop the increase of carbon dioxide concentration in the atmosphere.<sup>112</sup>



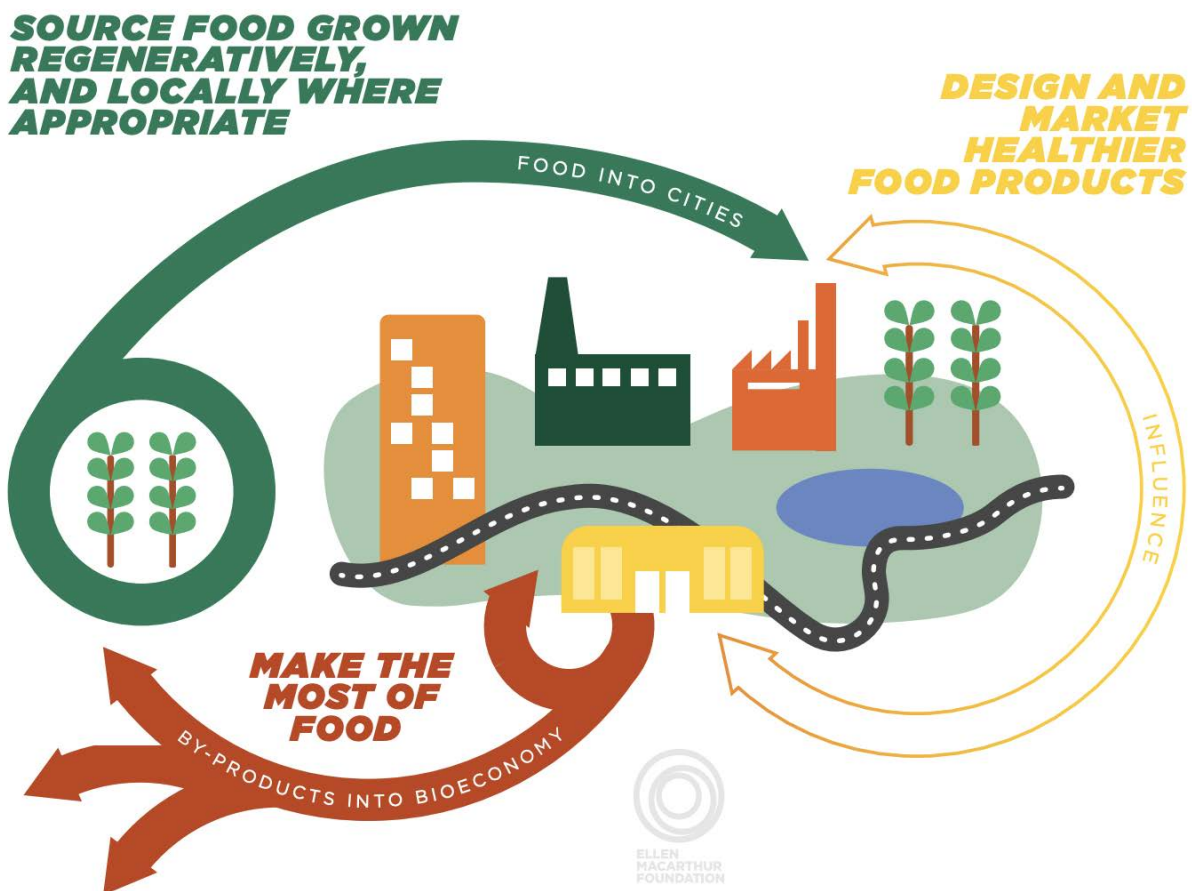
<sup>112</sup> “4 per 1000” Initiative. <https://www.4p1000.org/>

## CIRCULAR ECONOMY FOOD INITIATIVE .....



In 2019, the U.K.-based charity Ellen MacArthur Foundation launched the Food initiative to stimulate a global shift towards a regenerative food system based on the principles of a circular economy.

The Food initiative has a focus on cities, with the following three main ambitions (illustrated in the infographic): source food grown regeneratively and locally to improve ecosystem health, make the most of food to reduce waste, as well as design and market healthier food products to reshape consumer habits for health benefits.<sup>113</sup>



Source: Ellen MacArthur Foundation, 2019

113 Ellen MacArthur Foundation. The Food initiative. <https://www.ellenmacarthurfoundation.org/our-work/activities/food>

# Standards and Recommendations

## THE EAT-LANCET COMMISSION

“

Food is the single strongest lever to optimize human health and environmental sustainability on Earth.

”

This sentence opens the introduction of the Summary Report of the EAT-Lancet Commission, released in January 2019. The report tackles one of the most pressing questions of our time: how can we ensure healthy diets from sustainable food systems as global population climbs to an estimated 10 billion people by 2050?

The Commission brought together more than 30 scientists from 16 countries to reach a scientific consensus that defines a healthy and sustainable diet. That is, specific global diet recommendations that safeguard planetary health, defined as, “the health of human civilization and the state of the natural systems on which it depends”. Such recommendations are referred to as the planetary health diet, a term established by the Commission to highlight the critical role that diets play linking human health and environmental sustainability (flip to page 19 for a representation of the planetary health plate showing the proportions for different foods based on the diet).

The planetary health diet promotes a variety of whole, plant-based foods (vegetables, fruits, whole grains, legumes, and nuts) and optional modest amounts of animal-based food (eggs, dairy, fish, poultry, and red meat).<sup>114</sup>

While some have criticized the study's findings for being too general and standardizing a universal diet for all people, regardless of age, gender, region, or health status—and on the flip side, some think it doesn't argue strongly *enough* for predominantly plant-based diets—it's clear that more dialogue, education, and policy experimentation is needed to optimize dietary patterns, food production, nutrition, and environmental sustainability. The EAT-Lancet Commission opens the door for such activities none too soon as these often-separate agendas have long-been neglected by policymakers.



114 EAT Foundation. Summary Report of the EAT-Lancet Commission: Healthy Diets from Sustainable Food Systems. <https://eatforum.org/eat-lancet-commission/>

# tions

## HARVARD SUSTAINABLE HEALTHFUL FOOD STANDARDS



**HARVARD**  
UNIVERSITY

**Sustainability**

A multi-disciplinary faculty committee with input from the Office for Sustainability, the Council of Student Sustainability Leaders, and other experts launched the Harvard University Sustainable and Healthful Food Standards in April 2019. Based on research like the *EAT-Lancet* Commission on Food, Planet, Health (see opposite page) and initiatives like Menus of Change (see page 70), these standards are designed to measurably increase access for students, faculty, staff, and visitors to healthful and sustainable foods on campus. At the outset, they will apply only to the major food vendors on campus that primarily serve the Harvard community.

### **The Standards focus on six areas:**

- Climate and Ecosystems
- Consumer Well-Being
- Education and Food Literacy
- Reduction of Wasted Food
- Welfare of Animals
- Well-Being of Workers and Communities throughout the Value Chain

To track progress and ensure transparency, food providers will submit reporting once a year, and the Standing Food Standards Committee will review the results and create a set of recommendations to ensure continuous improvement. Over time, specific goals and targets will be set in certain areas.

### **With these standards, Harvard University seeks to:**

1. Align food providers around a shared vision and common set of evidence-based aspirations and principles.
2. Quantify the environmental and health impacts of the campus food system through reporting.
3. Optimize the campus food system for well-being, climate and community.
4. Drive changes in the marketplace through partnerships and by leveraging purchasing power.
5. Enhance food literacy across the Harvard community, and beyond.<sup>115</sup>

<sup>115</sup> Food – Sustainability at Harvard. <https://green.harvard.edu/topics/food>

# Standards and Recommendations

## BARILLA CENTER FOR FOOD AND NUTRITION: HEALTHY AND SUSTAINABLE DIET RECOMMENDATIONS

The Barilla Center for Food and Nutrition is a think tank directed by the owners of the Barilla Group based in Parma, Italy. It addresses today's major food-related issues with a multidisciplinary approach from environmental, economic, and social perspectives, to secure the well-being and health of people and the planet.

The Center released a guide of 12 recommendations for healthy and sustainable diets in 2018:

1.



**CHOOSE MAINLY HEALTHY PLANT-BASED FOOD**, to promote your health and reduce environmental impact.

2.



**EAT A VARIETY OF FOOD**: eating many different foods helps maintain health and wellness, with an interesting diet and colorful plates.

3.



**ENJOY 5 PORTIONS OF FRUIT AND VEGETABLES DAILY**, including them at most meals and snacks.

4.



**CHOOSE SEASONAL AND LOCALLY GROWN PRODUCTS**. Find out the seasonal calendar for fruit and vegetables that grow in your area.

5.



**USE FRESH INGREDIENTS** whenever possible, to reduce unnecessary packaging waste. Out of home, prefer places that serve freshly made meals.

6.



**LIMIT THE CONSUMPTION OF PROCESSED FOODS** and avoid ultraprocessed foods. Read labels to be informed on high sugar, high fat, high salt processed foods.

7.



**INCREASE THE CONSUMPTION OF WHOLE GRAINS**, such as brown rice, barley, oats, corn, and rye-pack in with nutritional benefits.

8.



**LIMIT THE CONSUMPTION OF SUGAR-SWEETENED BEVERAGES**. Drinking water in place of SSBs or fruit juices is associated with lower long-term weight gain.

9.



**INCREASE THE CONSUMPTION OF LEGUMES**. Even moderate bean consumption can make a significant contribution to fiber intake.

10.



**REDUCE THE CONSUMPTION OF RED AND PROCESSED MEAT**, enjoying other plant-based sources of proteins such as legumes and nuts.

11.



**CHOOSE FISH FROM SUSTAINABLE STOCKS**, to help protect fish stocks from over-fishing and guards the marine environment.

12.



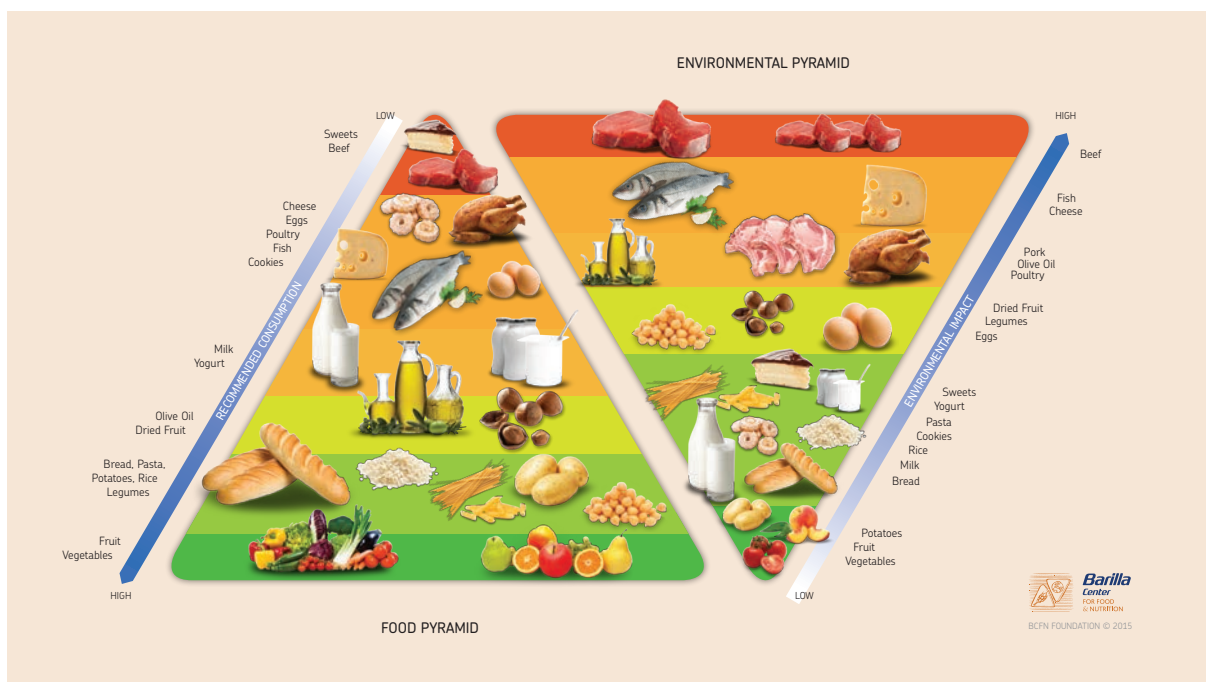
**CHOOSE PRODUCTS THAT COME FROM FREE-RANGE AND GRASS-FED ANIMALS**. The food you choose has a direct effect on how farm animals live.

Source: Barilla Center for Food and Nutrition Foundation, 2018



**Barilla**  
**Center**  
FOR FOOD  
& NUTRITION

To effectively show the relationship between a healthy diet and environmental impact, the Center developed a double pyramid model in 2010, mimicking the nutritional food pyramids used by many countries and agencies. The model illustrates a food pyramid on the left based on the Mediterranean diet, and an inverted pyramid on the right reclassifying the same foods based on their environmental footprint. The double pyramid communicates the inverse relationship between nutritionally-recommended food for a Mediterranean diet and their environmental impacts. The Center releases an updated version when new scientific evidence becomes available.<sup>116</sup>



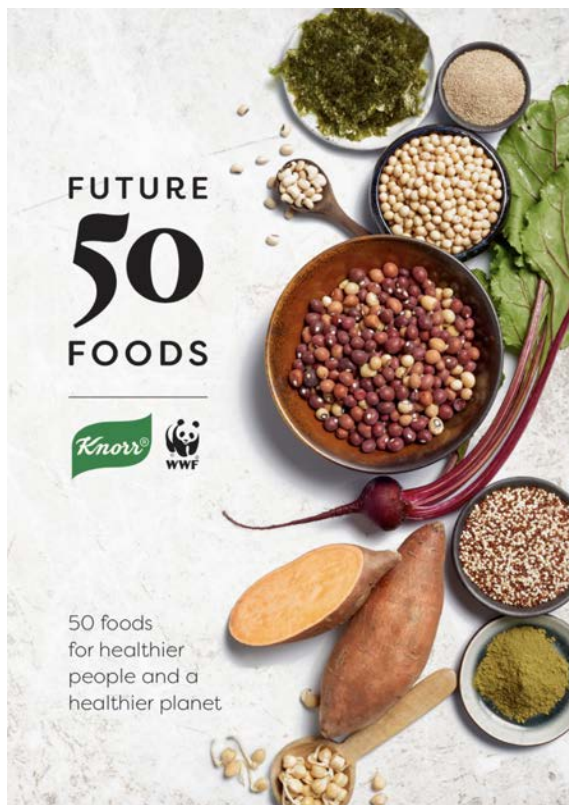
Source: Barilla Center for Food and Nutrition Foundation, 2015



# Part V Into the Frying Pan: Practical Application

TIPS FOR CHEFS TO CONSIDER AND POSSIBLY IMPLEMENT IN THEIR  
PLACES OF WORK OR COMMUNITIES

# Meet the Ingredients, Again



It's hard for food-lovers and professional chefs who visit China to not be amazed by the diversity and freshness of the fruits, vegetables, grains, beans and legumes, herbs, and other plant-based ingredients.

Whereas the nutritional values and sustainability of plant-based ingredients are increasingly recognized in the western world, these foods are often misperceived as boring or secondary to meat dishes in modern China.

It's time—especially for chefs—to learn about these ingredients from a renewed perspective!

Referencing the Future 50 Foods report (see page 56), this section explores the nutritional, environmental, and culinary benefits of plant-based ingredients to inspire creativity in plant-forward (or plant-centric) cooking.

# Rediscover Plant-based Ingredients

## ALGAE



Producing half of all oxygen on Earth and supporting all aquatic ecosystems, algae are rich in essential fatty acids, antioxidants, and protein. They have a meat-like umami flavor, making them a versatile tool in plant-forward cooking. They can be used in soups, stews, cold dishes, or as condiments to boost flavor.

## CEREALS AND GRAINS



A variety of cereals and grains are the most important staple foods in China. For both environmental and health reasons, it's important to keep growing and eating different types of cereals and grains to improve the diversity of ecosystems and nutrients. Cereals and grains can be easily incorporated into staples and replace meat to add bulk, fiber, and nutrients to dishes.

## BEANS AND PULSES



Members of the legume family, beans and pulses can work with microbes to fix nitrogen and improve soil fertility. They are rich in fiber, protein, and B vitamins and are known as ideal ingredients to replace meat. Beans and pulses are used in a wide variety of stews, drinks, desserts, snacks, and fermented condiments in China.

## EDIBLE FLOWERS & FRUIT VEGETABLES



These vegetables are the flower or the fruit of a plant. Edible flowers can add sweetness, minerals, and bold colors to the dish. Fruit vegetables are usually sweeter and contain a higher amount of carbohydrate and water compared to other vegetables. Rich in vitamin C and fiber, these vegetables can be eaten raw, pickled, or cooked.

# Ingredients

## LEAFY GREENS



These are arguably the most versatile and nutritious of all types of vegetables. Low in calories, they are packed with dietary fiber, vitamins, and minerals – no less than meat! Leafy greens are typically fast-growing and can be eaten cooked or raw. Wild edible plants are also nutritious ingredients that connect people with nature.

## NUTS AND SEEDS



Nuts and seeds are packed with vitamin E and good fatty acids, so much so that some of them are considered 'superfoods'. Crunchy when grilled and creamy after grinding, their desirable flavor and versatile texture make them a great addition to creative plant-centric dishes, including salads, desserts, sauces, soups, and healthy snacks.

## MUSHROOMS



There are more than 2,000 edible varieties of mushrooms. They are rich in B vitamins, vitamin D, protein, and fiber. Mushrooms are a sustainable addition to agroecological farms because they can grow on recycled plant materials. Their texture and umami flavor make them a tasty ingredient and a suitable substitute for meat. They can be used to make stock, sauces, rice dishes, stews, stir-fries, cold plates, as fillings, grilled, pickled, or steamed.

## ROOT VEGETABLES AND TUBERS



Crisp and colorful, root vegetables are rich in a wide variety of vitamins and minerals. Tubers contain a relatively higher level of carbohydrates since they are the energy storage unit of a plant. Both types of vegetables are nutritious, hearty, and versatile ingredients in plant-forward cooking.

## SPROUTS



Sprouting is a technique that dates back more than 2,000 years in China. The process can double and even triple the nutritional value of the seed. Sprouts can be used in stir-fries, soups, salads, and sandwiches to add crunchiness.<sup>117</sup>

# Rediscover Plant-based Ingredients

	COMMON IN CHINA	TRENDING IN THE WEST
<b>ALGAE</b>	Kombu, purple laver, nori, hai-rong, hijiki	Nori, wakame, agar agar, Irish moss
<b>BEANS &amp; PULSES</b>	Soybeans, black beans, peas, adzuki beans, mung beans, fava beans, kidney beans	Chickpeas, adzuki beans, black turtle beans
<b>CEREALS &amp; GRAINS</b>	Rice, wheat, millet, barley, oats, buckwheat, purple rice, sorghum, adlay	Quinoa, wild rice, millet, forbidden rice
<b>EDIBLE FLOWERS</b>	Pumpkin flowers, osmanthus, jasmine, rose, honeysuckle	Viola, hibiscus, saffron, nasturtium
<b>FRUIT VEGETABLES</b>	Tomatoes, zucchini, peppers, eggplants, squash	Heirloom tomatoes, kabocha pumpkins
<b>LEAFY GREENS</b>	Chinese cabbage, spinach, water spinach, mustard greens, lettuce, amaranth, pumpkin leaves, carrot greens, plantain leaves, purslane, shiso	Kale, swiss chard, bok-choy, beet greens, watercress, grape leaves, arugula, dandelion
<b>MUSHROOMS</b>	Shiitake, oyster mushrooms, straw mushrooms, king trumpet, enokitake, lion's mane, porcini, morels, matsutake, chanterelle	Maitake, shiitake, enokitake, lion's mane, chicken of the woods
<b>NUTS &amp; SEEDS</b>	Walnuts, sweet almonds, chestnuts, hazelnuts, pine nuts, cashews, sesame seeds, sunflower seeds, pumpkin seeds, lotus seeds	Flaxseeds, hemp seeds, chia seeds, sesame seeds
<b>ROOT VEGETABLES &amp; TUBERS</b>	Carrots, beets, radishes, sweet potatoes, jicama, kudzu, potatoes, lotus root, Chinese yam, taros, konjac	Purple yam, Japanese potatoes
<b>SPROUTS</b>	Soybean sprouts, mung bean sprouts, pea sprouts	Radish sprouts, alfalfa sprouts

# redients

Ingredients are not restricted to the above-mentioned categories, and it benefits personal and planetary health to diversify your ingredients by trying less common ones. Some interesting local and seasonal ingredients include:

**Chinese toon shoots:** harvested in the **spring**, these pungent shoots can be used as a garlic alternative for those who refrain from ingredients from the *Allium* genus.

**Shiso leaves:** with antibacterial and antiviral functions, shiso can be pickled, added to salads, used as a wrap, or made into sauces to create savory **summer** treats.

**Euryale seed:** ripening in early **fall**, these medicinal seeds taste sweet and astringent and can be used in porridge or as a garnish.

**Jujube dates:** dates have a body-warming feature, making them a **winter** favorite. They can be added to drinks, made into dessert fillings, or enjoyed raw with nuts.

More information about the health benefits of plant-based ingredients and a plant-based diet can be found at:

Physicians Committee for Responsible Medicine (see resource on page 100 or Weibo @21dayhealthchallenge)

Nutrition Facts (WeChat @NutritionFacts)

EAT-*Lancet* Commission on Food, Planet, Health (see page 77 or read the summary report<sup>118</sup>)



118 EAT Foundation. Summary Report of the EAT-*Lancet* Commission, 2019. [https://eatforum.org/content/uploads/2019/07/EAT-Lancet\\_Commission\\_Summary\\_Report.pdf](https://eatforum.org/content/uploads/2019/07/EAT-Lancet_Commission_Summary_Report.pdf)

# Flavor-enhancing Techniques for Plant-centric Dishes

Although many plant-based ingredients are already delicious when consumed raw, culinary techniques from China and abroad can help enhance their flavor and texture to bring plant-centric dishes to a new level. Some examples include:

**Fermentation:** The ancient technique not only preserves fresh food, but also adds flavor, nutritional value, and probiotics while breaking down potential toxins (e.g. kimchi, pickles, tempeh, and hairy tofu).

**Smoking:** Smoking can be used on main ingredients or condiments to preserve and add a woody aroma to the food (e.g. smoked eggplant, smoked paprika).

**Marinating with cooking wine:** Soaking raw or cooked ingredients in a marinade

made with aged distillers' grains and spices can add a complex and unique aroma to the food (e.g. marinated edamame, marinated fava beans).

**Braising:** Braising ingredients in a broth made with soy sauce, five-spice powder, sugar, and other spices adds strong flavors and colors to the food. (e.g. braised tofu, braised daikon radish, braised bamboo shoots).

**Sauces:** Adding thick sauces made with soy sauce, flour, vegetable broth, and spices can create a creamy texture, making the food more appealing (e.g. mushroom sauce, Chinese toon sauce).

**Foraging:** Utilizing wild edible plants can enhance flavor and add medicinal values to the dish (e.g. shepherd's purse, shiso leaves, purslane, fish mint).

# Sourcing "Good Food"

Finding "good food" suppliers begins with knowing your local food producers. It's always better to source your ingredients from the farmers or artisans you know, because it allows you to get the freshest produce, build trust that benefits both sides, and request diverse varieties to help improve biodiversity and quality of the cuisine.

If you do not know any producers, start with local farmers' markets because they usually have developed a network of local ecological producers and can help coordinate supply and demand. Examples of such marketplaces include:

## Beijing .....



### Beijing Organic Farmers' Market

(Weibo @farmersmarketbj, WeChat @北京有机农夫市集)



### Farm to Neighbors

farmers' market (Weibo @F2N\_MARKET, WeChat @从农场到邻居)



### Chunbo online market

<https://www.chunbo.com/>

## Chengdu .....



### Chengdu Living Fair

(Weibo @成都生活市集, WeChat @livingfair)

## Chongqing .....



### Chongqing Farmers' Market

(WeChat @ECO-FOOD-SHARE)

## Guangzhou .....



### Nurture Land

(WeChat @沃土工坊)

<http://www.wotugongfang.com/>



### Cantonese Farmer's Market

(Weibo @chengxianghui, WeChat @chengxianghuinongxu)

## Shanghai .....



### Shanghai Nonghao

Farmers' Market (WeChat @上海农好农夫市集)



### Yimishiji online farm-to-table market

<https://yimishiji.com/>



### Rainbow of Hope

<http://www.rainbowofhope.cn/>

Many of these markets have a nationwide network. So even if you are not from these cities, feel free to reach out to them and ask about food producers in your area.

# Sustainable Practices in Professional Kitchens

Decisions made in the kitchen can influence and mobilize producers, consumers, waste management handlers – everyone in the food system and beyond. Key opportunities for implementing sustainability in professional kitchens include:

## **Sustainable procurement**

- Source ingredients from local, ecological producers.
- Source seasonal ingredients and develop menus to highlight seasonality.
- Source a diverse variety of ingredients and encourage the producers to broaden the selection of crops and varieties.

## **Reducing food waste**

- Coordinate supplies based on demand.
- Utilize imperfect-looking produce and trimmings in dishes wherever possible, such as in broth, soups, sauces, spreads, juices, smoothies, etc.
- Transform produce trimmings into creative dishes, such as veggie crisps from vegetable peels, pesto sauce from radish tops, and charred or grilled pineapple core.
- Donate leftovers to food banks or other charities.
- Compost kitchen waste to make organic fertilizers.

## **Engage consumers in a sustainable food dialogue**

- Design and market menu items to deliver a sustainability message (e.g. cook with uncommon varieties to advocate for biodiversity, or food scraps for cutting down on waste).
- Align other parts of the dining experience to the core values (e.g. use reusable or compostable utensils, or use reclaimed materials for interior décor).

# Communication and Marketing

One might face many challenges when communicating plant-forward dining with others. It is crucial to remember that food choices are very personal and shaped by cultural and traditional beliefs. A successful communicator knows that a conversation around diet may trigger different emotions.<sup>119</sup>

- **Curiosity:** People may be eager to learn about your discoveries and why you made the change;
- **Inadequacy/Failure:** People may feel that they are being judged and found to be lacking willpower, knowledge, commitment, or other things to make changes;
- **Separation:** People may feel that you are strange;
- **Skepticism:** People may question the health benefits;
- **Defensive:** Because food is associated with identity for many people, they may feel they are under attack when hearing about alternative food choices;
- **Resistance:** People may be resistant to hearing about change for a number of reasons.

Please remember that everyone must take their own path, their own journey, and change at their own pace. What you can do is to plant a seed – a kind, respectful, and inspiring seed – that will grow when the time comes. The following pages explore more tips to help you communicate and market the plant-forward concept.

119 PlantPure Communities. [http://plantpurecommunities.org/wp-content/uploads/2017/10/Action-Sheet\\_TalkingFriends.pdf](http://plantpurecommunities.org/wp-content/uploads/2017/10/Action-Sheet_TalkingFriends.pdf)

## AS AN INDIVIDUAL – COMMUNICATING “GOOD FOOD”

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If you are determined to promote plant-forward cooking and eating, it is helpful to consider your answers to the following questions first:

### *Q: Which food issue(s) do I care about the most?*

Your answer reflects your values – the core of all your actions. You might want to become more knowledgeable about the issue(s) you care about and try to address them in your own diet and lifestyle. By walking the talk and becoming a role model, it's easier to influence others.

### *Q: How does plant-centric eating help address the issue(s) I care about the most?*

Recall the moment when you made the decision to embrace the change. Why do you think such a transformation can help address the food issue(s) you care about? Use this handbook to find supporting evidence. The more specific the answer is, the better, because what you find powerful might be just as inspiring to others.

### *Q: What difficulties have I encountered, and what helped?*

Other people may face the same difficulties, such as lack of guidance, inconvenience, and pressure from family, friends, and society. Sharing your experience with others, instead of avoiding them, may help to empathize and find solutions to your common problems.

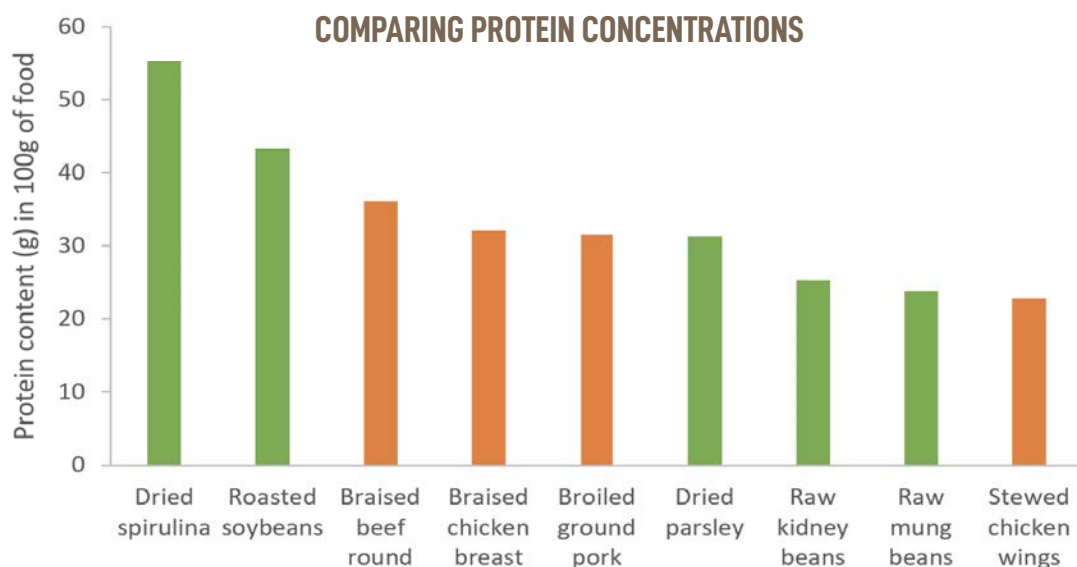
## COMMON QUESTIONS AND QUICK ANSWERS - NUTRITION EDITION

**Q:** Can you get enough nutrients from a diet based entirely or mostly on plants?

**A:** Yes. A balanced plant-centric or plant-based diet can provide all the necessary nutrients and protect against many chronic diseases. Below are some facts about key nutrients:

**Protein:** All living things contain protein. The U.S. National Academy of Sciences recommends getting 0.8 grams of protein per kilogram of body weight everyday,<sup>120</sup> which can be easily achieved with a plant-based diet. In China, the average daily protein intake is 64.6 grams, which is already higher than what a 75-kg adult male would need.<sup>121</sup>

The source of protein matters. In 2016, a study from Harvard T.H. Chan School of Public Health found that people eating a lot of animal protein have a higher risk of dying from cardiovascular diseases, while replacing animal protein with plant protein can help lower the risk and promote longevity.<sup>122</sup>



Source: USDA Food Composition Databases, 2019

The graph shows protein concentrations in selected foods listed in the database that are commonly used in China.

120 Institute of Medicine of the National Academies. 2002. Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids. Washington D.C.: The National Academies Press. <https://www.nap.edu/read/10490/chapter/1#iv>

121 Ju, L. et al. Dietary patterns among Chinese residents, 2010-2012. Chinese Journal of Public Health. 2018;34(10):1373-1376. <http://html.rhhz.net/ZGGGWS/html/20181013.htm>

122 Song, M. et al. Association of Animal and Plant Protein Intake With All-Cause and Cause-Specific Mortality. JAMA Intern Med. 2016;176(10):1453-1463. <https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2540540>

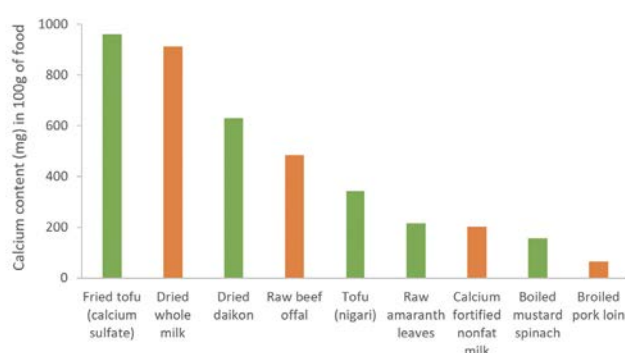
**Calcium:** Many plant-based foods, especially leafy greens, are packed with calcium. Although dairy products are perceived as a good calcium source that promotes bone health, the WHO pointed out the existence of the “calcium paradox” – countries with higher calcium intake through dairy products also have higher rates of hip fracture.

Studies show that the animal proteins in dairy products have adverse effects on calcium intake that outweigh the high calcium concentration in those foods.<sup>123</sup>

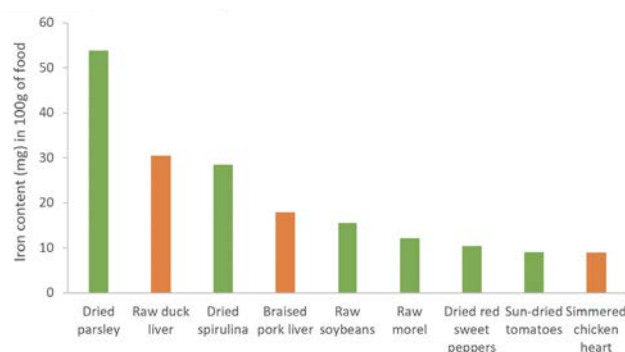
**Iron:** While too little iron in the body may cause anemia, too much iron is found to increase the risks of many chronic diseases.<sup>124</sup> The human body has evolved a mechanism to regulate the intake of plant-based iron but cannot do the same for animal-based iron, leading to a higher risk of over-intake.<sup>125,126</sup>

Studies found that increasing the daily animal-based iron intake by 1 mg increases the risk of coronary heart disease by 27%,<sup>127</sup> type 2 diabetes by 16%,<sup>128</sup> and certain cancers by 12%.<sup>129</sup> To prevent anemia, the safest source of iron is plant-based foods.

### COMPARING CALCIUM CONCENTRATIONS



### COMPARING IRON CONCENTRATIONS



Source: USDA Food Composition Databases, 2019

These graphs show the calcium and iron concentrations in selected foods listed in the database that are commonly used in China.

- 123 World Health Organization. Recommendations for preventing osteoporosis. [https://www.who.int/nutrition/topics/5\\_population\\_nutrient/en/index25.html](https://www.who.int/nutrition/topics/5_population_nutrient/en/index25.html)
- 124 Geissler, C. and Singh, M. Iron, Meat and Health. *Nutrients*. 2011;3(3):283-316. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3257743/>
- 125 Steele, T.M., et al. Systemic regulation of intestinal iron absorption. *IUBMB Life*. 2005;57(7):499-503. <https://www.ncbi.nlm.nih.gov/pubmed/16081371>
- 126 West, A.R., and Oates, P.S. Mechanisms of heme iron absorption: Current questions and controversies. *World J Gastroenterol*. 2008;14(26):4101-4110. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2725368/>
- 127 Yang, W., et al. Is heme iron intake associated with risk of coronary heart disease? A meta-analysis of prospective studies. *Eur J Nutr*. 2014;53(2):395-400. <https://www.ncbi.nlm.nih.gov/pubmed/23708150>
- 128 Bao, W., et al. Dietary iron intake, body iron stores, and the risk of type 2 diabetes: a systematic review and meta-analysis. *BMC Med*. 2012;10:199. <https://www.ncbi.nlm.nih.gov/pubmed/23046549>
- 129 Fonseca-Nunes, A., et al. Iron and cancer risk – a systematic review and meta-analysis of the epidemiological evidence. *Cancer Epidemiol Biomarkers Prev*. 2014;23(1):12-31. <https://www.ncbi.nlm.nih.gov/pubmed/24243555>

## COMMON QUESTIONS AND QUICK ANSWERS – FOOD CHAIN EDITION

**Q:** If we eat less meat, wouldn't there be too many animals on the planet, leading to a break in the ecological food chain?

**A:** First, contrary to popular belief, human beings are not at the top of the food chain. Carnivores such as tigers, lions, and wolves are. Like chimpanzees and gorillas – the species most similar to humans – we evolved as frugivores, meaning our natural diet is composed of mostly plant fruits and seeds – foods that our bodies are designed to handle.

In fact, except for a very small population of indigenous people who still get their food from natural ecosystems, human beings today have been disconnected from the ecological food chain, so are most of the animals we use for food today. Those animals are selectively and often artificially bred by humans and raised in factory-like farms built by us, not natural ecosystems.

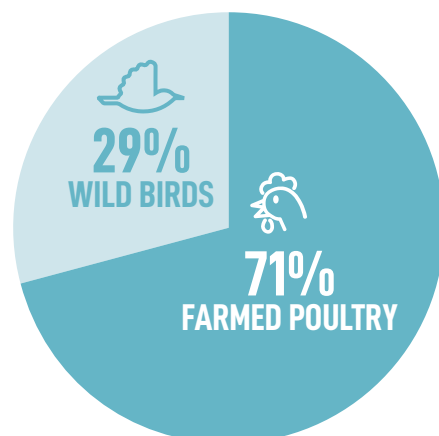
On the contrary, keeping these animals in factory farms is one of the biggest contributors to ecosystem destruction (see page 14). If we eat less animal-based foods, the demand will decrease, fewer animals will be bred, and more land and ocean can be returned to nature, allowing the broken ecosystems to heal.

**Fact:** The biomass of poultry today is 3 times that of wild birds. The biomass of livestock is 33 times that of wild land mammals.<sup>130</sup>

**THE BIOMASS OF ALL LAND MAMMALS ON EARTH**



**THE BIOMASS OF ALL BIRDS ON EARTH**



Data extracted from Bar-On, Y.M., et al. The biomass distribution on Earth. PNAS (see footnote 130)

130 Bar-On, Y.M., et al. The biomass distribution on Earth. PNAS. 2018;115(25):6506-6511. <https://www.pnas.org/content/115/25/6506>

# AS A BUSINESS OWNER—IMPLEMENTING “GOOD FOOD” VALUES

The world-leading consulting firm McKinsey & Company developed the 7-S Framework and the four building blocks of change to help clients achieve their goals. The models can be applied to food businesses, too.<sup>131,132</sup>

## THE 7-S FRAMEWORK

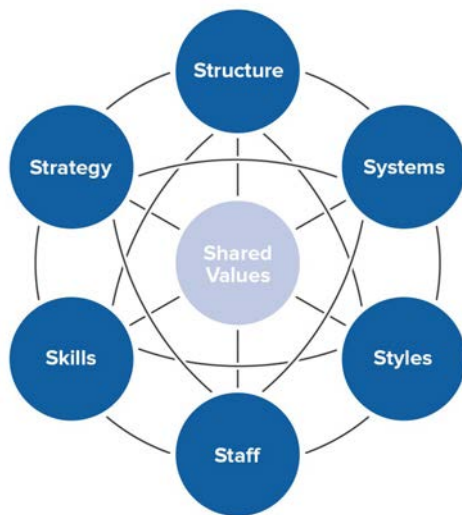
ELEMENT	EXPLANATION	EXAMPLE
<b>SHARED VALUES</b>	The core values of the organization are central to the development of all the other elements	Health, sustainability, social equity, or all of the above?
<b>STRATEGY</b>	The organization's plan for becoming and staying competitive in the market	Target customer? Price? Do we focus on a few signature dishes or try to develop many options?
<b>STRUCTURE</b>	How the company is organized	Does the chef make all the decisions or does the team have a say?
<b>SYSTEM</b>	The daily activities and procedures that staff use to get the job done	What is the procedure to handle leftovers and what to do if someone breaks the rule?
<b>STYLE</b>	The style of leadership	Is the kitchen like a big family, a battlefield, or a place to practice spirituality?
<b>STAFF</b>	The employees and their general capabilities	Should we hire a vegan pastry chef or train the current one? Interior designer?
<b>SKILLS</b>	The actual skills and competencies of the employees	How to train the servers to explain the messages in the food?

131 McKinsey & Company. Enduring Ideas: The 7-S Framework. <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/enduring-ideas-the-7-s-framework>

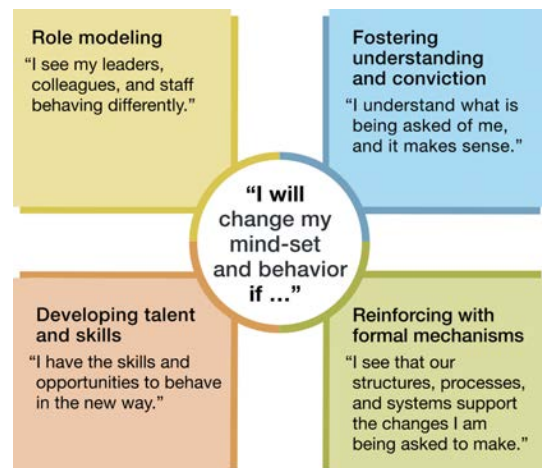
132 McKinsey & Company. The four building blocks of change. <https://www.mckinsey.com/business-functions/organization/our-insights/the-four-building-blocks-of-change>

The seven elements need to balance and reinforce each other for an organization to perform well. When adopting “good food” values for the first time, all the elements need to change to align with the new shared values.

Spend some time to check between each two of the seven elements – are they aligned? If not, what needs to change? Then, use the four building blocks of change to help communicate with the team to achieve the goal.



Source: McKinsey & Company, The 7-S Framework.  
Copyright © 2016. All rights reserved.



Source: McKinsey & Company, The Four Building Blocks of Change. Copyright © 2016. All rights reserved.

## THE FOUR BUILDING BLOCKS OF CHANGE

BUILDING BLOCK	EXAMPLE
<b>FOSTER UNDERSTANDING AND CONVICTION</b>	Explain to the staff why you want to use more plant-based foods and less meat
<b>REINFORCE WITH FORMAL MECHANISM</b>	Develop a plant-centric menu and a network of suppliers
<b>DEVELOP TALENT AND SKILLS</b>	Train the kitchen staff to replace meat with mushrooms, grains, beans and legumes, and/or veggies
<b>BE A ROLE MODEL</b>	Follow a plant-centric diet yourself and avoid using disposable utensils

## MARKETING PLAN – FORWARD DINING

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A dish is not just a dish, and a restaurant is not just a place to eat. As explored throughout the handbook, food carries crucial values that can solve urgent, complicated issues facing our generation and build a better world for generations to come.

These values go into the entire customer experience, from a harmonious environment to a seducing menu, from aesthetic plating to a server's warm greeting. Professional services provider Deloitte found in a 2017 survey that the top three qualities appreciated by restaurant guests are:<sup>133</sup>

- Staff is happy, friendly, and attentive.
- Restaurant uses sustainable food products and practices.
- Chef provides flexibility for me to customize a meal.

Therefore, investments in values can result in financial returns. Here are some tips to increase your customers' willingness to pay:

- Utilize fresh, ecological produce instead of conventionally grown ingredients.
- Highlight the health benefits of dishes on the menu.
- Incorporate rare or heirloom varieties instead of always using conventional varieties.
- Use elegant or creative food plating and presentation.
- A dish made with ugly vegetables can be worth more if the waste reduction message is delivered.
- A dining table without disposable utensils invites customers who value such efforts.
- A classy dining environment invites customers who are willing to pay a premium.

<sup>133</sup> Deloitte. Through guests' eyes: Serving up a great restaurant customer experience. 2017. <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/consumer-business/us-cb-restaurant-customer-experience-infographic.pdf>

# Part VI Further Edibles: Follow Up Reading and Materials

CONTINUE TO EXPAND YOUR SUSTAINABLE FOOD PALATE WITH A  
SELECTION OF TOPICAL RESOURCES

# APPENDIX

In order to keep this handbook an introduction to the layered complexities of our food system specifically in the context of human health, animals, and sustainability, we included a sample of chefs, initiatives, policies, programs, networks, ingredients, and tools. Many more exist, and we encourage readers to explore these and other resources further to deepen personal and collaborative engagement in the sustainable food movement.

## THE GOOD FOOD FUND

**Good Food Academy** (Chinese only)

<http://www.goodfoodchina.net/>

<https://www.goodfoodfund.net/>

## Good Food Pledge

<https://mp.weixin.qq.com/s/RVaCfeLvLUuNkUgVa-KMtA>

## BRIGHTER GREEN

**Skillful Means: The Challenges of China's Encounter with Factory Farming**

<https://brightergreen.org/china/>

**The Triangle: The Evolution and Future of Industrial Animal Agriculture in the U.S., China, and Brazil**

<https://brightergreen.org/the-triangle/>

**Other country case studies and papers:**

<https://brightergreen.org/publications>

## FILMS

What's For Dinner? (29 minutes) and the sequel, Six Years On (32 minutes)

<http://wfdinner.com/home/>

The Meatrix® Relunched (5 minutes)

<https://www.youtube.com/watch?v=K7K-9sTRLjg>

The Last Pig (53 minutes)

Pig Business (73 minutes)

Unity (140 minutes)

Fresh (72 minutes)

The World According to Monsanto (108 minutes)

Our Daily Bread: The Hidden Power of Food (92 minutes)

PlantPure Communities' Recommended list: [http://plantpurecommunities.org/wp-content/uploads/2019/06/InfoSheet\\_MovieList.pdf](http://plantpurecommunities.org/wp-content/uploads/2019/06/InfoSheet_MovieList.pdf)

## RESEARCH

### C40

Addressing Food-Related Consumption-Based Emissions in C40 Cities:

[https://c40-production-images.s3.amazonaws.com/other\\_uploads/images/2238\\_20190612\\_-\\_Food\\_report\\_.original.pdf?1560428556](https://c40-production-images.s3.amazonaws.com/other_uploads/images/2238_20190612_-_Food_report_.original.pdf?1560428556)

**Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)**

Global Assessment Report on Biodiversity and Ecosystem Services

<https://www.ipbes.net/global-assessment-report-biodiversity-ecosystem-services>

**The EAT-Lancet Commission Hub page**

<https://www.thelancet.com/commissions/EAT>

**Intergovernmental Panel on Climate Change (IPCC)**

Special Report: Global Warming of 1.5 Degrees Celsius Summary for Policymakers  
<https://www.ipcc.ch/sr15/chapter/spm/>

**Food and Climate Research Network (FCRN)**

Appetite for Change: Social, Economic and Environmental Transformations in China's Food System

<http://www.fcrn.org.uk/fcrn-publications/discussion-papers/fcrn-china-briefing-papers>

Plates, pyramids, planet (co-authored with the United Nations Food and Agriculture Organization, FAO)

[https://fcrn.org.uk/sites/default/files/ppp\\_final\\_10-5-2016.pdf](https://fcrn.org.uk/sites/default/files/ppp_final_10-5-2016.pdf)

Grazed and Confused

<https://www.fcrn.org.uk/projects/grazed-and-confused>

**World Resources Institute**

Creating a Sustainable Food Future: A Menu of Solutions to Feed Nearly 10 Billion People by 2050

<https://wrr-food.wri.org/>

Shifting Diets for a Sustainable Food Future  
<https://www.wri.org/publication/shifting-diets>

**Good Food Institute**

China Plant-Based Meat: Industry Report 2018  
<https://www.thegoodfoodinstitute.asia/>

**Chatham House**

Changing Climate, Changing Diets: Pathways to Lower Meat Consumption

<https://www.chathamhouse.org/publication/changing-climate-changing-diets>

**Institute for Agriculture and Trade Policy (IATP)**

Global Meat Complex: The China Series  
<https://www.iatp.org/global-meat-complex-china-series>

**China Environment Forum at the Woodrow Wilson Center**

A Global Choke Point Report: China's Water-Energy-Food Roadmap  
<https://www.wilsoncenter.org/sites/default/files/WATER%20ENERGY%20FOOD%20ROADMAP.pdf>

**The Environmental Effects of China's Growing Pork Industry**

<https://www.wilsoncenter.org/publication/infographic-environmental-impacts-chinas-pork-industry>

**Heinrich Böll Foundation and Friends of the Earth Europe**

The Meat Atlas  
<https://www.boell.de/en/meat-atlas>

**Humane Society International**

Animal Agriculture and Climate Change  
[https://www.hsi.org/news-media/factory\\_farming\\_and\\_climate/](https://www.hsi.org/news-media/factory_farming_and_climate/)

**Sustainable Table**

All Things Ethical Eating  
<https://sustainabletable.org.au/all-things-ethical-eating/downloadable-resources/>

**United Nations Food and Agriculture Organization (FAO)**

Livestock's Long Shadow: Environmental Issues and Options  
<http://www.fao.org/docrep/010/a0701e/a0701e00.htm>

**T. Colin Campbell Center for Nutrition Studies: The China Project**

<https://nutritionstudies.org/the-china-study/>

**TOOLKITS****Meatless Monday**

<https://www.meatlessmonday.com/free-resources/>

**Chefs' Manifesto Action Plan**

<http://www.sdg2advocacyhub.org/chefmanifesto#&gid=1&pid=1>

**PlantPure Communities**

<https://plantpurecommunities.org/toolkits/>

**OTHER RESOURCES****Green Monday**

<https://greenmonday.org/environment/>

**China Food Watch**

<https://www.chinafoodwatch.com/>

**WildAid**

<https://wildaid.org/programs/climate/>

**Roots & Shoots**

<https://www.rootsandshoots.org/>

**Waterkeeper Alliance**

<https://waterkeeper.org/campaign/pure-farms-pure-waters/china/>

**World Animal Protection**

<https://api.worldanimalprotection.org/country/china>

**Foodsource**

<https://www.foodsource.org.uk/>

**FoodPrint**

<https://foodprint.org/>

**Bits x Bites**

<http://www.bitsxbites.com/>

**Food Heroes**

<https://www.foodheroes.org/>

**Slow Food Great China**

<http://www.slowfoodchina.org/slowfoodenglish/index.html>

**Good Food Purchasing Program**

<https://goodfoodpurchasing.org/>

**Milan Urban Food Policy Pact**

<http://www.milanurbanfoodpolicypact.org/>

**Compassion in World Farming**

<https://www.ciwf.org.uk/research/>

**Food & Water Watch**

<https://www.foodandwaterwatch.org/>

**New York Coalition for Healthy School Food**

<https://www.healthyschoolfood.org/resources.htm>

**Physicians Committee for Responsible Medicine (PCRM)**

Vegetarian Starter Kit  
<https://p.widencdn.net/jyeygh/16037-NTR-Updated-Vegetarian-Starter-Kit-English-2>



## **The Chef's Good Food Handbook**

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