



**FIGHT CLIMATE CHANGE
WITH DIET CHANGE**



CLIMATE CHANGE & YOU

What's Really Worth Our Time? Can One Person Even Make a Difference?

As the clock keeps ticking on climate change, with no action from the federal government in sight, these questions are more important than ever.

Luckily, there's one area where our individual choices make a concrete difference—food. Keep reading to see why making a small change in our diet is one of the most powerful ways we can help everything from climate change, to species extinction, to air and water pollution.

There's one sector of the food system that has an outsized environmental impact—animal agriculture. Most of the problem stems from the sheer number of animals we raise and kill for meat, eggs, and milk every year in the United States. Do you know how many that is? Brace yourself.

9 BILLION

There are over 9 billion land animals bred and slaughtered in the U.S. annually for food. That means there are more farmed animals raised every year in the U.S. than there are people on the entire PLANET.

Raising all these animals produces over 200 pounds of meat per person in the U.S. every year, but it also causes a lot of problems. Most of the problems come from the fact that **all of those animals eat, drink, burp, and poop.**

Growing Food For Animals, Not People

When we think of farmers growing crops, we imagine food for people. However, 75% of all agricultural land around the world is used for livestock production.

Imagine someone offered you an investment opportunity—you invest \$100, and you get only \$40 back. That's a bad deal, right? But that's exactly what we're doing with our food system. For every 100 grams of protein we put into feeding animals raised for food, we get back only 40 grams of protein from chicken, 10 grams of protein from pork, and just 5 grams of protein from beef. This is a colossal waste of resources.

In fact, if we cut global meat consumption in half and used all of that farmland to grow fruits and veggies for people to eat directly—instead of growing corn and soy to feed animals on factory farms—we could feed every single person on earth today, plus an extra 2 billion people! We just need to eat more efficiently by eating lower on the food chain.



Animal agriculture is one of the leading causes of deforestation worldwide, and cattle ranching can be linked to **65% of deforestation in the Brazilian Amazon.**

Deforestation

Producing animal products takes up a lot of land. In fact, over a quarter of all arable land around the world is being used to raise livestock. This is one of the leading causes of deforestation. It's particularly bad in the Amazon rainforest, where 65% of Amazon deforestation is to make grazing land for beef cattle, or land to grow corn and soy for animals on factory farms. Since meat production is a leading cause of deforestation and habitat destruction, it's also a leading cause of wildlife extinction.

Think Grass-Fed Is Better? Think Again.

Habitat destruction for ranching is a problem in the U.S. as well. According to the Center for Biological Diversity, there are currently 175 threatened or endangered species living on U.S. public lands that are further threatened by the presence of livestock. To make matters worse, USDA Wildlife Services killed 2.7 million animals in 2016, mostly for the benefit of ranchers. This includes predators like bears and endangered grey wolves, as well as ground squirrels and birds.

GMOs and Pesticides

Regardless of one's stance on the science of GMO technology in general, the present reality of GMOs in the U.S. is that they're mostly being used to feed animals on factory farms. Farmed animals are fed corn and soy that's been genetically modified to withstand the use of pesticides and herbicides, such as Monsanto's "Roundup." **Meat production accounts for over 1/3 of all pesticide use.** These pesticides are toxic to workers, wildlife, and pollinators. Neonicotinoid pesticide has been linked to colony collapse disorder in bees. The main use of neonic? Soy and corn crops fed to animals. **Over 10,000 workers are hospitalized for acute pesticide poisoning every year.**



DROUGHT GOT YOU DOWN?

YOU CAN SAVE THE SAME AMOUNT OF WATER BY SKIPPING 1 GALLON OF MILK OR 27 SHOWERS.



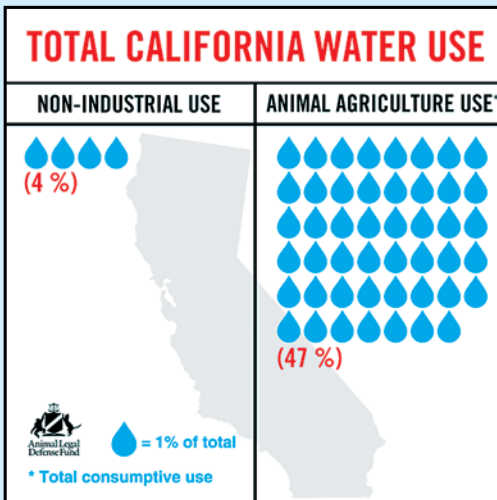
Everyone would prefer that you shower.

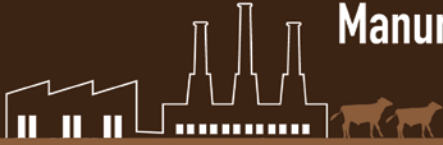
Water, Water, Water

When we think about ways to save water, we usually think of taking shorter showers or not watering our lawns. But the single best way to save water is actually through our food choices, not through our direct water use.

In California—where much of the country’s food comes from—consumers use only 4% of the water, while the meat and dairy industry uses over 45%. Why is this? The animals themselves, the feed crops fed to the animals, and slaughter and processing all require tremendous amounts of water.

As a result, ordering a veggie burger instead of a hamburger just one time saves as much water as not showering for a whole month.





Manure runoff from factory farms is a leading cause of

water pollution in the US,



having polluted 35,000 miles of river in 22 states.

Tons of Poop

To make matters worse, factory farms pollute the remaining water. Farm animals produce 100 times as much waste as all of the humans in the U.S. Imagine if every person urinated and defecated into giant, open-air pits, and that's what you have on factory farms. The stench from these "manure lagoons" prevents people living nearby from opening their windows or going outside.

To empty the pits, corporations spray the liquefied waste onto surrounding land, but sometimes the spray wafts downwind and onto neighbors. In the YouTube video "Spy Drones Expose Smithfield Foods Factory Farms," a woman explains that pig poop rains down on her mother's house from sprayers just eight feet away. They seal the windows and doors, but still suffer from nausea and headaches from being exposed to the feces. Rural, low-income communities are paying the true price for urban meat consumption.

All of this waste also runs off into local streams and rivers. Runoff from factory farms is one of the leading causes of water pollution in the U.S. It has polluted over 35,000 miles of river in 22 states. As a result of manure runoff, many rural communities don't have safe water, and swimming in local ponds results in rashes and infections.

All of the manure runoff and ensuing algae blooms also end up in the ocean, contributing to the over 8,000 square mile dead zone in the Gulf of Mexico where no life can flourish.



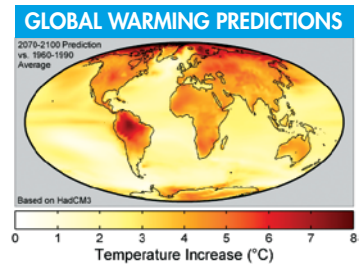
Algal bloom near California dairy farm

CLIMATE CHANGE

Meat production is also a leading cause of climate change. A report from the United Nations found that **meat production makes more greenhouse gases than all the planes, trains, and cars in the world combined.**

Why is meat such a powerful driver of climate change? Ruminant animals, like cows and sheep, burp methane—which is 28 times more potent than CO₂. The feces from the billions of animals releases nitrous oxide, a greenhouse gas 256 times more potent than CO₂. And all of the deforestation for grazing land decreases the amount of trees removing CO₂ from the atmosphere.

In order to limit global warming to 2°C, the level scientists have agreed is necessary to avoid the potential collapse of human society, we must address the impacts of our diet. A recent peer-reviewed study published in *Nature* found that the agricultural sector alone will take up nearly all of the world's carbon budget by 2050.



If meat consumption continues on its current trajectory, in order to maintain the 2°C target, we would need to shrink the carbon footprint of every other sector—transportation, industry, energy—down to ZERO. Since the chance of getting the carbon footprint of all of those industries down to zero is, well, zero, we need to address the carbon footprint of agriculture if we're going to have any chance of maintaining the 2°C limit. Just like our water footprint, one of the single most effective ways to decrease our carbon footprint is through our food choices.

A study published in the *Journal of Environmental Science and Technology* found that if the average person were to replace just one-quarter of their red meat consumption with vegan protein, it would reduce greenhouse gas emissions as much as buying local food 100% of the time.

The Environmental Working Group found that if everyone in the U.S. ate no meat or cheese just one day per week, it would be like not driving 91 billion miles, or taking 7.6 million cars off the road. What seems more realistic—convincing 7 million people to sell their cars and never drive again, or getting people to eat veg one day per week?

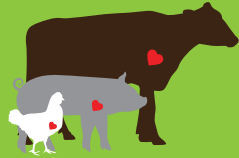
Per year, switching to a vegan diet:



**SAVES
219,000
GALLONS
OF WATER**



**PREVENTS
THE RELEASE
OF 1,533 LBS
OF CO2**



**SPARES THE
SUFFERING
OF 35
ANIMALS**

Q: So What Can I Do? A: Eat Less Meat!

The United Nations Environment Programme urges first-world citizens to cut their meat consumption in half, becoming what they call “demitarians.”

The Stockholm International Water Institute goes even further, urging people to eat just 1/6 the amount of meat currently consumed. They warn if we don’t dramatically reduce our meat consumption, we will be faced with food and water shortages worldwide that could lead to civil war.

Luckily, it’s never been easier or tastier to eat more veg protein. One great way to reduce your carbon and water footprint is to go entirely veg, but it’s not all or nothing. You don’t have to be 100% vegetarian to opt for a veggie burger or a veggie burrito a few times a week. You don’t have to be purely vegan in order



to put cashew or flax milk on your cereal instead of cow’s milk. Remember that every time you choose plant-based foods, you’re taking action against one of the most destructive industries on the planet.

MAKE A DIFFERENCE

What About Humane, Sustainable, Pastured, or Local?

Factory farming exists to make enough meat for Americans to eat meat every day, often with every meal. There is simply no sustainable way to raise 9 billion animals for food every year. A recent study by the University of Oxford Food Climate Research Network examined different systems of rotational grazing. The study found that even in the best case scenario, the carbon sequestered by the cows did not offset for their methane emissions. The only action that can truly put an end to factory farming and help stop climate change is eating less meat and more plant-based protein.

But Does It Really Make a Difference?

When more and more people opt for veg protein—even if it's only a few meals per week—demand for meat and dairy goes down and demand for more sustainable plant-based products goes up. This is already happening! People are changing their diets and starting to eat more vegetarian foods. Plant-based protein is one of the fastest growing sectors of the food system—more than 100 million Americans report buying vegetarian meats. As a result, meat and dairy companies have started investing in plant-based companies such as Silk, Gardein, and Beyond Meat.

At a time when we can't affect national energy policy, we can directly affect the food industry—it's one of the largest contributors to climate change, deforestation, water usage, and air and water pollution. And by eating less meat, even a few meals per week, you're making the food system more sustainable and decreasing the number of animals raised on factory farms.



Visit www.veganoutreach.org/weekly-tips to sign up for the 10 Weeks to Vegan email series with recipes and helpful tips.

EATING ANIMAL-FREE

WHAT'S ON THE MENU?

Many people believe that eliminating animal products will greatly narrow their choices. But according to most vegans, quite the opposite happens. If you visit your local supermarket's natural foods and international foods sections, or just follow some of the suggestions in this booklet, you'll soon become familiar with a wide variety of options. You'll find that you can follow almost any recipe—old or new—by substituting ingredients.



Vegan meals are usually offered at international restaurants, including Chinese, Indian, Ethiopian, Thai, as well as at several nationwide chains, such as Olive Garden, Subway, Johnny Rockets, Papa John's, Chevys, Taco Bell, and Chipotle. Plus, there are a lot of animal-free convenience foods—frozen dinners, canned and dehydrated soups, stews and chilies, and an assortment of vegan meats.

SIMPLE MEAL IDEAS

BREAKFAST

Oatmeal or cold cereal with fruit and non-dairy milk • toast, bagel, or English muffin with fruit spread and peanut butter • fruit smoothie made with non-dairy milk

LUNCH

Vegan lunch meat sandwich with chips • bean and rice burrito • falafel pita sandwich with hummus

DINNER

Tacos • pasta with marinara • stir-fry with tofu • vegan meat with mashed potatoes, gravy, and veggies • pizza with vegan pepperoni

SNACK & DESSERT

Trail mix • popcorn • chips and salsa • non-dairy ice cream • vegan chocolate, brownies, cake, cookies, or pie

COOKING ANIMAL-FREE

DO I REALLY NEED A RECIPE?

It's fun to find a new recipe to add to your regular favorites. But if you don't have time for a recipe, try the "meat, potatoes, and vegetable approach" to a meal and then sauce it up! Simply pick one or more from each of the following categories:



PROTEIN

beans • seitan • tempeh • vegan meat



STARCH

potatoes • bread • tortillas • rice • pasta



VEGETABLE

countless options

Supermarkets carry a wide array of canned and bottled sauces, dressings, salsas, etc.—ranging from basic tomato or BBQ sauce to the adventurous, such as spicy Thai chili or peanut satay sauce. Use sauce to marinate and cook your protein, or to cover your starch and veggies. To make sauces more nutritious, add nuts and seeds.



FIRM TOFU AS A MEAT REPLACER

When using tofu, it should be pressed to remove the excess water. Wrap the block in a towel and squeeze, or use a tofu press. The more liquid that is removed, the firmer and more flavor absorbent the tofu becomes.



EASY MEAL IDEAS



EATING OUT

INTERNATIONAL RESTAURANTS

ITALIAN



THAI



MIDDLE EASTERN



INDIAN



MEXICAN



CHINESE



CHAIN RESTAURANTS

- **TACO BELL** – bean burritos, bean tacos, potatoes, guacamole
- **CHIPOTLE** – burrito, bowl, or tacos with sofritas and fajita veggies
- **JOHNNY ROCKETS** – Streamliner burger and fries
- **OLIVE GARDEN** – pasta with marinara, breadsticks, minestrone soup
- **NOODLES & COMPANY** – Japanese pan noodles, spaghetti with marinara

VEGAN PIZZA GALORE!



While cheeseless pizza with lots of fixings is always a tasty option, many chains now carry vegan cheese and meats!

Check out Mellow Mushroom, Pie Five, PizzaRev, MOD Pizza, Pieology, Pi Pizzeria, and many more!

MUST WE EAT ANIMALS?

TAKING A STAND

By eating vegan—not consuming meat, dairy, and eggs—you can oppose speciesism and the human rights violations of animal agriculture.

While it can sound intimidating at first, if you experiment with the multitude of satisfying, high-protein vegan foods and ease into it at your own pace, it will soon be second nature. Read on for more tips!



Although, historically, most societies have eaten animal products, we don't need to. The vegan movement started in the 1940s, and since then countless children have been raised vegan and have grown into healthy adults.

NUTRITION

A plant-based diet can lower cholesterol and blood pressure, greatly reduce your risk for type 2 diabetes, and provide more antioxidants, fiber, and vitamin C—all improvements over the standard American diet. There are a few nutrients you should pay attention to over the long term.



ENSURE OPTIMAL NUTRITION

- A daily multivitamin with vitamin B12 will cover most of your bases.
- For calcium, eat plenty of dark, leafy green vegetables—especially kale and collards—oranges, or calcium-fortified non-dairy milks or orange juice.
- For iron, eat greens, beans, or oatmeal with a source of vitamin C—which significantly increases iron absorption.

PLANTS & PROTEIN



Lentil or Split Pea Soup • 7 G Protein



Bean Burrito • 10 G Protein



Peanut Butter & Banana • 15 G Protein



Hummus • 7 G Protein

All plant foods contain all the essential amino acids—the building blocks of protein. To meet protein requirements and to feel satisfied, it's important to make sure you're eating some high-protein plant foods each day.

The easiest choices are vegan meats, which are packed with protein. Legumes—peanuts, beans, lentils, and peas—and foods made from them are also high in protein.

ABOUT SOY

Soyfoods—like tofu, tempeh, and soymilk—are high in protein. The meat industry has sensed a threat from soy and promotes anti-soy propaganda, but don't be fooled—all legitimate scientific bodies consider soy safe.



That said, it's no problem to be vegan without eating soy—there are many high-protein alternatives!

GOOD FOR THE EARTH & YOU



"As a medical doctor, I consider adopting a plant-based diet to be one of the most important things someone can do to prevent the leading causes of disease."

Dr. Michael Greger, NutritionFacts.org

Not only are plant-based diets better for the environment, they're also a way to improve human health. The combination of being high in fiber and low in saturated fat and calories gives

plant-based eating a big advantage—research has shown that people on plant-based diets have lower rates of heart disease, diabetes, cancer, and high blood pressure.

"It is the position of the Academy of Nutrition and Dietetics that appropriately planned vegetarian, including vegan, diets are healthful, nutritionally adequate, and may provide health benefits in the prevention and treatment of certain diseases. These diets are appropriate for all stages of the life cycle, including pregnancy, lactation, infancy, childhood, adolescence, older adulthood, and for athletes."

– J Acad Nutr Diet. 2016 Dec;116(12):1970-1980

"I recommend a plant-based diet to my patients because I know it's going to lower their blood pressure, improve their insulin sensitivity, and decrease their cholesterol."

Dr. Kim A. Williams,
former President of the American College of Cardiology





Factory Farming Awareness Coalition (FFAC) is an educational nonprofit committed to empowering people to save animals, the environment, and improve our health through our daily food choices. FFAC provides engaging, holistic presentations about the impacts of animal agriculture at schools, community groups, businesses, and faith communities.

To learn more, volunteer, or schedule a presentation, email us at info@ffacoalition.org.



FFACoalition.org

10 weeks to **vegan**

VeganOutreach.org/Guide-FC

Citations for all facts in the leaflet are available at www.ffacoalition.org/enviro_leaflet_citations

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