

# Our Hungry Planet

## Supplementary Materials



### Changing Your Diet

Did you know that food production is the single largest use of land on earth? Croplands and pastures occupy 40 percent of the earth's ice-free surface.<sup>1</sup> But not all kinds of food take the same amount of land to produce. The amount of land required to produce something is called a 'land footprint.' When you take into account the land used to graze animals and the land used to grow crops to feed the animals, meat and dairy have a larger land footprint than vegetables, fruits, and grains.

As people earn more money, they eat more meat and dairy products. Increasing global wealth could lead to a doubling in meat and dairy demand in the coming decades. If every person in the world ate the meat-heavy diet of an average American, by 2050 we would need twice the farm land that we currently use.<sup>2</sup> Forests and other habitats would have to be cleared to make more room for agriculture.

Eating less animal products can reduce our diet's land footprint and reduce global deforestation. Deforestation is not only a threat to biodiversity, it is also a major source of greenhouse gas emissions. Trees capture and store carbon through photosynthesis, and when they are burned or cut down, this carbon is released back into the atmosphere. A recent study found that cutting global meat and dairy consumption in half would free up enough additional land to feed 2 billion people.<sup>3</sup> Also changing the kind of meat we eat can change the land requirements of our diets. On average beef takes 28 times more land than other forms of animal protein.<sup>4</sup> Therefore, switching from beef to chicken or pork could significantly reduce the land requirements of our diets.

But changing what we eat may not be easy for everyone, given that culture, tradition, and personal habits all play a role in dietary preferences. And in some developing countries with dry climates, grazing livestock is one of the few reliable sources of food. However, in the U.S. and in western Europe, most people eat more meat than is healthy, contributing to obesity and other diseases. Therefore eating less meat could benefit the environment and our health.<sup>5</sup>

To learn about other solutions to global food issues, read more at [Our Hungry Planet](#).

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<sup>1</sup> [Foley et al. \(2011\)](#)

<sup>2</sup> [Kastner et al. \(2012\)](#)

<sup>3</sup> [Cassidy et al. \(2013\)](#)

<sup>4</sup> [Eshel et al. \(2014\)](#)

<sup>5</sup> [Tilman, G.D. & Clark, M. \(2014\)](#)





## Weighing the Benefits and Drawbacks of Changing Your Diet

For a complex problem, we need to evaluate how a solution fares across multiple dimensions:

**Benefits**

**Drawbacks**

**Environmental  
Factors**

**Social & Cultural  
Factors**

**Economic  
Factors**



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### Weighing the Benefits and Drawbacks of Changing Your Diet

For a complex problem, we need to evaluate how a solution fares across multiple dimensions:	Benefits	Drawbacks
<b>Environmental Factors</b>	<ul style="list-style-type: none"><li>• Eating less meat—especially red meat—reduces the land, water, and energy requirements of our diets.</li><li>• Reducing the land footprint of our diets would reduce deforestation.</li></ul>	<ul style="list-style-type: none"><li>• Without some livestock for manure, some farms would need to use synthetic fertilizers to grow crops.</li><li>• Not all climates can easily support vegetables, fruits, and grains (e.g., arid climates).</li></ul>
<b>Social &amp; Cultural Factors</b>	<ul style="list-style-type: none"><li>• Eating less animal products would be good for our health.</li></ul>	<ul style="list-style-type: none"><li>• Significant changes in diet could disrupt some long-standing cultures and traditions.</li><li>• Personal habits, tastes, and nutritional needs might not be conducive to diet changes</li></ul>
<b>Economic Factors</b>	<ul style="list-style-type: none"><li>• A 2015 study found that eating less meat can save families money.<sup>1</sup></li></ul>	<ul style="list-style-type: none"><li>• Meat and dairy production is a large industry. Some large companies may have to shift focus away from livestock sector towards other kinds of food.</li></ul>

#### Additional resources

BBC News: [Beef environment cost 10 times that of other livestock](#)

NPR: [A Nation Of Meat Eaters: See How It All Adds Up](#)

Civil Eats: [Mostly Plants: New Science Says a Healthier Diet is Best for the Climate](#)

University of Minnesota's Institute on the Environment: [Change our diets, change our density?](#)

Scientific American: [How Does Meat in the Diet Take an Environmental Toll?](#)

<sup>1</sup> Flynn, M. M. & Schiff, A. R. (2015)

