



S U S T A I N A B L E   D I E T S

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# Manifesto

A production of Sustentarea:  
Center for Extension Activities at the University of São Paulo, Brazil



SUSTAINABLE DIETS

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# Manifesto



**Aline Martins de Carvalho**  
**Dirce Maria Lobo Marchioni**

# Sustainable Diets

MANIFESTO | SUSTENTAREA

**Sustentarea**  
**University of São Paulo**  
**Brazil**  
**2019**

Carvalho AM, Marchioni DM. Sustainable diets: Manifesto Sustentarea. NACE Sustentarea, 2019.

Translator: Renata R. M. Wasserman.

This document is also available in Portuguese on the Sustentarea website:  
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# INDEX

## MANIFESTO

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Presentation	04
Introduction	05



## CHAPTER 1

---

What is sustainability, and what does it have to do with food?	06
We must change how we eat	08
We must change how we produce food	12



## CHAPTER 2

---

What can you do?	15
------------------	----



## CHAPTER 3

---

How can Sustentarea help?	19
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Bibliography	22
Team	24

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# Presentation



The present document, “Sustainable Diets: The Sustentarea Manifesto” defines sustainable diets in the Brazilian context, sets out how people can procure it, and what the Center for Extension Activities at the University of São Paulo (NACE: Núcleo de Apoio às Atividades de Cultura e Extensão Sustentarea) has been doing to help people achieve this goal.

We know that if we continue producing and consuming food as we do today, we will not have enough in the future to feed all the people on the planet.

Sustentarea believes that changes at all levels and in all areas have to be initiated as soon as possible, and to that end it develops educational material, recipes, and publications that aim to discuss and promote sustainable diet.

The present publication was developed by the founder of Sustentarea, Dr. Aline Martins de Carvalho, and by the Professor in charge, Dr. Dirce Maria Lobo Marchioni of the Department of Nutrition at the University of São Paulo, with the collaboration of all the members of NACE Sustentarea mentioned at the close of this document.

More information is available at [www.fsp.usp.br/sustentarea](http://www.fsp.usp.br/sustentarea).



# Introduction

Food and its production are directly linked to the health of people and of the environment. In the last few decades there has been an increase in the quantity of available food and a modernization in the means of production and preservation of food, which resulted in the decrease of hunger and undernourishment around the world. However, though now there is more food available, much of it is in the form of meat, and ultra-processed foods rich in calories, sugars, and fats, which has contributed to an increase in obesity, diabetes, and heart disease (1, 2).

In addition, food production has had a serious impact on the environment, such as a reduction in biodiversity, as well as pollution, and the use of large quantities of water and land, which in turn has had a negative effect on climate. In other words, how food is produced and consumed can have a large effect on both people and the planet (2).

Sustentarea believes that we must change this scenario and that coordinated action among all involved (governments, public and private sectors, and individuals) can help improve the health of both the people and the planet. End-point consumers play a fundamental role in this system, since they choose and buy the food, thus determining demand. With that in mind, Sustentarea resolved to issue the present document as a contribution to changing food consumption patterns, starting by showing the most recent and important scientific results of studies about sustainable diets.

This document is divided into three parts, beginning with a theoretical section on definitions of sustainability in general and in the production and consumption of food in Brazil, followed by suggestions about practical steps that can be taken by individuals to increase their own personal contribution to sustainability, and finally a section on the resources Sustentarea has to offer.



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Coordinator of Sustentarea

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Faculty responsible for Sustentarea



## CHAPTER 1

# WHAT IS SUSTAINABILITY AND WHAT DOES IT HAVE TO DO WITH FOOD?

The World Commission on Development and the Environment and has defined sustainable development as “meeting the needs of the present without compromising the possibility of future generations’ attending to their own needs,” which means consuming without exhausting, living without compromising life, and being responsible toward the future (3).

In fact, the definition of “sustainability” includes economic, social, and environmental aspects and aims toward a future that offers proper and sufficient conditions for life on the planet (4).

In 2015 the United Nations defined seventeen objectives for sustainable development goals (SDG) to transform our world, and several of these are directly connected to the production

and distribution of food, such as Zero hunger; Good health and well-being; Clean water and sanitation; Responsible production and consumption; Life underwater; Life on land; and so on (Figure 1) (5).

A recent notion also related to this theme is that of “sustainable diets,” defined by the FAO (Food and Agriculture Organization of the United Nations) as diets that protect and respect biodiversity and ecosystems and are culturally acceptable and accessible, economically fair, nutritionally adequate, secure, and healthy, and also optimize natural and human resources (6). It is thus a broad and complex concept to be implemented, especially since it is multidimensional and applies across many different areas (Figure 2).



Figure 1: Sustainable Development Goals.  
Source: UN, 2015 (5).



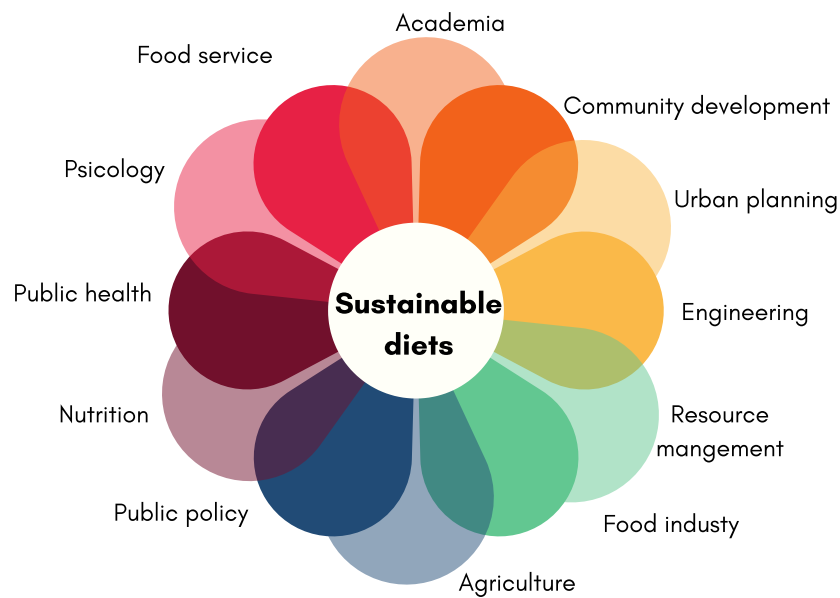


Figure 2. Graphic representation of characteristics of sustainable diets.

Source: Adapted from a University of Michigan document, 2018.

<http://graham.umich.edu/news/sustainable-diet-menu>

“

*“Global food production threatens climate stability and ecosystem resilience. When the two outcomes are taken together, the outcome is dire. A radical transformation of the global food production and consumption systems is urgently needed.”*

*Prof. Johan Rockström, Potsdam Research Institute for Climate Impact Research, and Stockholm Resilience Centre.*

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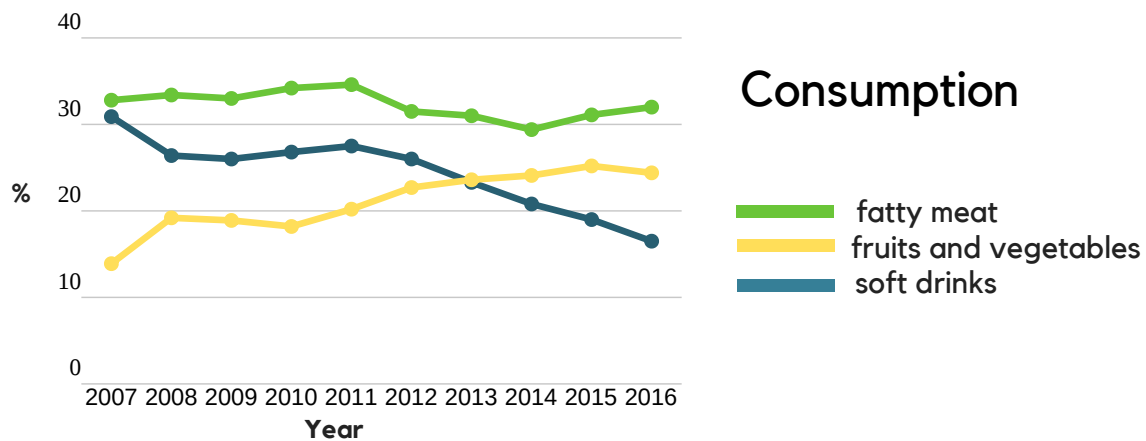
According to the latest research findings, the only way to reach SDG and more sustainable diets is through real change in:

- 1) how we eat and
- 2) how we produce food

# WE MUST CHANGE HOW WE EAT



Our population is getting sicker all the time. Nowadays more than 55% of Brazilians are overweight and more than 380 thousand die every year of cardiovascular diseases. Patterns of food consumption by themselves are responsible for 20% of deaths from chronic diseases in Brazil (7, 8, 9, 10). According to data from the IBGE (Brazilian Institute for Geography and Statistics), although the consumption of fruits and vegetables has increased in the last few years and that of soft drinks has diminished, only 24% of Brazilians consume five portions of fruits and vegetables every day; at the same time, 15% still consume soft drinks almost every day (11). In addition, about 30% of the population consumes excessively fatty meats (Figure 3).



## Weight excess

- BMI between 25 and 30kg/m<sup>2</sup> (overweight)
- BMI > 30kg/m<sup>2</sup> (obesity)

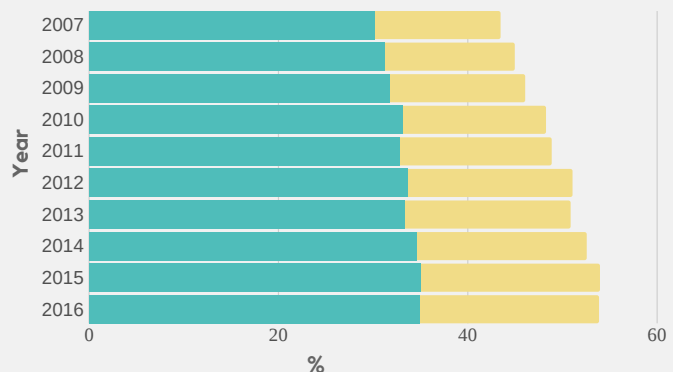


Figure 3. Time line of behavioral factors and obesity in Brazil.  
Source: Vigitel 2007–2016.

The Commission for a Sustainable diet, EAT-Lancet, composed of specialists from various parts of the world, recommends a diet that has a positive impact on health, reducing the risk of diseases, and also a positive impact on the environment, protecting the nature and amount of existing natural resources. Basically, this diet consists of plant-based foods, like whole grains, vegetables, legumes, and fruits, and restricts foods from animal sources, in particular beef, as well as fats, sugars, and tubers (Figure 4) (2).

	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

However, food consumption in Brazil is far from following these recommendations. According to the latest research, Brazilians consume very little in terms of vegetables, almost no whole grains, and few fruits—about one a day (12, 13, 14). On the other hand, Brazilians consume large quantities of added sugars (15), particularly in fruit juices, coffee, and soft drinks (16) and large amounts of saturated fats, especially from meat (Figure 5).

Figure 4. Recommendation for a healthy and sustainable diet.  
Source: EAT-Lancet, 2019 (2).

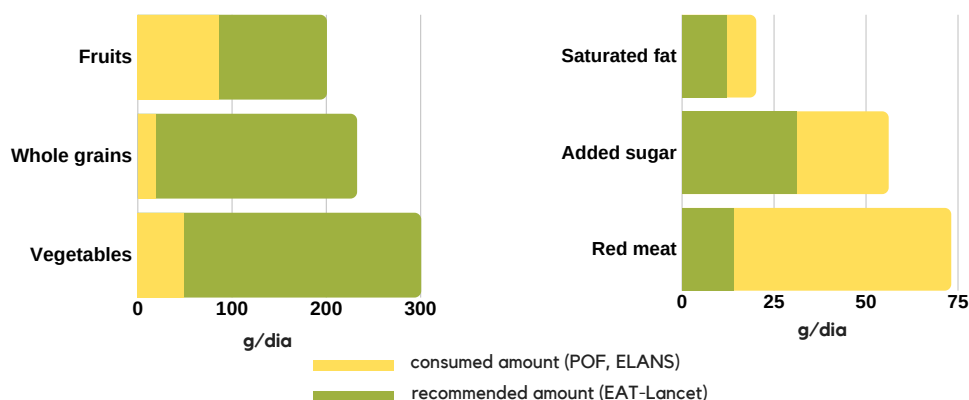


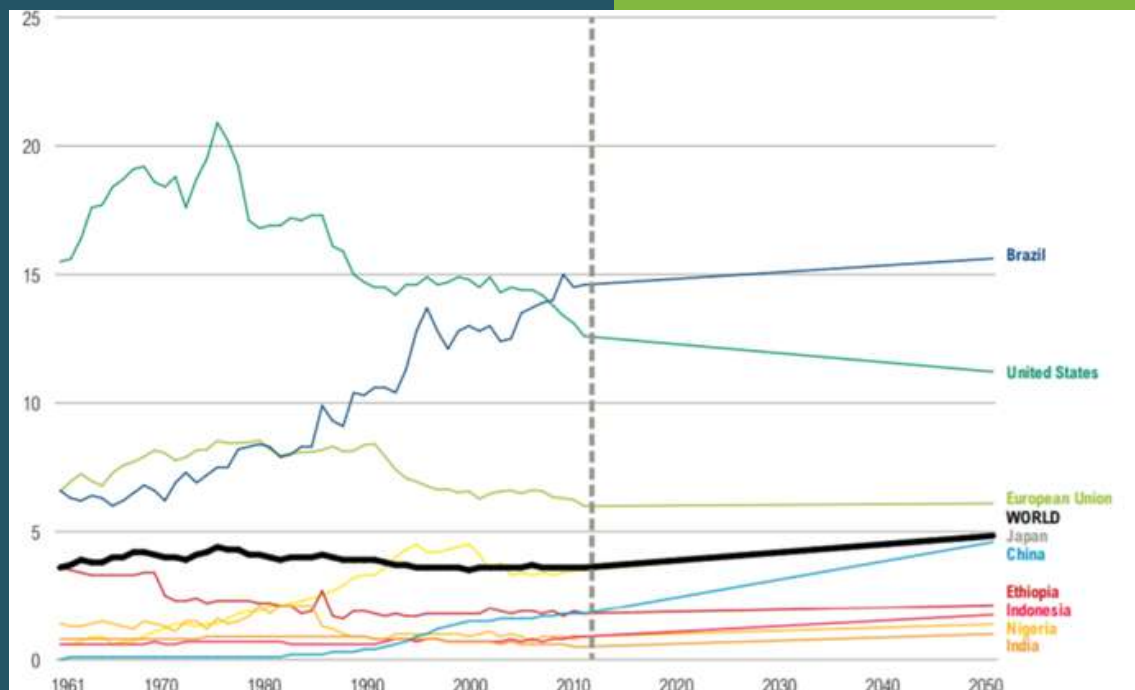
Figure 5: Amount of foods and nutrients consumed in Brazil, and amount recommended for a sustainable diet.  
Source: POF, 2008 (13); ELANS 2014 (14); EAT-Lancet 2019 (2).

One should stress that the availability of beef in Brazil has increased rapidly in the last decades, and is, nowadays, three times higher than the world average, surpassing even that in the United States (Figure 6) (17). Among Latin American countries, Brazil is the one with the highest index of meat consumption in general, and beef in particular, in its diet (14). There is convincing evidence that the consumption of excessive red and processed meat increases the risk of various diseases, including cancer and cardiovascular diseases (18). Nevertheless, it is estimated that more than 80% of the Brazilian population consumes more red and processed meat than recommended (19).

## BEEF

Figure 6: Estimates for per capita availability of beef, projected till 2050 (per capita grams/day).  
Source: WRI, 2016 (17).

## ESTIMATES for 2050



According to the Food Guidelines for the Brazilian Population, only about a fifth of Brazilians follow the recommendation to consume 85% of calories from natural or minimally processed foods and even those would still need to reduce red meat consumption and increase that of vegetables; this shows that the consumption of meat is high throughout the land (20).

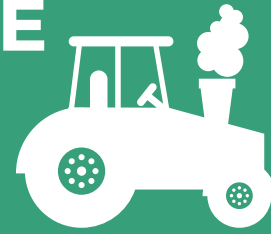




“Transformation toward healthy diets by 2050 will require substantial dietary shifts. Global consumption of fruits, vegetables, nuts, and legumes will have to double, and consumption of foods like red meat and sugar will have to be reduced by more than 50%. A diet rich in plant-based foods and with fewer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

*Prof. Walter Willett, School of Public Health at Harvard University.*

# WE MUST CHANGE HOW WE PRODUCE FOOD



Though the general picture of how we produce food has evolved in the last few decades, increasing food availability and reaching, today, 350 million hectares of agricultural and cattle-raising land in Brazil, food production exerts a substantial impact on the environment (21). Some examples of that impact are the loss of biodiversity, the extensive use of land, heavy use of fresh water, atmospheric pollution, waste, and soil pollution with nitrogen and phosphorus (2).

The different forms of production, as well as the kinds of foods produced, have different effects on the environment. Agroecology, or organic production, for instance, preserves higher soil quality, does not use synthetic fertilizers or herbicides and pesticides in growing food products, uses less energy, and protects biodiversity (22). However, there is no consensus on whether organic food-growing systems would be able to feed the whole planet, given their lower average productivity, especially for certain kinds of foods (23, 24).

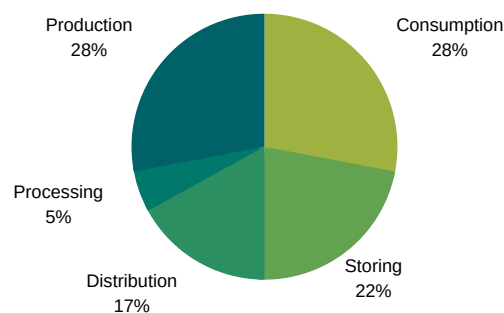


Figure 8: Food waste in Latin America.

Source: FAO, 2014 (33).

At this time, the greater part of Brazilian agricultural land (47%) is dedicated to cattle-raising (21). Beef, which is one of the most highly desired and consumed food in Brazil (16, 25), is also the food whose production has the highest impact on the environment, since cattle-raising is responsible for a great part of the deforestation of the Amazon, of

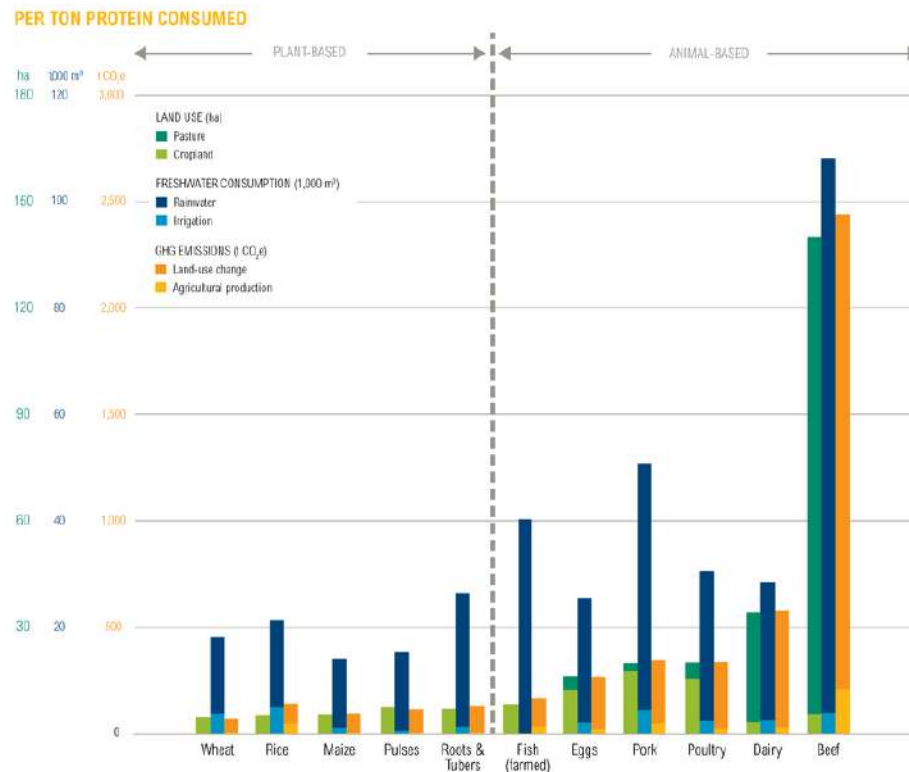


Figure 7: Use of natural resources according to the kind of production (plant or animal origin).  
Source: WRI, 2016 (17).

logging, and of the destruction of biodiversity. This sector of the economy is also responsible for the production of high amounts of green-house gases, causing more pollution than the transportation sector (26, 27).

Still, the production of fruits, vegetables, grains, and legumes also uses up large amounts of natural resources. For instance, agriculture takes up about 19% of available land, uses a high volume of water, particularly for irrigation, and contributes to the pollution of water and soil with fertilizers and herbicides and pesticides (28, 29, 30, 31). Even so, the impact on the environment of the production of plant foods is up to five times lesser than that of the production of animal foods (Figure 7) (17).

Another important aspect of food production is waste. While millions of people still go hungry, about 30% of foods produced are lost or wasted around the world—if properly used, according to the FAO, this could feed about two billion people (32). It is estimated that food that is produced but not consumed represents a loss of around 750 billion dollars a year at a high cost to the environment, particularly in water use, as well as being responsible for the release of 3.3 billion tons of greenhouse gases a year.

In Latin America this waste takes place mainly in production and in the preparation of food in the home (Figure 8) (33).

Some institutions, like the Banco de Alimentos (Food Bank), Comida Invisível (Invisible Food), and Fruta Imperfeita (Imperfect Fruit) work to mitigate this scenario, but it is the case that individuals can act toward this mitigation as well, by purchasing only what is necessary, fully using everything that is purchased, using cooking techniques that preserve foods, and composting when possible to generate humus.

Although the production of processed foods uses large quantities of water, energy, and packaging, the environmental impact of animal foods (meats and cheeses) is between three and five times greater than the impact of producing processed foods (Figure 9) (34). However, though the environmental impact is smaller, the addition of large amounts of sugar, salt, and fats, common in the food industry, is deleterious to health (20). Thus, the consumer must read labels attentively in order to make wise choices in the purchase of processed foods.

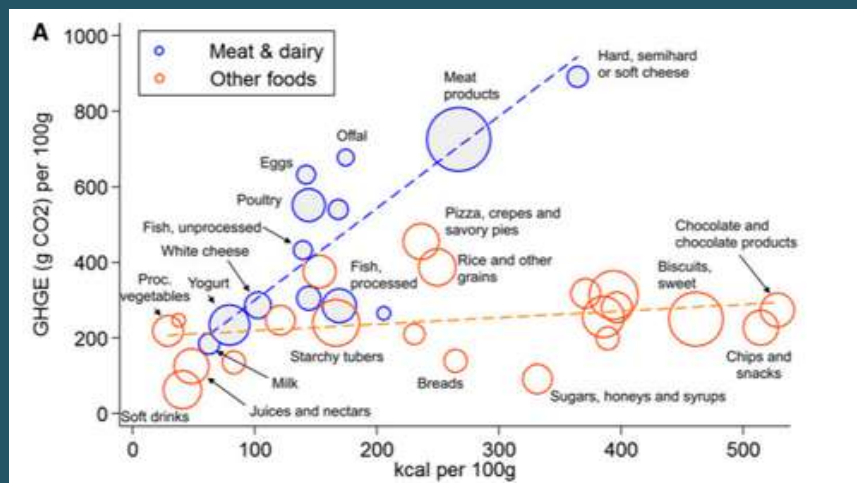


Figure 8. Environmental impact of different food groups (greenhouse gas emissions by kcal per 100g of food). Source: Drewnowski et al., 2015 (34).

According to EAT-Lancet several changes need to be effected in food production to make it sustainable by 2050. Some of the changes mentioned are: reducing food waste by half; reducing the use of fertilizers; reducing the emission of greenhouse gases related to food production, and optimizing the use of water and land in food production—among others (2).



## CHAPTER 2

## WHAT CAN YOU DO?

Choosing to eat healthily and sustainably can improve your health and that of the planet. Here is some information that can help making those choices.



Increase consumption of fruits and vegetables. Diversify! On Sustentarea's website you will find recipes for fruits and vegetables, tested by our team! Remember that potatoes and cassava are not vegetables!

Reduce the consumption of meat, especially of beef. No need to be radical! Start easy, but start now! The best substitutes for meat are legumes, including beans, peas, lentils, chickpeas, and soy.



Consume whole grains (brown rice, whole wheat pasta, quinoa, rye, etc.) and avoid refined grains like white rice and ordinary pasta.



Avoid foods rich in sugar, fats, and salt, whether ultra-processed (like soft drinks and sugared juices) or home-made foods containing much sugar, salt or fats (like cakes or fried dumplings).

Always read the lists of ingredients in packaged foods, with special attention to mentions of items like fat or sugars, and specification of nutrients in the contents.

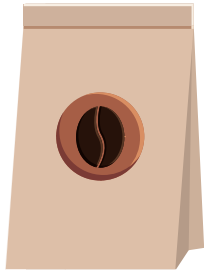


Avoid buying heavily packaged foods; look for reputable places that sell in bulk or directly from producers. Remember to take your own reusable shopping bag.

Try to find out where the food you are buying comes from, whether it comes from the state where you live, or from another country, and how it was transported. Foods produced close to where you live probably have a lighter impact on the environment.

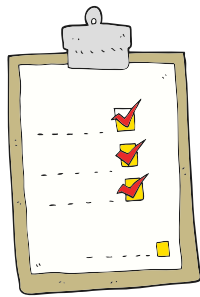


Sort your garbage (recyclables, ordinary garbage, and compostable) and dispose of it appropriately.



Avoid waste when eating out by either asking for smaller portions, or by taking home the leftovers.

Avoid waste at home by using peelings and seeds to make soups and sauces. Use the foods with the closest sell-by dates first, freeze ready-made foods and those of which you have large amounts—they will then last longer.






Plan your purchases, so that you will buy only what is necessary! Do not go shopping when hungry, or you will buy much more than you need, probably also foods rich in fats and sugars.

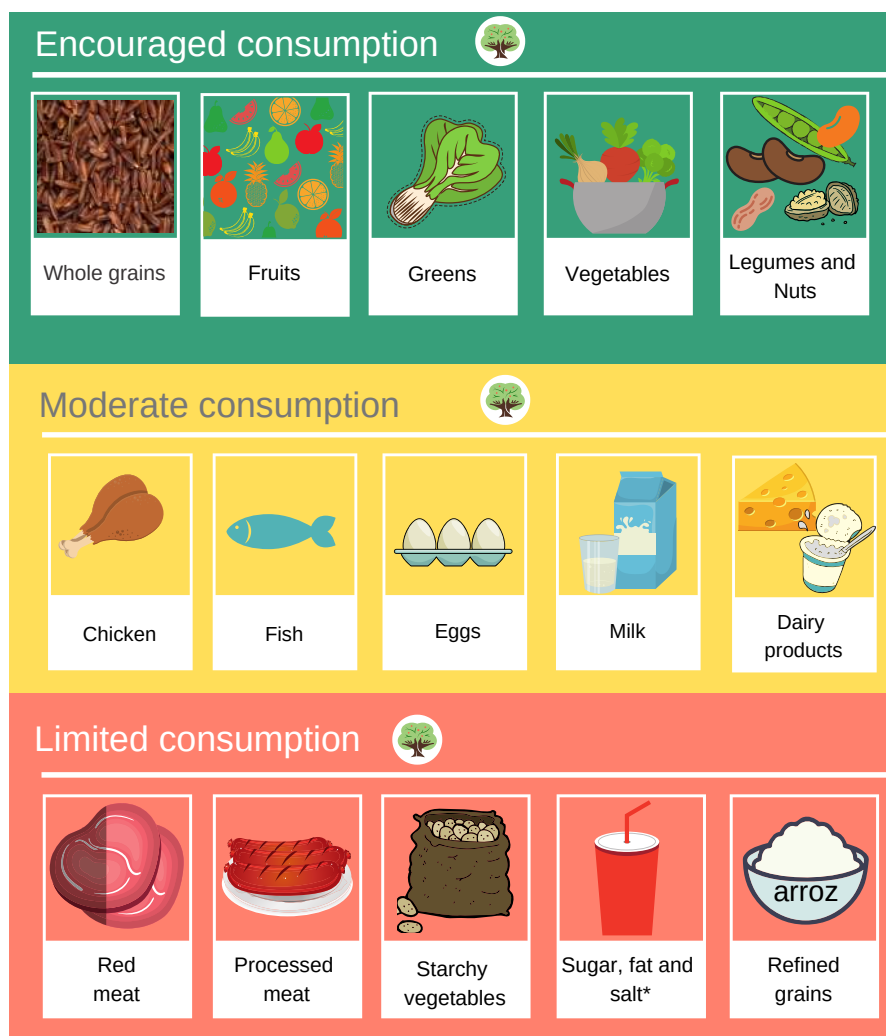
When possible, buy organic foods. Search out information about pesticides and herbicides on the Brazilian Health Regulatory website about the Analysis Program on Herbicides and Pesticides in Foods.



Try to buy seasonal foods, which will be cheaper and tastier! Consider buying “ugly” produce that even if it does not look perfect, is still perfectly edible. Diversify your diet.

In short, a healthy and sustainable diet consists of:

-  The preferred consumption of vegetables, fruits, whole grains, legumes, and nuts.
-  Moderate consumption of fish, poultry, and milk products.
-  Reduced consumption of red and processed meats, foods rich in sugars, fats, and salt (including ultra-processed foods), refined grains, and tubers such as potatoes and cassava.



\* food with high amounts of sugar, fat and salt, including ultra-processed food (ice cream, soft drink, etc) and homemade food (cake, fried food, etc).

However, how can all this information be integrated into daily life, into shopping, on the table? Sustentarea can help.



## CHAPTER 3

## HOW CAN SUSTENTAREA HELP?

Sustentarea is a Center for Extension Activities at the University of São Paulo, Brazil, created with the objective to disseminate information about foods and sustainability, and to encourage changes in behavior about and toward food.

Sustentarea aims to be a meeting space for the academy and society at large, where it is possible to discuss and implement innovative activity to promote sustainable food systems, and entrepreneurship in the field of sustainable food production and consumption. In addition, Sustentarea aims to bring cutting-edge food science to the general population and, at the same time, introduce discussions relevant and useful to society present and future, into the academy.

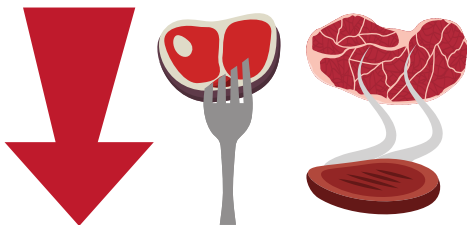
At this time, Sustentarea contributes to this effort by making information available for free, on food and sustainability, based on scientific evidence, by means of educational material on our social networks (Facebook and Instagram), and on our blog. In addition, Sustentarea aims to support durable changes in behavior starting from the preparation and dissemination of low environmental impact recipes, as well as organizing discussion groups, talks, and meetings. All of our materials and public events rest on the pillars of the information we have gathered and are freely available on social media and on our website: [fsp.usp.br/sustentarea](http://fsp.usp.br/sustentarea).



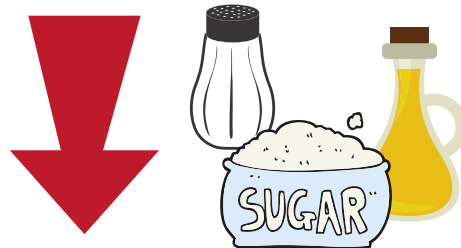
# SUSTENTAREA

## PILLARS

**REDUCTION IN THE  
CONSUMPTION OF RED  
AND PROCESSED MEATS**



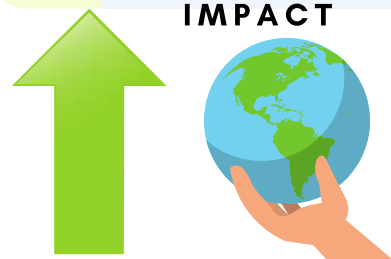
**REDUCTION IN THE  
CONSUMPTION OF SALT,  
SUGAR, AND FATS**



**INCENTIVES TO THE  
CONSUMPTION OF  
FRUITS AND VEGETABLES**



**INCENTIVES TO THE  
CONSUMPTION OF  
PRODUCTS WITH LOW  
ENVIRONMENTAL  
IMPACT**



It is not easy to achieve sustainable management of food production and consumption, because it cannot be done by individual effort only. Still it is necessary for every individual to do his or her best, on the basis of evidence-based choices.

With that in mind, we have created healthy recipes with tasty, culturally appropriate seasonal ingredients, which we publish fortnightly on our website. Additionally, we publish cookbooks geared to the four seasons (Figure 10) and educational materials, like infographics, primers, and magazines, with original material about food and sustainability. All materials are freely available on our website and social networks to help you make healthy food choices for you and your family.

Follow us on our social network for access to material, events, and much information.



Figure 10. Sustentarea's recipe book.



Figure 11. Sustentarea's magazines.

This pamphlet is not intended to offer medical/nutritional counseling. Seek out a physician/nutritionist if you need answers about your personal health. We here declare that we are free of conflicts of interest.

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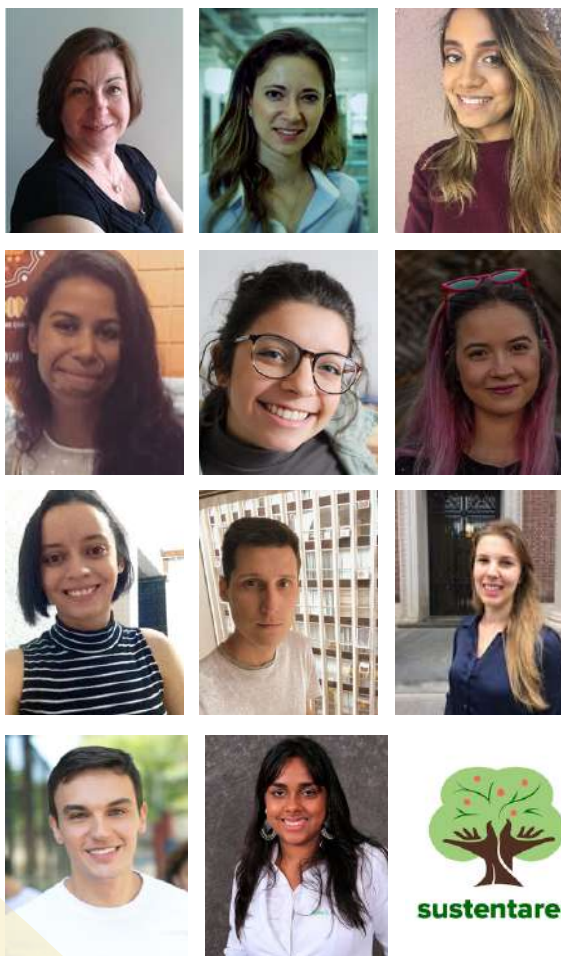
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SUSTAINABLE DIETS

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# Manifesto





The present document, “Sustainable Diets: The Sustentarea Manifesto” defines sustainable diets in the Brazilian context, sets out how people can procure it, and what the Center for Extension Activities at the University of São Paulo (NACE: Núcleo de Apoio às Atividades de Cultura e Extensão Sustentarea) has been doing to help people achieve this goal.

We know that if we continue producing and consuming food as we do today, we will not have enough in the future to feed all the people on the planet.

Sustentarea believes that changes at all levels and in all areas have to be initiated as soon as possible, and to that end it develops educational material, recipes, and publications that aim to discuss and promote sustainable diets.

More information is available at [www.fsp.usp.br/sustentarea](http://www.fsp.usp.br/sustentarea).