

sustainable cuisine

Climate change cannot be mitigated effectively without changing how we produce, transport and consume food.

The entire food system – which includes the production, packaging, transportation and disposal of everything we eat – accounts for 21-37% of all human-produced greenhouse gas emissions. By 2050, our food could account for almost half of all carbon emissions released by human activity unless more steps are taken to reduce its environmental impact. (BBC)

Transformation to healthy diets by 2050 will require substantial dietary shifts. Global consumption of fruits, vegetables, nuts and legumes will have to double, and consumption of foods such as red meat and sugar will have to be reduced by more than 50%. A diet rich in plant-based foods and with fewer animal source foods confers both improved health and environmental benefits. (EAT/Lancet Report)

The U.S. Environmental Protection Agency (EPA) published a report in 2021 on the environmental impacts of food waste. EPA estimated that each year, U.S. food loss and waste embodies 170 million metric tons of carbon dioxide equivalent (million MTCO₂e) GHG emissions (excluding landfill emissions) – equal to the annual CO₂ emissions of 42 coal-fired power plants. This estimate does not include the significant methane emissions from food waste rotting in landfills. EPA data show that food waste is the single most common material landfilled and incinerated in the U.S., comprising 24 and 22 percent of landfilled and combusted municipal solid waste, respectively. (US EPA)

Although the steps behind the supply chain for individual foods can vary considerably, each typically has seven stages:

- 1) Land Use Change
- 2) Farm
- 3) Animal Feed
- 4) Processing
- 5) Transport
- 6) Retail
- 7) Packaging

Across all foods, the **land use** and **farm** stages of the supply chain account for **80%** of GHG emissions. In beef production, for example, there are three key contributing factors to the carbon footprint at these stages: animal feed, land conversion, and methane production from cows. In the U.S., beef production accounts for 40% of total livestock-related land use domestically. 80% of agricultural land is used for feed factory animal farming.

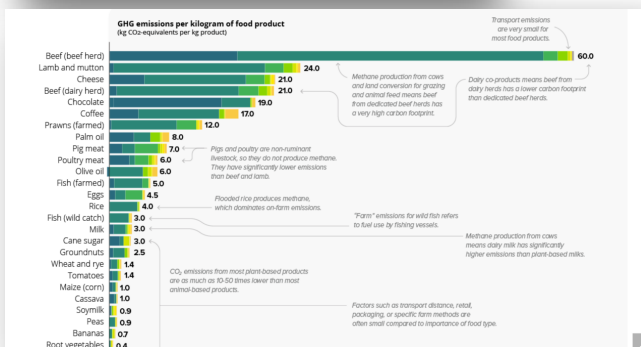
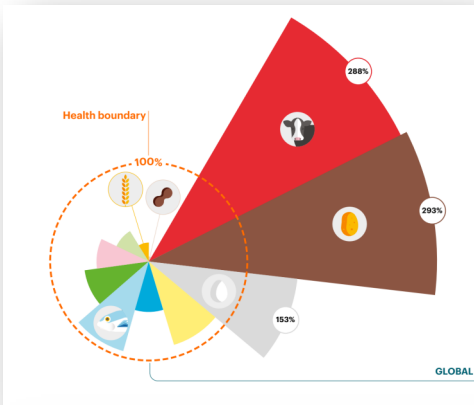
On the other end of the spectrum is **transportation**. This stage of the supply chain makes up 10% of total GHG emissions on average. When it comes to beef, the proportion of GHGs that transportation emits is even smaller, at just **0.5%** of total emissions.

Contrary to popular belief, sourcing food locally may not help GHG emissions in a very significant way, especially in the case of foods with a large carbon footprint.

The Rise of Plant-Based Alternatives

Amid a growing market share of plant-based alternatives in markets around the world, the future of the food supply chain could undergo a significant transition.

For investors, this shift is already evident. Beyond Meat, a leading provider of meat substitutes, was one of the best performing stocks of 2019—gaining 202% after its IPO in May 2019.



1 Goal – 2 Targets – 5 Strategies

Target 1 Healthy Diets

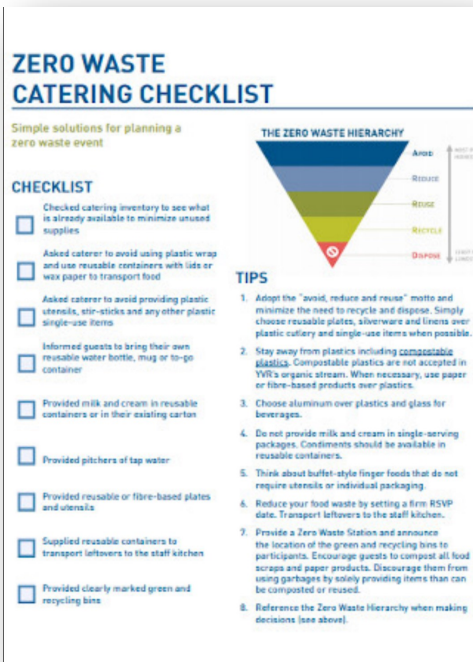
Healthy diets have an optimal caloric intake and consist largely of a diversity of plant-based foods, low amounts of animal source foods, contain unsaturated rather than saturated fats, and limited amounts of refined grains, highly processed foods and added sugars.

	Macronutrient intake grams per day (possible range)	Caloric intake kcal per day
Whole grains Rice, wheat, corn and other	232	811
Tubers or starchy vegetables Potatoes and cassava	50 (0-100)	39
Vegetables All vegetables	300 (200-600)	78
Fruits All fruits	200 (100-300)	126
Dairy foods Whole milk or equivalents	250 (0-500)	153
Protein sources		
Beef, lamb and pork	14 (0-28)	30
Chicken and other poultry	29 (0-58)	62
Eggs	13 (0-25)	19
Fish	28 (0-100)	40
Legumes	75 (0-100)	284
Nuts	50 (0-75)	291
Added fats		
Unsaturated oils	40 (20-80)	354
Saturated oils	11.8 (0-11.8)	96
Added sugars All sugars	31 (0-31)	120

Table 1 Scientific targets for a planetary health diet, with possible ranges, for an intake of 2500 kcal/day.

Although the planetary health diet, which is based on health considerations, is consistent with many traditional eating patterns, it does not imply that the global population should eat exactly the same food, nor does it prescribe an exact diet. Instead, the planetary health diet outlines empirical food groups and ranges of food intakes, which combined in a diet, would optimize human health. Local interpretation and adaptation of the universally applicable planetary health diet is necessary and should reflect the culture, geography and demography of the population and individuals.

checklist for sustainable catering



Plan for Sustainability.

- 1) Right size your events. Do not invite people just to fill seats, because they will also fill plates.
- 2) Check if your caterer keeps a sustainable kitchen, including the mulching of all unused plants, and menu.
- 3) Select a menu that suits the time of day and order suitable, smaller portions.
- 4) Replaced dairy and eggs with plant-based alternatives such as cashew or almond milk, fermented cashew cheese, or sour cream from tofu wherever possible.
- 5) Make plant-based food 50% or more of the total menu. Instead of asking if people are vegetarian, ask if they require meat (typically only 15-17% of the attendees will do so).
- 6) Do not announce the event as vegan or plant-based. If you want to raise awareness, state that the event follows sustainable food principles.

On the day.

- 1) use reusable equipment.
- 2) Reduce all plastic usage.
- 3) Serve individual portions, not buffet.
- 4) Flip the script on how you present the food. Have the plant-based foods listed first on any menu, and have them placed before any meat offerings.

Afterwards...

- 1) Ask the caterer to deliver remaining food to a homeless shelter or other charitable organization..

Guidelines

Based on the principles outlined above, the Forum has defined guidelines that should be implemented as far as possible while also taking into consideration the risks and opportunities associated with each local context.

Balanced menus

Menus are prepared by the Forum's catering suppliers and validated by Forum teams against the following criteria:

- Menus must include diverse and sustainable protein sources. The following choices should be respected: one that includes meat (although red meat will not be on the menu at the Annual Meeting 2022), one fish dish (sustainably sourced) and one vegetarian protein option. There should also be a vegan version of this option.
- There should be a 100% vegetarian day at each Forum event and once per week at the Forum's cafeteria in Cologne.

- To both reduce waste and for improved hygiene, plated options should be offered instead of buffets.
- Catering suppliers must provide solutions to food waste. One possible option is to offer excess food to the Forum's catering staff. At the Annual Meeting 2022, the Forum, in partnership with a local initiative, will distribute left over food that has not left the kitchen to third parties in the Davos community.
- Since 2020, kitchens at the Congress Centre have been equipped with artificial intelligence (AI) technology to analyse and reduce food waste.
- Organic waste is used for biogas production in Switzerland.