Food for the Future

Make sustainable food a part of daily life
Introduction

The food we eat each day is closely linked to environmental issues like deforestation, overexploitation, greenhouse gas emissions, ecological contamination from fertilizers and other agricultural chemicals, and overproduction and mass waste of food itself. Sustainable foods are those that are produced and finally consumed in a way that takes into account these kinds of issues.

We at Sony see these issues as affecting all people on Earth, and believe it is our duty to help solve them. This is why we’ve made promoting the use of environmentally conscious food one of our Green Management 2025 medium-term environmental targets.

For our society to truly be sustainable, we must always consider the connections food has with the environment.

Food for the Future

Make sustainable food a part of daily life

With that in mind, we have created this booklet as a guide to the actions we can all take to eat more sustainably.

Through our Food for the Future project, we at Sony will help achieve Goals 2, 12, 13, 14 and 15 of the SDGs.
The problems with food today

Production and processing

At the production stage, fisheries and farms sometimes focus on productivity and efficiency rather than working with nature, which can contribute to climate change, loss of local biodiversity, and water and soil pollution. Another major issue is food loss, which happens during the selection and processing of produce and other foods.

Factors like overfishing and the impact of water pollution on aquatic animal breeding significantly lower populations of fish and other marine life. As of 2017, one third of global marine stocks had been overfished [1], and there is concern that even fish like blackfin tuna—popular in sushi—are being driven to extinction. Chemicals used in aquaculture can also affect ecosystems.

Improper use of fertilizers and other agrochemicals, conversion of forests to farmland, economically driven development of farmland and waterways, and large plantations in rainforests can all negatively affect biodiversity. Agrochemicals in particular sometimes flow from farmland into rivers and oceans, causing water pollution.

According to FAO, 14.5% of human-induced greenhouse gas emissions come from farming animals [2]. Deforestation to create new grazing pastures greatly affects global warming and biodiversity. There is also rising criticism of the large amounts of grain and water used to raise livestock in the midst of water shortages and food crises.

CO2 emissions are produced by the fuel used in trucks, ships and planes that transport food, and are a major contributor to global warming. For example, Japan imports much of its food. This creates 16.9 million tons of CO2 emissions each year, which is 1.87 times the amount generated by transporting food domestically [2].

Retailers have high standards for the appearance of produce, so large amounts of imperfect items get thrown away. This wastes all the energy that was used in their production. Disposal of food that is past its best-before date is also a problem around the world. In 2016, France established a law prohibiting supermarkets from doing this.

Large amounts of food are actually wasted at the retail and consumer levels—in our homes, supermarkets and restaurants. Each year, over 900 million tons, or 74 kg per capita, of food waste is generated around the world, of which 61% comes from households, 26% from food service, and 13% from retail [3].

Transport, sales and consumption

Tons of food is wasted at supermarkets and in homes, while 8.9% of the world’s population suffers from hunger [1]. A large amount of energy is thus wasted to create, transport, sell and dispose of food that is never consumed. The energy used in long-distance transport is also a problem.

1. Source: UN Food and Agriculture Organization (FAO) “The State of World Fisheries and Aquaculture 2020”
2. Source: FAO “Tackling Climate Change Through Livestock”
Here are some tips on where to shop, what to buy, and how to cook and eat sustainably.

### Shopping

#### Make a shopping list

A list can help you avoid impulse buys and over-purchasing. Think about the meals you’ll cook in the next few days, then check which ingredients you already have and memo down those you need to buy. You can use a pen and paper, but don’t forget that your smartphone comes with a handy note app perfect for making lists!

#### Choose sustainable items

Ecolabels (see pp. 10-11) indicate if a food was grown or captured in an environmentally conscious way. Items with a Rainforest Alliance certification mark or other ecolabels can be found at natural food stores, but are also increasingly available at your local supermarket. Make it a point to look for them when shopping.

#### Choose sustainable seafood

Buy fish and other seafood that are listed as "recommended" or "sustainable" in your region’s seafood guides based on species populations, fishing methods, and impact on ocean biodiversity. The Monterey Bay Aquarium Seafood Watch® program (US) and the WWF’s Sustainable Seafood Guides (Europe, Asia) are good places to start.

#### Consider food miles

When choosing an item, think about where it comes from. A food with high miles (item weight × transport distance) has higher transport-related CO2 emissions, and a greater impact on the environment. Local produce grown outdoors will be fresh and have particularly low miles.

#### Buy clearance food

Buying discounted foods near their sell-by, best-before or use-by dates is not only a money saver, but also helps reduce food waste. You can now find this kind of food using websites and smartphone apps, such as tabeloop (Japan) and Flashfood (US).

#### Say no to plastic

To help cut down on single-use plastic waste, try choosing items sold without plastic packaging. Look for products in glass bottles, paper cartons or metal cans, or foods sold in bulk or refills, and take them home in a reusable shopping bag.
Fruits and vegetables grown outdoors according to natural cycles result in fewer CO2 emissions than those cultivated in greenhouses using fossil fuels and electricity, and are even said to be more nutritious. Eating seasonally also gives you a feeling for the richness and cycles of nature.

There are plenty of ways to reduce waste through cooking, like using vegetable or seafood offcuts to create soup broth, over-ripe fruits to make jam, and fat trimmed from meat as cooking oil. Eating vegetables with the skin on also provides extra nutrients while reducing waste.

Put leftovers in a container and store them in the fridge or freezer for later. If you don't have a lid, silicone covers and beeswax wraps are great reusable alternatives to single-use plastic wrap. Traditional preservation techniques like pickling, fermentation and dehydration are also fun ways to save food.

How about starting a compost bin in your kitchen, backyard or on your balcony? This reduces both waste and the smell of food garbage, and produces high-quality soil that can be used to start your own garden at home.

Wrapping up leftovers at restaurants and taking them home also helps reduce food waste, but only if you actually eat them later! Eating leftovers the next day can also be a great way to save money.

Rather than waste resources with single-use plastic bottles, cups and straws, make it a habit to carry reusable items with you. You can use apps like mymizu (Japan) or Tap (US) to search for places to refill your reusable water bottle.
**Choosing products with ecolabels**

Ecolabels are given to products to signify that they have passed the strict standards of a certification organization and are produced sustainably. Here, we introduce some widely used ecolabels that you can look for when you go shopping.

**Fishery certifications**

![Certified Sustainable Seafood](https://www.msc.org)

**GGN label**

The GGN label stands for certified farming and transparency. Safe and responsible farming contributes to sustainable development for the good of future generations and our planet.

An identification number with the label allows you to trace your product back to its origins because transparency is at the heart of the label.

**Rainforest Alliance marks**

The Rainforest Alliance is an international non-profit organization working to create a better future for people and the environment.

These marks show that a product is produced using sustainable farming methods in a way that conserves forests, promotes better livelihoods and human rights for farmers, and that is adapted to and helps mitigate the climate crisis.

**Fairtrade International certification label**

This label certifies that the entire manufacturing process, from production to completion of the final product, is done according to economic, social and environmental international Fairtrade Standards.

Assurances of the label include fair wages, safe working environments and protection of human rights for workers, and biodiversity conservation.

**RSPO Trademark**

This is an ecolabel from the Roundtable on Sustainable Palm Oil (RSPO).

The RSPO has developed a set of environmental and social criteria which companies must comply with to produce Certified Sustainable Palm Oil. When properly applied, these criteria can help minimize the negative impact of palm oil cultivation on the environment and communities in palm oil-producing regions.

**Organic labels**

These labels appear on foods produced naturally, with the principle of not using artificial chemicals like pesticides and fertilizers. Each country or region has their own organic certification systems, and their own unique labels, such as the JAS mark in Japan.

Reference: A global directory of organic labels (Ecolabel Index)

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2. The actions we can take

Certain labels are displayed on seafood products that have been fished or farmed in a way that adequately conserves marine resources and ecosystems.

The Marine Stewardship Council (MSC) and Aquaculture Stewardship Council (ASC) are two examples of international non-profit organizations that, based on rigid standards, independently confirm if products are caught or cultivated sustainably.

The GGN label stands for certified farming and transparency. Safe and responsible farming contributes to sustainable development for the good of future generations and our planet.

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As COVID-19 has changed our way of life and kept many of us at home more often, a growing number of people have been getting into vegetable gardening. Growing food at home vastly reduces food miles, and also helps conserve biodiversity. Since the emergence of German *Kleingarten* in the mid-19th century, community gardens have become common around the world. Some people grow their own "edible garden" at home, enjoying the flowers, greenery and fragrances of vegetables, fruits and herbs. More communities are also starting Incredible Edible projects, where volunteers work together to grow vegetables in public spaces.

There are also innovative products being developed around the world to meet modern needs. For instance, there is the compost-in-a-bag LFC Gardening Set from Japan, which comes with seeds you can plant in the finished compost. Why not try something new at home by starting your own garden?

A new farming method to produce food while fostering rich ecosystems

Developed by Sony Computer Science Laboratories researcher Masatoshi Funabashi, Synecoculture is a farming method that fosters a fertile ecosystem while producing beneficial plants by growing a wide variety of species close together without plowing or using fertilizers and other chemicals.

Synecoculture has been trialed in the Sahel region of Africa since 2015, and has successfully created a rich ecosystem on desertified land. There are also kits available to teach the principles of Synecoculture using gardens or planters.

When humans introduce an invasive species that rapidly changes an environment, it destroys the balance of the local natural ecosystem. This is currently happening around the world, and is threatening many native species. As a result, biodiversity is at risk in many regions.

What can be done to restore the environment for native species? One answer is to eat the invader. In the capital of Germany, for example, invasive American crayfish that live in rivers and lakes are now captured and sold as “Berlin lobster.” In the country of Belize, fast-breeding lionfish are caught and eaten, or used to make accessories.

Even native species can disrupt the balance of an ecosystem if they reproduce too fast. Deer are exemplary of this, so the meat from animals that are culled for population control often gets turned into delicious foods.

Using these types of animals as food helps control their populations while putting money in hunters’ pockets and feeding people at the same time. So the act of eating can be beneficial to both the natural environment and humans.
Launched by Paul, Mary and Stella McCartney in 2009, Meat Free Monday is a not-for-profit campaign which aims to raise awareness of the detrimental environmental impact of livestock excrement, and massive consumption of feed and water. For example, raising cows requires enormous resources, so much in fact that it takes 11 kg of grain and 15,000 L of water to produce just 1 kg of beef.

Reducing animal meat consumption is quickly gaining traction as a way to help solve issues related to food supply and the environment. Plant-based meat made from soy or other plants are becoming popular worldwide in place of beef, pork, chicken and fish. In the US, Beyond Meat® and Impossible Foods are two big producers of plant-based meat, which are now available at fast food chains. To appeal to meat lovers, they faithfully reproduce the texture of animal meat, and can sometimes be found at supermarkets. There’s even a 100% plant-based canned tuna made and marketed by a US-based company.

There has also been progress in developing meat from artificially cultured animal cells, and it probably won’t be long till we see cultured meat in stores.

Global meat consumption has more than quadrupled in the past 50 years, creating concerns about things like greenhouse gases from cow burps, the environmental impact of livestock excrement, and massive consumption of feed and water. For example, raising cows requires enormous resources, so much in fact that it takes 11 kg of grain and 15,000 L of water to produce just 1 kg of beef.

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Insects don’t require much food to grow, and their growth process generates few greenhouse gases. What’s more, they’re a rich source of protein and other nutrients. This makes them a potential source of protein to support our growing world population, which is forecast to reach nine billion by 2030. The UN Food and Agriculture Organization (FAO) has proposed edible insects as one solution to food supply challenges.*

People in many regions have always eaten insects, and around two million people consume more than 1,900 different types globally. In 2018, the EU unified its regulations on edible insects, making them legal in all member countries. In the US, cricket-based protein bars are becoming popular, while in Japan, lifestyle brand Muji surprised everyone with the launch of crackers that are also made from powdered crickets.

Many people are hesitant to try insects whole, but they’ll likely become a more familiar ingredient in the future.

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*Source: FAO "Edible insects: future prospects for food and feed security*
Promoting "ugly" produce

More people are now prioritizing flavor

They could be too big, too small, too curved, a bit damaged, or a bit discolored. These are some of the reasons many perfectly good fruits and vegetables get deemed "non-aesthetically standard" and disposed of before they even reach retailers. As much as 40% of a harvest can be lost this way. Some are pre-cut and sold or used in processed foods, but most are simply thrown away.

To solve this problem, there are many initiatives in place worldwide. The US’s Imperfect Foods is a grocery delivery service that offers different-looking foods at a discount. In Japan, online service única is focused on purchasing non-aesthetically standard produce directly from farmers for delivery to consumer, while a leading French supermarket chain also encourages the consumption of ugly produce. Farmer’s markets are also popular places to buy imperfect produce.

Yet producers alone can’t solve this problem—changing the awareness of consumers and retailers is vital. If more people would realize that taste matters more than looks, it would become easier for non-standard produce to make its way into stores. Why not help promote change by buying ugly produce?

Fighting food waste around the world

Groundbreaking ideas that are gaining steam

Throughout the world, households, restaurants and retailers throw away enormous amounts of food. This results in over nine billion tons* of uneaten food being disposed of each year. There are many different initiatives worldwide that are now trying to do something about it.

Food banks are one that works to tackle both food waste and issues of poverty and hunger. All over the world, non-profit organizations and local governments collect edible food that, for various reasons, would otherwise be thrown away by companies and individuals, and deliver it through food banks to facilities or people in need.

A growing number of organizations have begun using websites and apps to redistribute surplus food. For example, the Too Good to Go app provides a way for cafés, supermarkets and bakeries to sell their perfectly good, surplus food to consumers each day at a discount, and is available in 14 European countries and the US. In the Netherlands, there is also Instock, a unique restaurant that buys and cooks still-edible food slated for disposal. Yet even groundbreaking ideas can’t succeed without individual participation. If any of these sound interesting to you, why not give them a try?

Imperfect Foods

US online grocer building a kinder, less wasteful food system

Imperfect Foods is the leading online grocer working directly with farmers and producers to rescue and redistribute goods across multiple grocery categories, including produce, shelf-stable items, dairy, meat, seafood and its own private label offerings to eliminate unnecessary food waste. Committed to sustainability and waste elimination, in 2020 alone, Imperfect Foods was able to save 50 million pounds of food.

Examples of services

<table>
<thead>
<tr>
<th>Service</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too Good To Go</td>
<td>An app providing a way for retailers to sell surplus food to consumers at a discount. Available in 14 European countries and the US.</td>
</tr>
<tr>
<td>Karma</td>
<td>An app for buying delicious, unsold food at a discount from your favorite cafes, restaurants and supermarkets, primarily in Europe.</td>
</tr>
<tr>
<td>Uglyfood</td>
<td>A Singaporean company that aims to educate on food loss while selling non-standard grocery items at a discount.</td>
</tr>
</tbody>
</table>
A day in the life of Sustainable Sam

What does a day in the life of a sustainable eater look like?
Let’s take a look at Sam’s daily routine.

6:00 Wake up, breakfast
I use vegetables and herbs from my kitchen/balcony gardens, so breakfast is very nearly food mile-free!

7:30 Tend to the compost & water the plants
Yesterday’s food scraps get tossed in the compost bin on the balcony. I also never forget to add water the plants nearby!

9:00 Arrive at the office
Time to start work!
I stay hydrated at the office with my reusable water bottle. I also carry a travel mug perfect for grabbing coffee to go.

12:00 Lunch
For lunch, I bring a packed meal from home. On busy days, lunch is often leftovers from the day before, but eating outside on a sunny day makes them taste extra delicious!

Meeting at a cafe
At cafes, I ask to have coffee put in my travel mug. Some shops offer discounts when you bring your own!

15:00 Meeting at a cafe
Armed with a shopping list written the night before, I look for foods that have ecolabels or are organic, produce grown locally, and clearance items. Today I’ve also picked up plant-based hamburgers.

17:30 Done for the day!
I sometimes get extra take-out for dinner from my favorite cafe. They let me bring my own containers, which helps cut down on trash.

18:00 Shopping
I use vegetables and herbs from my kitchen/balcony gardens, so breakfast is very nearly food mile-free!

19:00 Get take-out
I stay hydrated at the office with my reusable water bottle. I also carry a travel mug perfect for grabbing coffee to go.

19:30 Eat dinner

Bedtime

Sustainable eating checklist

Here’s a summary of the sustainable food actions introduced in this booklet. Make a checkmark next to the ones that apply to your eating habits, then count the number of marks to see how sustainably you eat!

0 ~ 9 Sustainable eating beginner
Why not go back and pick some things you’d like to try?

10 ~ 18 Sustainable eating specialist
Good job! Now challenge yourself with something new!

19 ~ 26 You’re a sustainable eating master!
Introduce the concept to someone you know!

Activity Action
Make a shopping list P.6
Choose fish recommended by a seafood guide P.6
Buy products with low food miles P.6
Buy items in bulk P.6
Buy clearance foods P.7
Carry a reusable cloth bag P.7
Buy products in paper, glass or metal instead of plastic P.7
Buy products that have ecolabels P.10
Buy foods that support biodiversity (like wild venison) P.13
Buy plant-based meat P.14
Buy products made with edible insects P.16
Buy “ugly” produce at farmer’s markets P.17
Sign up for an app or website that helps reduce food waste

Use foods that are in season P.8
Cook in a way that minimizes waste P.8
Store extras for later P.8
Compost food scraps P.8
Cover containers with reusable lids or wrap P.8
Leave nothing behind P.9
Choose sustainable food and drink when eating out P.9
Bring leftovers home P.9
Carry a reusable bottle and straw P.9
Participate in Meat Free Monday P.14

Start a vegetable garden at home P.12
Join an Incredible Edible project P.12
Try out Synecoculture P.12
How do you feel about sustainable food after reading this booklet?

The more you learn about environmental issues, the more you may start to think, "If we don't take action right now, the future looks bleak." Yet there's nothing wrong with starting small, so why not try incorporating a few of these tips and ideas into the way you eat?

Even small individual actions can combine into a greater force that changes the world. We hope this booklet has given you the inspiration to eat more sustainably, starting with whatever you're able to or would like to do.

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