

Out of Eden

A Christian Study and Action Guide to
Food and the Environment

Participant's Guide



THE ANÁSTASIS CENTER
FOR CHRISTIAN EDUCATION & MINISTRY

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*Out of Eden:
A Christian Study and Action Guide to Food and the Environment*

Revision 1.3

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A Publication of *The Anástasis Center for Christian Education and Ministry*

The Anástasis Center for Christian Education and Ministry is a Christian education organization dedicated to resourcing Christian leaders and churches with curriculum and training on restorative justice and healing atonement to holistically teach and proclaim the healing of humanity in Jesus Christ.

The Anástasis Center creates curriculum that brings the story of Jesus into dialogue with modern movies, songs, and art; early Christian understandings of human nature into dialogue with trauma studies and neuroscience; and Christian restorative justice into dialogue with ethnic studies, political science, and law.

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Out of Eden: A Christian Ethics Study and Action Guide to Food and the Environment Participant's Guide

‘Therefore, the Pope’s diagnosis is on the mark: ‘We are not faced with two separate crises, one environmental and the other social, but rather one complex crisis which is both social and environmental.’ Indeed, as he continues to advance, we require ‘an integrated approach to combating poverty, restoring dignity to the underprivileged, and at the same time protecting nature.’ It is also no surprise, then, that the Pope is concerned about and committed to issues like employment and housing.’¹

Why:

1. To educate the Christian community about the problems we face connected to agriculture, nutrition, ecology, and health care systems
2. To act on further steps individually and corporately to those issues, with the hope of impacting individuals and social systems
3. To reflect on these challenges theologically and deepen our understanding of God’s heart
4. To invite our non-Christian friends to join us in the midst of this reflection

When:

- Any five week period, with 75 – 90 minute sessions.

How & What:

- Combine reflections on (1) Scripture and (2) social issues related to food and the environment.
- Leader: print out the beginning handout section of each session, for each person, and review the leader’s notes

¹ Ecumenical Patriarch Bartholomew, ‘On Pope Francis’ Climate Encyclical,’ *Time*, June 18, 2015

WEEK TOPIC

1 *Sugar: Did God Make Poison?*

Goal: Understand the health care crisis caused by sugar and various food companies using sugar.

Scripture: Do we believe in transparency and full responsibility? (Exodus 21:18 – 19; Deuteronomy 22:1 – 8)

Action: Change our diet. Spread the word. Consider regulation and taxation of sugar products.

2 *Corn and Corn Subsidies: When Your Addiction Is Someone Else's Allergy*

Goal: Understand corn allergies, corn products, and corn subsidies in the U.S. Farm Bill.

Scripture: Did God intend a basic level of health? (Leviticus 25 selections; Exodus 21:18 – 19)

Action: Change our diet. Spread the word. Consider banning high fructose corn syrup. Understand how to advocate for changing the U.S. Farm Bill.

3 *Plastic: When Your Choices Mutate Someone Else's Baby*

Goal: Understand the health impact of plastic and xenoestrogens, especially on reproductive systems.

Scripture: Was there an original mutation? Does it still impact us? (Genesis 2:7 – 3:24 selections)

Action: Consider six personal and policy steps ranging from stopping single-use plastic to better solid waste recycling. Explore the impact of certain pesticides and consider policy actions.

4 *Meat: What's the True Cost? Who Pays It?*

Goal: Understand the environmental impact of raising various forms of consumed meat, including land and water use, carbon footprint, and antibiotic resistance in animals

Scripture: Would God let children subsidize our consumption? (Leviticus 25 selections; Deuteronomy 20:20; 22:6 – 7)

Action: Eat sustainably. Spread the word. Advocate for environmentally sustainable policies.

5 *Food Waste: Are Greed and Gluttony Still Sins?*

Goal: Understand the magnitude of food waste in the U.S. and its environmental impact

Scripture: Why were greed and gluttony sinful? (Deuteronomy 24:19 – 22; Proverbs selections; Ezekiel 16:49; Philippians 3:19)

Action: Advocate for changing practices in farm to store, store to table, table to waste.

Out of Eden: A Christian Ethics Study Guide to Food and the Environment

Session 1

Sugar: Did God Make Poison?

Part 1: An Introduction to Sugar

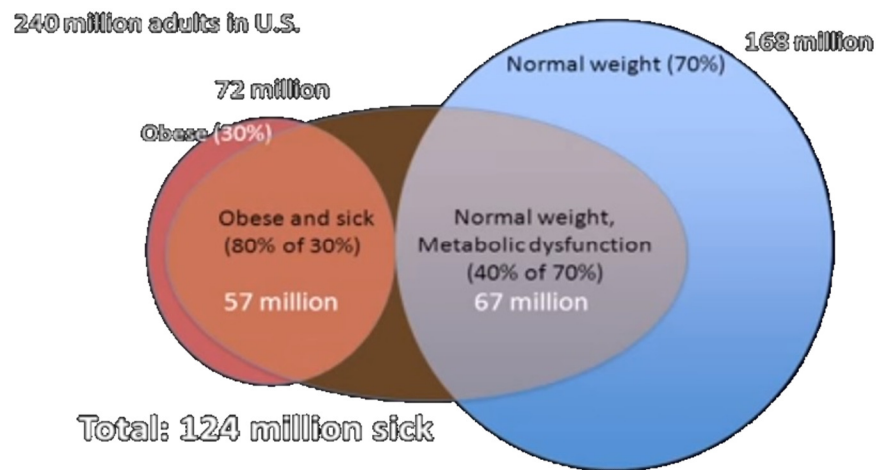
Watch a 20 minute video by Dr. Robert Lustig from 2013, *Sugar – The Elephant in the Kitchen* (TEDxBermuda Talk). These notes summarize the video, but I highly recommend watching the video itself.

The Necessary Conditions for Personal Responsibility and Freedom

- Knowledge: You have the information
- Access: You have the ability to exercise a choice
- Affordability: You can afford your choice, and society can too
- No Other-Harm: Your actions don't hurt others
- Knowledge is withheld
- Some people don't have choices (food deserts, cost of healthy food)
- Not Affordable: The true cost is hidden and steep
- Other-Harm: Companies are not incentivized to care

Some Health Care Facts

- Medicare will be broke by the year 2026 because of chronic metabolic disease
 - \$245 billion in 2012 in America went to diabetes
 - \$200 billion for dementia, another chronic disease
- Obamacare promises preventative services, but there are none for chronic metabolic diseases.
- Rising health care costs do not come from the obesity epidemic.
 - 30% of American adults are obese (72 million),
 - 80% of obese people (57 million) have type 2 diabetes, hypertension, etc.
 - But 20% of obese are metabolically healthy – how can that be true?
 - 70% of American adults are 'normal weight' (168 million)
 - 40% of this population (67.2 million) have the exact same metabolic diseases
 - So half of the adult population is sick. And 1/3 of all children born after the year 2000 are estimated to become diabetic.



Processed Food – Health Risks



Food processing removes some of the nutrients, vitamins and fiber present in the food

Cheap artificial sugars, salt and preservatives in processed foods have less fibre quantity & don't add any nutrition benefits, it **slows down digestion**

The salts, phosphates and other artificial ingredients in the processed food leads to kidney and other health problems

Frequent consumption of processed foods can lead to **hormonal problems** like menstrual irregularities, premenstrual syndrome, **infertility**, thyroid dysfunction etc

Processed foods are **HIGHLY ADDICTIVE** and make you crave them frequently.

Some processed dairy products, dried fruits etc contains Sulphite which causes a range of health diseases like headache, skin rashes, irritable bowel syndrome etc.

Processed food kills natural taste and colour of foods. In order to restore the natural flavour, manufactures add cheap artificial sugar, salts, fats, colours and preservatives that create **GASTROINTESTINAL** problems, **HORMONAL** Problems, **NERVOUS SYSTEM** problems etc

Frequent consumption of processed food can also lead to **nervous system problems** like depression, irritability and inability to concentrate.

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Processed Foods

Too little:

- Fiber
- Omega-3 Fatty Acids
- Micronutrients

Too much:

- Trans-fats
- Branched Chain Amino Acids (in corn-fed animal products)
- Omega-6 Fatty Acids (plant oils, polysaturates)
- Alcohol
- Sugar

Key Lesson: A calorie is *not* just a calorie, although processed food companies commonly argue that all calories are the same. Different calories do different things in your body.²

² For more information, see *Sugar: The Bitter Truth (Short Version)* by Underground Wellness, a 10 minute video on Youtube. This vlogger summarizes Dr. Lustig's 90 minute video *Sugar: The Bitter Truth*(2009), including the chemical breakdown in the body of different types of calories, proving that "a calorie is NOT a calorie." See also *Is Sugar Toxic?* by 60 Minutes (2012), a 15 minute video on Youtube. This is a great introduction to the topic, with interviews of Dr. Lustig and other researchers.

How Does Sugar Affect Us Biochemically?


7 Side Effects of Soda

Phosphoric Acid - Weakens bones and rots teeth

Excessive artificial sweeteners makes you crave more

Carmel Color - Made from the chemical carmel, is purely cosmetic, it doesn't add flavor yet is tainted with carcinogens.

Formaldehyde - Carcinogen, it is not added in soda but when you digest aspartame, it will break down into 2 amino acids and methanol = Formic acid + formaldehyde (diet sodas)



High Fructose Corn Syrup is a Concentrated form of sugar, fructose derived from corn. It increases body fat, cholesterol and triglycerides and it also makes you hungry.

Potassium Benzoate = preservative that can be broken down to benzene in your body. Keep your soda in the sun and benzene = Carcinogen

Food Dyes = impaired brain function, hyperactive behavior, difficulty focussing, lack of impulse control.

Dave Sommers

- Sugar causes liver fat accumulation
- Sugar is addictive
 - 6 – 9 teaspoons of sugar per day (American Heart Association); we are up to 22
- 1 soda per day increases your risk of diabetes 11 times
- Americans consume 2.5 sodas per day

Sources of Sugar in Our Diet

- 1/6 in desserts
- 1/3 in beverages
- 1/2 hidden in foods that didn't use to have sugar
 - Salad dressings
 - Yogurt (other than plain)
 - Tomato sauce, ketchup, condiments
 - Crackers, other carbohydrate products

Of the 600,000 items in the American food system, 80% is spiked with added sugar. Worse yet, there are 56 names for sugar.

Agave nectar	Barbados sugar	Barley malt	Beet sugar
Blackstrap molasses	Brown sugar	Buttered syrup	Cane juice crystals
Cane sugar	Caramel	Carob syrup	Castor sugar
Confectioner's sugar	Corn syrup	Corn syrup solids	Crystalline fructose
Date sugar	Demerara sugar	Dextran	Dextrose
Diastatic malt	Diatase	Ethyl maltol	Evaporated cane juice
Florida crystals	Fructose	Fruit juice	Fruit juice concentrate
Galactose	Glucose	Glucose solids	Golden sugar
Golden syrup	Grape sugar	High fructose corn syrup	Honey
Icing sugar	Invert sugar	Lactose	Malt syrup
Maltodextrin	Maltose	Maple syrup	Molasses
Muscovado	Organic raw sugar	Panocha	Raw sugar
Refiner's syrup	Rice syrup	Sorghum syrup	Sucrose
Sugar	Treacle	Turbinado sugar	Yellow sugar

Should We Regulate and Tax Sugar?



Addictive, not toxic
No regulation



Addictive, toxic
Regulation, taxation



Addictive, toxic
We currently do nothing

‘Sugar starts to fry your liver at about 35 pounds per year, just like alcohol would at the same dosage. This is because fructose — the sweet molecule of sugar — is metabolized in the liver just like alcohol. It's not because of the calories. Alcohol is not dangerous because it has calories; alcohol is dangerous because it's alcohol. It's the same with sugar. And we're at 100 pounds per year, triple our limit. That is why children now get the diseases of alcohol consumption — type 2 diabetes and fatty liver disease — without ever drinking alcohol.

‘Two regulatory issues are currently in play. As Klein notes, the U.S. Food and Drug Administration must now decide on the proposal for including ‘added sugar’ on the Nutrition Facts label, and the U.S. Department of Agriculture must act on its own Dietary Guidelines Advisory Committee's (DGAC) recommendation to limit added sugar consumption to 10% of total calories. The food industry is fighting both of these tooth and nail.’³

The following diseases were considered to be ‘personal responsibility’ diseases until the sheer magnitude made them public health crises and environmental problems for government: syphilis, cholera, lead poisoning, tuberculosis, food-borne illnesses, vitamin deficiencies, pollution, tobacco. Newer ones include: climate change, HIV, teen pregnancy, guns.

Countries that tax soda: Finland, France, Hungary, Mexico.⁴ ‘The World Health Organisation calls soda taxes the most effective strategy for improving diet (along with subsidising fruit and vegetables).’⁵

Discussion Questions

- Please summarize the points about sugar and diabetes and their cost to our health care system
- What do you think about his argument that this is less about personal responsibility and more about our biochemistry and systemic factors?

³ Robert H. Lustig, ‘Sugar in Food Is Poorly Labeled, and the Industry Likes It That Way,’ *Los Angeles Times*, March 20, 2015

⁴ Tina Rosenberg, ‘How One of the Most Obese Countries on Earth Took on the Soda Giants,’ *The Guardian*, November 3, 2015 notes that after the soda tax law went into effect on January 1, 2014, ‘The decline [in sales] started slowly but accelerated: by December 2014, soda sales were down 12% from December 2013. And the drop was greatest among the poorest Mexicans — by December they were buying 17% less sweetened soda than the year before. (Terrazas was right — the tax does affect the poor disproportionately. But so does diabetes.) In September, Mexico’s national statistics institute released data on beverage consumption showing that Rivera’s findings actually slightly understated the soda tax’s success.’

⁵ Ibid

Part 2: Do We Really Believe in Transparency and Full Responsibility?

<p>‘The modern world is built on two centuries of industrialisation. Much of that was built by equity finance. Which is built by limited liability.’⁶</p> <p>‘Support for limited liability came mainly from utilitarian economists such as Bentham, Senior, and J.S. Mill, and later from Cobden and Bright... Effectively, the legislation removed the power to sue individual investors, and also removed the power of individual creditors to sue at all... The decision to allow limit of liability to the extent of each shareholder’s own investment clearly marks a retreat from retributive or evangelical economics.’⁷</p> <p>‘The consequences of the Companies Act 1862 [in Great Britain] completed the divorce between the Christian conscience and the economic practice of everyday life. Legally speaking it paganized the financial and commercial community. Henceforward an astute man by adherence to legal rules which had nothing to do with morality could grow rich by virtue of shuffling off his most elementary obligations to his fellows.’⁸</p>	<p>^{20:15}You shall not steal. ¹⁶You shall not bear false witness [i.e. lie].’ (Exodus 20:15 – 16; cf. Deuteronomy 5:19 – 20)</p> <p>Not stealing someone’s health: ^{21:18} If men have a quarrel and one strikes the other with a stone or with his fist, and he does not die but remains in bed, ¹⁹ if he gets up and walks around outside on his staff, then he who struck him shall go unpunished; he shall only pay for his loss of time, and shall take care of him until he is completely healed. (Exodus 21:18 – 19)</p> <p>Not bearing false witness by actually being a good neighbor: ^{22:1} You shall not see your countryman’s ox or his sheep straying away, and pay no attention to them; you shall certainly bring them back to your countryman... ⁸ When you build a new house, you shall make a parapet for your roof, so that you will not bring bloodguilt on your house if anyone falls from it. (Deuteronomy 22:1 – 8)</p> <p>‘Limited liability is contrary to biblical teaching because, exceptionally in the law of contract, it allows that certain debts may be left unpaid. As a result shareholders, who retain rights of ownership, are excused responsibilities of ownership, while directors bear some of the responsibilities of ownership, and share some of the rewards, but carry few of the risks. This flaw at the heart of corporate structure leads to problems in corporate governance, absence of corporate social accountability, and an unhealthy trend towards corporate giantism. Solutions lie, it is argued, in policies that restore shareholder liability, and incentives for business not to incorporate.’⁹</p> <p>‘[Adam] Smith, indeed, predicted what might happen in the <i>Wealth of Nations</i>, when he supported the idea of private companies (or copartneries) against joint stock companies, the equivalent of today’s limited liability firm. In the former, Smith said, each partner was “bound for the debts contracted by the company to the whole extent of his fortune”, a potential liability that tended to concentrate the mind. In joint stock companies, Smith said, shareholders tended to know little about the running of the company, raked off a half-yearly dividend and, if things went wrong, stood only to lose the value of their shares.’¹⁰</p>
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⁶The Economist, ‘The Key to Industrial Capitalism,’ *The Economist*, December 23, 1999

⁷ Boyd Hilton, *The Age of Atonement* (Oxford: Oxford University Press, 1988), p.257 – 259

⁸ Sir Arthur Bryant, *The Search for Justice: A History of Britain and the British People*, volume 3 (New York: Collins, 1990), p.177

⁹ Paul Mills and Michael Schluter, *After Capitalism: Rethinking Economic Relationships* (Cambridge: Jubilee Centre, 2012), ch.10

¹⁰ Larry Elliot, ‘Plc: The Prerogative of the Unaccountable Few: Adam Smith Argued for Free Trade and Self-Interest, But Not This Kind of Capitalism,’ *The Guardian*, July 9, 2007; cf. Rachel Maizes, ‘Limited Liability Companies - A Critique,’ *St. John’s Law Review*, Summer 1996; Philip Mattera, ‘The Buck Doesn’t Stop Here: The Spread of Limited Liability Companies,’ *Corporate Research Project*, September 2002; Marie-Laure Djelic, ‘When Limited Liability Was (Still) An Issue - Conflicting Mobilizations in Nineteenth Century England (paper), May 2010; Stephanie Blankenburg, Dan Plesch, and Frank Wilkinson, ‘Limited Liability and the Modern Corporation in Theory and in Practice,’ *Cambridge Journal of Economics*, September 2010 (see whole issue, ‘Corporate Accountability and Legal Liability: On the Future of Corporate Capitalism’)

Historical and Cultural Background

- Ancient biblical Israel was a nomadic people who became agrarian. The first five books of the Bible – the ‘books of Moses’ or Torah (Genesis, Exodus, Leviticus, Numbers, and Deuteronomy) – are foundational documents, like a charter or constitution. The ‘Ten Commandments’ are the foundation for the moral and legal principles. The other sections of Jewish law are stated as case law examples of the Ten Commandments, meant to be mined for more meaning.
- Deuteronomy is an extended reflection and elaboration of the Ten Commandments. It is easier to perceive this way, where chapters 1 – 11 serve as a long introductory frame. Note that the two passages from Deuteronomy come from the theft and false witness sections:

Parallels Between the Decalogue and Structure of the Covenant Stipulations (Dt.12:1 – 26:19)¹¹

Chapter	Commandment	Parallel Theme
12:1 – 14:21	1, 2, 3 (monotheism, idols & swearing)	Purity of worship, exclusion of foreign gods, name of God (12:3, 5, 11, 21)
14:22 – 16:17	4 (sabbath)	Holy rhythms of daily life and concern for the poor
16:18 – 18:22	5 (honoring parents)	Respect for legitimate human authority: judge, king, priest, prophet
19:1 – 21:9	6 (murder)	Situations dealing with loss of human life
21:10 – 14	7 (adultery)	Marriage to a woman from a defeated people, after wartime
21:15 – 22:4	8 (theft)	Various commands instilling a community ethos of care and compassion towards the weak and the poor
22:5 – 23:14	9 (false witness)	Various commands about representing one’s self or others accurately
23:15 – 26:19	10 (covetousness)	Various commands about greed, protection of the vulnerable

Discussion Questions

- What surprises you about this comparison?
- What did the eighth and ninth commandments mean in the economic aspect of relationships?
- Would full liability wreck the economy? Or build a trust-worthy economy?

Action Steps – Options

- Try to not eat processed food, only natural food. Nothing that looks like a chemistry experiment on the label. Discuss with your group whether this is feasible, and how long of a time period you want to take on as a challenge.
- Tell your friends and family members how sugar is affecting them.
- Do a little history on a processed food company or a fast food company: Coke, MacDonalds, etc. Find out how much sugar is in their products, and how they’ve responded to criticism.
- Ask your doctors how much they were trained in nutrition.
- Read page 26 onward of the Credit Suisse report on sugar. Find out what your State is doing, if anything.
 - Note that the reports says that different States in the U.S. are trying different things. CA is considering a one cent tax on soft drinks.
 - France imposed a 5% tax on sugary drinks. It could have been increased by now.
 - Hungary and Ireland have imposed taxes on foods perceived to be unhealthy.
- Sign up for Dr. Lustig’s non-profit research and activism organization, the Institute for Responsible Nutrition: <http://www.responsiblefoods.org/>

¹¹ Modified by Mako A. Nagasawa from Robert I. Bradshaw, *The Book of Deuteronomy*; http://biblicalstudies.org.uk/article_deuteronomy.html; last accessed May 5, 2015

Out of Eden: A Christian Ethics Study Guide to Food and the Environment Session 2

Corn and Corn Subsidies: When Your Addiction is Someone Else's Allergy

Part 1: Corn Allergies and Corn Profitability

Corn Allergies in a Corn Based World¹²

'Recently, some family friends of ours have been dealing with some difficult food allergies that their children have. Because of this, my interest was really piqued when I came across a little snippet in "The Stockman Grassfarmer" about corn allergies.

'According to the article, there are **an estimated 10 million people** in the United States with a corn gluten allergy. That alone isn't very interesting until you realize that 75% of all processed foods have some form of corn in them, and 50% of the sweeteners are made of corn. When you put all of that together, you can see that it is difficult for those 10 million Americans to find food they can eat.

'This news also highlights another one of the benefits of grass-fed beef, although it is important for everyone involved to know that it is 100% grass-fed because sometimes even trace amounts of corn can cause a reaction. If you are interested in reading more about corn allergies, check out this site and its list of corn allergens. You will see that it is a very long list.

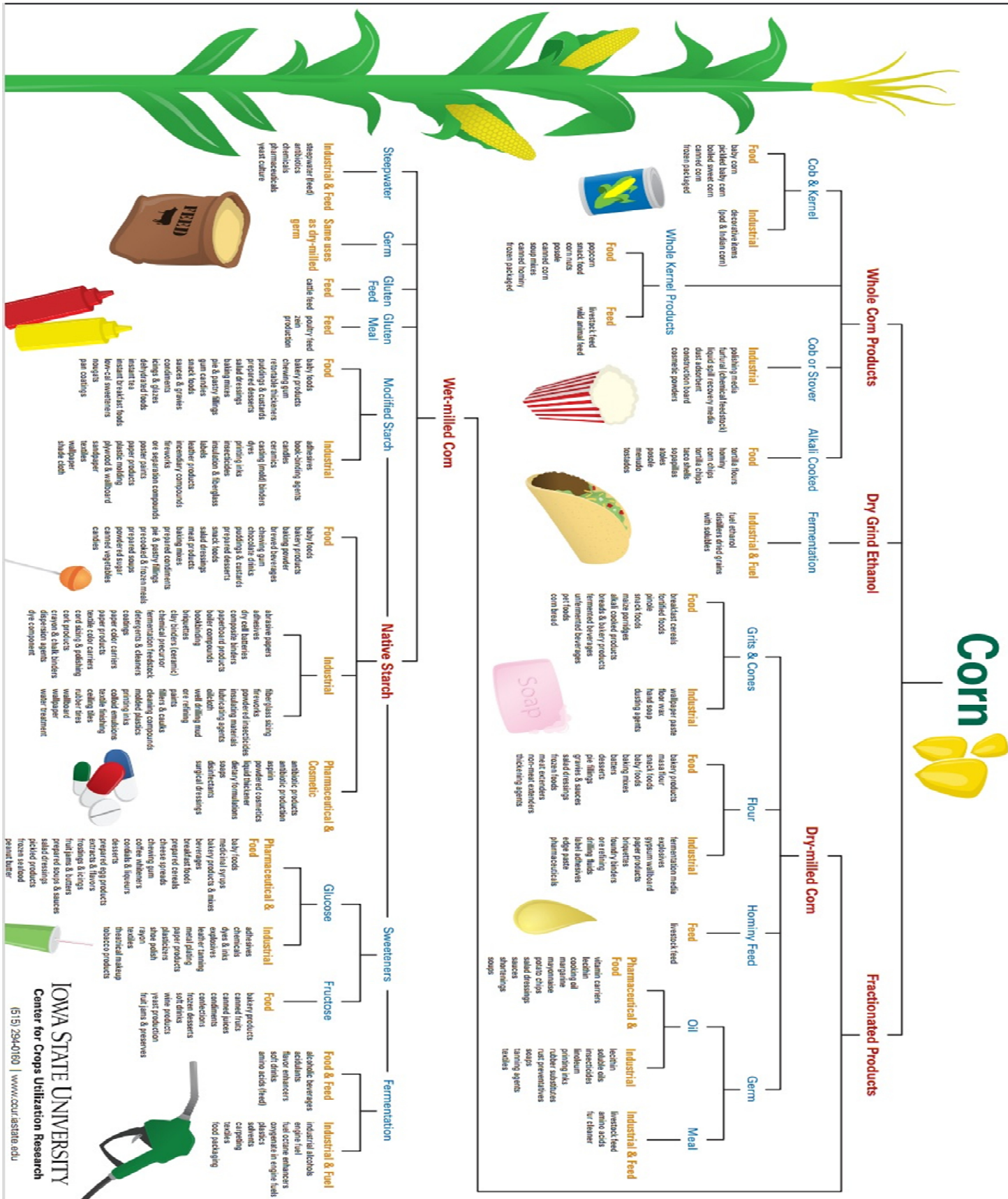
'Also, if you are someone who deals with a corn allergy, I would like to hear about how you deal with it.'

Comments

- 'I'm one of those people who can't have "modern" corn or its derivatives. Based on how my body reacts after I consume something with even a little bit of certain corn derivatives, I believe there is something about "modern" corn that my body rejects as being a foreign invader. This would also explain why I can eat baby corn and Indian wild corn (my boyfriend grows it in the backyard) without any issues. My digestive system has been so hurt by modern foods that I no longer can eat a lot of things. How do I manage? I don't eat out. I check all ingredients of everything I eat. I even email companies to make sure. I make my food from scratch. Since I now have a weak digestive system, I avoid things (in addition to corn) that are hard to digest or make my liver work harder, such as fructose, lactose, sorbitol, gluten, and raw vegetables. I have to be very careful with what I buy. Even a can of tuna fish might contain other ingredients (such as vegetable broth, which is probably GMO-soy).'
- 'When my 3 year old son began having mild anaphylactic responses and hives we had him tested for allergies. I never in my wildest nightmare expected the test to come back positive for corn allergy. After discovering my child could never eat out at a restaurant again I vowed to never touch corn to as an act of solidarity. It saved me. I was corn allergic too but my symptoms were bizarre. I had all over body and joint pain, Migraines, indigestion, and many, many other problems. I even had hives but I dismissed them as mild bumps on my chest and inside of my elbows as heat rash. Do you know you can send me and several of my kids into potentially life threatening situations just because of the hand sanitizer, starched clothing, perfume, or lotion you have on. Did you just clean your dishes and try to serve us. Yup corn there too and please do not put it on a paper plate, or give us a napkin. Even toilet paper! Need I say more? It has been 9 months and I have learned how to cook, make my own soap, and live a very green lifestyle. We have reduced the trash output, increased recyclables and compost everything. As a family of 8 we have almost no waste. But it is so expensive! I am grateful that my husband has a job but if there were ever a job issue I do not know how any family could survive for I do not believe WIC or government food stamps covers non corn items. We are trying to learn to grow our own foods to

¹² Ethan Book, 'Corn Allergies In A Corn Based World,' *Epicurious*, September 12, 2008; boldface mine; see also *Wikipedia*, 'Corn Allergy'

keep down the cost but that is difficult to do in the city. If you are newly diagnosed I highly recommend the *Corn Free Cook Book and Survival Guide*.'



Read: *A Brief History of Corn and Corn Subsidies in the U.S.*

‘The early 1800s brought boom times for U.S. farms: Pioneers moving west were snatching up new farmland and growing so much corn they hardly knew what to do with it. For one thing, they made whiskey — and lots of it — because it added value to cheap corn, and it was easy to transport and store. As a result, the average American man in the 1820s drank FIVE GALLONS of hard liquor a year (compared to less than a gallon today) with the attendant health and social problems you might expect.’¹³

In 1933, the federal government passed the first *U.S. Farm Bill*. It helped American family farmers during the Great Depression deal with crop and market uncertainty. Excess crop led to unsustainably low market prices. Thus, the New Deal allowed farmers to receive payments for not growing food on a portion of their land as determined by the U.S. Secretary of Agriculture. This bill is renewed every five years, roughly. It bundles together agricultural policy and supplemental nutrition assistance policy (SNAP) for poor families.

In 1996, ‘Congress... pushed through several new farm programs, including the now-controversial direct payments, which are pretty much what they sound like. Regardless of market conditions, the government writes grain farmers support checks; the amount of the subsidy is based on farmers’ historical yields and acreage (from the 1980s). The idea was that government would no longer link eligibility for subsidies to planting certain crops, but would still help support farmers suffering from low prices in the late 90s.’¹⁴

‘Since 1995 [to 2014], 75 percent of federal subsidies have gone to 10 percent of farms, the same consolidated group of commodity crop growers who will continue to eat up a disproportionate share of the subsidy pie under the new system, too.’¹⁵



¹³ Amelia Urry, ‘Our Crazy Farm Subsidies, Explained,’ *Grist*, April 20, 2015, emphasis hers

¹⁴ Kathleen Masterson, ‘The Farm Bill: From Charitable Start To Prime Budget Target,’ *National Public Radio*, September 26, 2011

¹⁵ Amelia Urry, ‘Our Crazy Farm Subsidies, Explained,’ *Grist*, April 20, 2015

(Optional, FYI) Discuss: A Comparison of Perspectives on Some Benefits of Corn

Nat'l Corn Growers' Association	Other Scientists, Critics
<p>'Ethanol is a powerful force in realizing a reduction in our dependence on crude oil. Thanks to ethanol, plant-based biofuel is the fastest-growing renewable energy technology. The U.S. Department of Energy estimates for everyone billion gallons of ethanol produced, 10,000 to 20,000 jobs are added to our domestic economy.'¹⁶</p> <p>'Ethanol reduces greenhouse gas emissions by nearly 50% in comparison to gasoline. Global ethanol production and use is estimated to reduce these emissions by 110 million metric tons, according to energy experts. This is the equivalent of taking more than 20 million vehicles off the road.'¹⁷</p>	<p>'Ethanol is indeed a great alternative to oil, but only when done right. The energy it currently takes to produce a gallon of corn ethanol is greater than the energy that the gallon contains. If the U.S. wants clean, efficient ethanol as an alternative to oil, here's an idea: remove the tariffs on Brazilian ethanol so we have a cheaper way of getting the product while we transition to better ways of producing it. In fact, let's use the Brazilian model of producing ethanol; the country runs more than half of its vehicles on pure, 100% ethanol fuel, and their way of producing it is over seven times more efficient than the American way. That's because they produce ethanol from sugar cane, not corn. The sugar cane in Brazil is processed several times: the prime stuff is used to make high quality alcohol for consumption; the OK stuff is used to make lots of sugar; and the "junk" is used to make ethanol. With enough investment and research, the U.S. could eventually maintain a similar system where at least part of the ethanol we use would come from an economically feasible system.'¹⁸</p> <p>'Pollution from corn farming is a leading cause of water quality problems in the Upper Mississippi River watershed, polluting drinking water in agricultural areas and degrading rivers and lakes, while also expanding the Gulf of Mexico's "dead zone" (a large area deprived of oxygen).'¹⁹</p>

<p>'America's corn farmers showed exactly how amazing the world of maize can be. Their ability to consistently deliver an abundant, sustainable crop offers an incredible array of opportunities to the world. From fueling cars to filling grocery carts, farmers improve the everyday life of their fellow Americans.'²⁰</p>	<p>'Has it occurred to you that the food freedoms we so long to protect may be something quite different? What happens if we are actually NOT free to choose at all, if in fact the freedom we believe we are protecting is simply the defense of a gripping addiction? Suddenly, the argument changes. Should we protect the right to choose something that is, in fact, not freely chosen? An increasingly significant line of research confirms the fact that sugar and the things that become sugar after digestion (i.e. grains and starchy carbs) are addictive. In a recent segment on <i>60 Minutes</i>, Dr. Sanjay Gupta subjected himself to an MRI while sipping Coca Cola. The MRI shows an immediate hit to the brain's pleasure centers, the very areas which are stimulated by drugs. Animal behaviorists confirm the fact that animals will choose to overconsume pleasurable substances both in the lab and in the wild... Our world has started looking a lot like a lab in which we are drenched in a bath of addictive foods and observed by those who create them. The foods are then tweaked to provide further 'irresistibility.' It is the 'right</p>
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¹⁶ National Corn Growers' Association, *World of Corn* (2013), p.15 and also *World of Corn* (2016), p.8

¹⁷ National Corn Growers' Association, *Ethanol Facts* (2016)

¹⁸ Pedro R. Silva, 'Corn Subsidies Make Me Sick (and Fat),' *Inquiries Journal: Social Studies, Arts, and Humanities*, 2010 Volume 2, Number 11; <http://www.inquiriesjournal.com/articles/314/corn-subsidies-make-me-sick-and-fat>

¹⁹ Union of Concerned Scientists, *The Energy-Water Collision: Corn Ethanol's Threat to Water Resources*, October 2011

²⁰ National Corn Growers' Association, *World of Corn* (2013)



to choose' these foods that we fight for. Is it really a choice? Is free will really involved?'²¹ [Are subsidies and the system we've built around corn also 'addictive?']

Part 2: Did the God of the Bible Intend a Basic Level of Health?

A Comparative Look at Medical Knowledge

'To prevent the hair from turning gray, anoint it with the blood of a black calf which has been boiled in oil, or with the fat of a rattlesnake.' (*Papyrus Ebers*, Egypt 1552 B.C.) 'Several hundred remedies for disease are advised in the *Papyrus Ebers*. The drugs include 'lizards' blood, swines' teeth, putrid meat, stinking fat, moisture from pigs' ears, milk goose grease, asses' hoofs, animal fats from various sources, excreta from animals, including human beings, donkeys, antelopes, dogs, cats, and even flies.'²²

'About the time this medical book was written, Moses was born in Egypt... There is little doubt that he was well acquainted with the medical knowledge of his time [including that within] the *Papyrus Ebers*... God proceeded to give Moses a number of commandments [e.g. quarantining people with leprosy for further care (Lev.13); washing hands after touching a dead body (Num.19:11 – 21); and separating all human waste from living quarters (Dt.23:13 – 15)]... Because these divinely given medical directions were altogether different from those in the *Papyrus Ebers*, God surely was not copying from the medical authorities of the day... [Moses] did not incorporate a single current medical misconception into the inspired instructions.'²³

Historical and Cultural Background

- Biblical Israel traces its origin as a formal nation to a moment when their God delivered them from Egypt. This is described in the book of Exodus.

Health from an Economic Perspective: Our Relation to Land

'After thirty years on the throne, the pharaoh [of Egypt] celebrated a jubilee intended magically to rejuvenate the divine yet vulnerable monarch...'²⁴

¹⁰ You shall thus consecrate the fiftieth year and proclaim a release through the land to all its inhabitants. *It shall be a jubilee for you, and each of you shall return to his own property, and each of you shall return to his family...* ¹³On this year of jubilee each of you shall return to his own property... ²³The land, moreover, shall not be sold permanently, for the land is Mine; for you are but aliens and sojourners with Me... [Regarding land sale:] ²⁵ If a fellow countryman of yours becomes so poor he has to sell part of his property, then his nearest kinsman is to come and buy back what

²¹ Barbara Berkeley, M.D., 'Mayor Bloomberg's War vs. The Answer To Eat Whatever,' *Refuse to Regain*, June 14, 2012; <http://www.refusetoregain.com/2012/06/mayor-bloombergs-war-vs-the-freedom-to-eat-whatever.html>

²² S.I. McMillen, M.D., *None of These Diseases* (Minneapolis, MN: Pyramid Publications, 1972), p.9

²³ McMillen, 1972, p.9 – 10

²⁴ In ancient Egypt, the pharaoh celebrated a 'jubilee' as well. This description of an ancient limestone with hieroglyphic carving comes from the NY Metropolitan Museum of Art, *Scenes from a King's Thirty Year Jubilee*, Dynasty 4, probably the reign of Snefru (ca. 2575 – 2551 B.C.)

<p>‘Why does the use of religion to support a social gospel... which require[s] authoritarians... go unchallenged? Forced redistribution of wealth has nothing to do with the teachings of the world’s great religions.’ (Ron Paul)²⁵</p>	<p>his relative has sold...²⁸But if he [or his kinsman] has not found sufficient means to get it back for himself, then what he has sold shall remain in the hands of its purchaser until the year of jubilee; but at the jubilee it shall revert, <i>that he may return to his property...</i> [Regarding indentured service:] ³⁹ If a countryman of yours becomes so poor with regard to you that he sells himself to you, you shall not subject him to a slave’s service... ⁵⁴ Even if he is not redeemed by these means [his relatives pay his debt], <i>he shall still go out in the year of jubilee, he and his sons with him.</i> ⁵⁵ For the sons of Israel are My servants; they are My servants whom I brought out from the land of Egypt. I am the LORD your God. (Leviticus 25 selections)</p>
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Historical and Cultural Background

- Israel celebrated a ‘jubilee’ which was based on the story of Adam and Eve given the original Garden of Eden by a good God. If humanity had not fallen into corruption, all descendants of Adam and Eve would have inherited their portions of the beautiful garden land. Note that there were other forms of wealth, like livestock, clothing, equipment, pottery, jewelry, and coins.

Discussion Questions

- What strikes you by comparing the Egyptian medical practices to Israel’s? Or Egypt’s pharaoh’s jubilee to Israel’s jubilee?
- Given that land is fundamental for nutrition, health, and sense of place, do you think the God portrayed in the Bible intended a basic level of health for the Israelites?
- Taking libertarian-leaning Senator Ron Paul as an example of someone who cares about modern ‘property rights,’ compare ‘property rights’ to Israel’s jubilee. Is the jubilee ‘fair’?

Health from a Legal Perspective: Is the Goal of Law Retribution or Restoration?

<p>¹⁹⁷ If a man has broken another man’s limb, his own shall be broken. ¹⁹⁸ If a man has destroyed an eye or a limb of a <i>poor man</i>, he shall pay one maneh of silver. ¹⁹⁹ If a man has destroyed an eye or a limb of <i>the servant</i> of another man, he shall pay one-half of a mina. ²⁰⁰ If a man has made the tooth of another to fall out, one of his own teeth shall be knocked out. ²⁰¹ If the tooth be that of a <i>poor man</i>, he shall pay one-third of a maneh of silver. (Code of Hammurabi)</p>	<p>¹⁸ If men have a quarrel and one strikes the other with a stone or with his fist, and he does not die but remains in bed, ¹⁹ if he gets up and walks around outside on his staff, then he who struck him shall go unpunished; he shall only pay for his loss of time, and shall take care of him until he is completely healed. (Exodus 21:18 – 19)</p>
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Discussion Questions

- The goal of the law from Exodus 21:18 – 19 is restoration of full health and restoration of relationship. How does that compare to the Code of Hammurabi? If corporations are people, should corporations have to restore the damage they inflict on people’s health?
- When we place this vision of economic health and physical health alongside the modern problem of corn allergies, where some people seem to be vulnerable to other people’s source of profit (and addictions), what actions do you think we should take?

Action Steps

- If possible, try not to eat corn related food products for 2 weeks. See how difficult it is for people with corn allergy.
- Use social media to get your friends and family to stop drinking soda and anything else with HFCS.

²⁵ Senator Ron Paul, *C-Span* (November 14, 2012); <http://www.c-spanvideo.org/program/HouseSession5365> (see 2hr:28min mark)

- Write your Congressperson and Senator to ban HFCS.
- Write your Congressperson and Senator to reduce the subsidies in the U.S. Farm Bill. The latest version of the *U.S. Farm Bill* was passed in 2014 and is called the Agricultural Act of 2014. It's encouraging:

'Within the [2014] bill is a significant shift... reflecting a decade of changing eating habits and cultural dispositions among American consumers. Organic farmers, fruit growers and hemp producers all did well in the new bill. An emphasis on locally grown, healthful foods appeals to a broad base of their constituents, members of both major parties said. While traditional commodities subsidies were cut by more than 30 percent to \$23 billion over 10 years, funding for fruits and vegetables and organic programs increased by more than 50 percent over the same period, to about \$3 billion. Fruit and vegetable farmers, who have been largely shut out of the crop insurance programs that grain and other farmers have enjoyed for decades, now have far greater access. Other programs for those crops were increased by 55 percent from the 2008 bill, which expired last year, and block grants for their marketing programs grew exponentially. In addition, money to help growers make the transition from conventional to organic farming rose to \$57.5 million from \$22 million... Programs that help food stamp recipients pay for fruits and vegetables — to get healthy food into neighborhoods that have few grocery stores and to get schools to grow their own food — all received large bumps in the bill.'²⁶

- You can read about it on Wikipedia. You would think it'd be easy to change. Republicans don't like to subsidize the market. Democrats don't like to give wealthy corporations tax breaks and benefits. But it's very difficult to change.
- Here is a sample letter: <http://www.povertyusa.org/we-can-make-a-difference/policies-that-help/sample-letter-take-action-on-the-farm-bill/>. Note that it is part of a Catholic initiative, informed by the Catholic social teaching about social justice. You can take that out if it's not relevant to you.
 - The key paragraph is: 'Redirect subsidies to small and medium-sized farms, especially minority-owned farms and ranches that truly need assistance. The Senate proposal to reduce direct payments is a positive step in decreasing unneeded subsidies. Savings from reductions in subsidies and direct payments should be used to fund and support domestic nutrition programs such as SNAP (formerly Food Stamps) and international food assistance programs such as Title II.'
 - If you are so bold, do more research and press for specific reductions in direct payments. Switching back from direct payments to crop insurance seems fair to me. It balances the farmers' interest in a stable income (diminishing the impact of oversupplying food to the market, or crop diseases, bad weather, etc.), and society's interest in a stable food supply.

²⁶ Jennifer Steinhauer, 'Farm Bill Reflects Shifting American Menu and a Senator's Persistent Tilling,' *New York Times*, March 8, 2014 also notes, 'Over all, healthy food has become more politically popular because of efforts to combat childhood obesity and diabetes and a growing national interest in the farm-to-table movement promoted by the first lady, Michelle Obama, and other national figures.'

Out of Eden: A Christian Ethics Study Guide to Food and the Environment

Session 3

Plastic: When Your Choices Mutate Someone Else's Baby

Part 1: Introduction to the Problem of Plastic

Let's watch an 18 minute TED Talk video called *The Toxic Baby* by Tyrone B. Hayes.

Discussion Questions

1. Did you know that BPA (a plastic), as the video says, has been linked with the conditions below. What concerns, fears, personal stories does this raise?

- Risk for cardiovascular disease
- Cancer: breast, brain, prostate
- Attention-related disorders
- Erectile dysfunction
- Sexual dysfunction
- Learning disorders
- Infertility
- Diabetes
- Obesity



2. Discuss the role of xenoestrogens, keeping mind these facts along with the two articles that follow. Xenoestrogens are chemical compounds in plastic that imitate estrogen. It literally means 'foreign estrogen' because it enters the body from outside.

- Risk for cardiovascular disease
- Cancer: breast, brain, prostate
- Attention-related disorders
- Erectile dysfunction
- Sexual dysfunction
- Learning disorders
- Infertility
- Diabetes
- Obesity



Impact on women:²⁷

- Higher rates of breast, uterine, ovarian cancers, diabetes, heart disease
- Heavier menstrual cramping
- Larger breast size
- Hormone disruption
- Allergies
- Accelerated aging
- Depression, fatigue, etc.

Impact on male animals:²⁸

- Mutation, dysfunction
- Decrease in sperm count
- Inability to reproduce (chemical castration)
- Development of ovaries and eggs
- Homosexual behavior

²⁷ Paula Mejia, 'If You've Taken the Pill Recently, You May Be at Increased Risk of Breast Cancer,' *Newsweek*, August 1, 2014, citing an article in *Cancer Research*, says, 'Women who took high-dose estrogen birth control pills were 50 percent more likely to develop breast cancer... Women currently have a one-in-seven chance of developing breast cancer in their lifetime, but the study suggests the odds might increase when coupled with high-estrogen pills and genetic history.' Cf. J. Toppari, A. Juul, 'Trends in puberty timing in humans and environmental modifiers,' *Molecular Cellular Endocrinology* (August 2010), p.39 – 44; E.A. Guillette, C. Conard, F. Lares, M.G. Aguilar, J. McLachlan, L.J. Guillette, 'Altered breast development in young girls from an agricultural environment,' *Environmental Health Perspectives* (March 2006), p.471 – 5; Elizabeth Smith, M.D., 'Xenoestrogens the Cause of Menstrual Cramp,' *Menstrual Cramp*; <http://www.nocramp.com/xeno.html> last accessed August 6, 2016

²⁸ Juan Gonzales and Amy Goodman, 'Silencing the Scientist: Tyrone Hayes on Being Targeted by Herbicide Firm Syngenta,' *Democracy Now*, February 21, 2014; A.M. Vajda, L.B. Barber, J.L. Gray, E.M. Lopez, J.D. Woodling, D.O. Norris, 'Reproductive disruption in fish downstream from an estrogenic wastewater effluent,' *Environmental Science Technology* (May 2008), p.3407 – 14.

Article:

Environmental Chemicals and Disorders of Sex Differentiation in Male Newborn²⁹

‘There is great concern that the incidence of congenital disorders of male sexual differentiation is increasing. Several reports indicate an increase in the prevalence rates of cryptorchidism, hypospadias and micropenis. It has been hypothesized that the adverse trends in male sexual differentiation are related to environmental xenoestrogens and/or antiandrogens, which may disrupt normal sex differentiation during fetal life. In this short review, we summarize the secular trends in the incidence of disorders of male sex differentiation, the occurrence of genital abnormalities in the sons of women exposed to diethylstilbestrol during pregnancy, and the adverse effects of prenatal estrogen and antiandrogen treatment in experimental animals and in human male fetus. We also report the main environmental chemicals with known estrogenic and/or antiandrogenic effects. Special attention is given to the testing strategies for evaluation of estrogenic-like or antiandrogenic activity of potential environmental disruptors.’

- Hypospadias: birth defect of the urethra where the urinary tract opening is not at the usual place, at the head of the penis
- Cryptorchidism: the absence of one or both testes in the scrotum
- Micropenis: when the erect penis is 2.75 inches or less; whereas the average erect penis is 5 inches

How do we absorb chemicals like xenoestrogens?

- Almost all plastics, especially when plastics become hot or are heated
- Bisphenol A in plastic bottles, containers and almost all food-can liners
- Recycled plastics with residues of herbicides, pesticides, poisons and chemical solvents
- Non-organic livestock are fed estrogenic drugs to fatten them
- Grains sprayed with pesticide
- Some soaps, cosmetics, lotions, shampoos
- Solvents found in fingernail polish and polish remover, glue, cleaning supplies
- Some food coloring
- Plastic microbeads in water
- Oral contraceptives, synthetic hormones
- Recycled water with hormones from urine from women who used estrogen-based birth control pills (recycling toilet water filters urine but not the hormones)³⁰

Discussion Questions

- We’ve designed plastics to increase our choices. Plastic bags, bottles, Tupperware, etc. are meant to increase our food choices, like what, when, how, and where we eat. Make-up, condoms, birth control, and other chemicals related to plastics are meant to increase our sexual choices, like when, where, how, and with whom we have sex. But what if increasing our choices impacts other people’s experiences of food and sex without their consent? Should future generations have veto power on the present generation?
- Why do we think more choices are good for us?
- Is there a path of human development that everyone should experience? Physically? Morally?

²⁹ C. Jeandrel, F. Paris, B. Terouane et C. Sultan, ‘Environmental Chemicals and Disorders of Sex Differentiation in Male Newborn,’ *Les Journees de Techniques Avancees en Gynecologie et Obstetrique PMA Perinatologie et Pediatrie* (2002); http://www.lesjta.com/article.php?ar_id=419

³⁰ Richard Owen & Susan Jobling, ‘Environmental Science: The Hidden Costs of Flexible Fertility,’ *Nature*, May 24, 2012; Bob Yirka, ‘Pair Call for Public Discourse on Treating Wastewater Contaminated with Birth Control Pill Chemicals,’ *Phys.org*, May 24, 2012

Part 2: Does Absolute Freedom Corrupt Absolutely?

'Vain, immoral, bigoted: this is your brain in action, according to [researcher Cordelia Fine]... The brain, she shows, distorts reality in order to save us from the ego-destroying effects of failure and pessimism. For example, an optimist who fails at something edits the truth by blaming others for the failure and then takes complete credit for any successes.'³¹

'There is no good and evil, only power, and those too weak to use it.'³²

[In Hinduism:] 'Evil as well as good, along with suffering is considered real and caused by human free will... However, neither good nor evil... are linked to gods or God, but considered a part of the innate nature of living in the Samsāra cycle of rebirths.'³³ 'On the higher level of Existence, however, there is no evil or good, since these are dependent mainly on temporal circumstances.'³⁴

'If there is no extant God and no extant gods, no good and no evil, no right and no wrong, no meaning and no purpose; if there are no values that are inherently valuable; no justice that is ultimately justifiable; no reasoning that is fundamentally rational, then there is no sane way to choose between science, religion, racism, philosophy, nationalism, art, conservatism, nihilism, liberalism, surrealism, fascism, asceticism, egalitarianism, subjectivism, elitism, ismism.'³⁵

'Life has no higher purpose than to perpetuate the survival of DNA... life has no design, no purpose, no evil and no good, nothing but blind pitiless indifference.'³⁶

3:6 When the woman saw that the tree [of the knowledge of good and evil] was good for food, and that it was a delight to the eyes, and that the tree was desirable to make one wise, she took from its fruit and ate; and she gave also to her husband with her, and he ate. 7 Then the eyes of both of them were opened, and they knew that they were naked; and they sewed fig leaves together and made themselves loin coverings.

4:6 Then the LORD said to Cain, 'Why are you angry? And why has your countenance fallen? 7 If you do well, will not your countenance be lifted up? And if you do not do well, sin is crouching at the door; and its desire is for you, but you must master it.' 8 Cain told Abel his brother. And it came about when they were in the field, that Cain rose up against Abel his brother and killed him. 9 Then the LORD said to Cain, 'Where is Abel your brother?' And he said, 'I do not know. Am I my brother's keeper?' 10 He said, 'What have you done? The voice of your brother's blood is crying to Me from the ground. 11 Now you are cursed from the ground, which has opened its mouth to receive your brother's blood from your hand. 12 When you cultivate the ground, it will no longer yield its strength to you; you will be a vagrant and a wanderer on the earth.'

³¹ Publisher's Weekly review of Cordelia Fine, *A Mind of Its Own: How Your Brain Distorts and Deceives* (New York: W.W. Norton & Co., 2008); see also Buster Benson, 'You Are Definitely Not Living in Reality Because Your Brain Doesn't Want You To,' *Quartz*, September 16, 2016); Bahar Gholipour, 'You Can't Always Trust Your Own Thoughts, And This Terrifying Chart Shows Why,' *Huffington Post*, September 22, 2016)

³² J.K. Rowling, *Harry Potter and the Sorcerer's Stone* (New York, NY: Scholastic, 1998), p.291

³³ Wikipedia, 'The Problem of Evil in Hinduism' accessed August 19, 2016

³⁴ Wikipedia, 'The Problem of Evil in Hinduism' accessed 2005 – 2014

³⁵ Mitchell Heisman, *Suicide Note*, 2010, p.21, found at <http://www.suicidenote.info>; Heisman committed suicide in Harvard Yard in September of 2010, leaving a very sophisticated, one thousand nine hundred and six page suicide note on the web in which he described his act as 'an experiment in nihilism.'

³⁶ Richard Dawkins, quote found online

Historical and Cultural Background

- The ‘image of God’ poem (Genesis 1:1 – 2:3) serves as a preface to the garden of Eden story (Genesis 2:4 – 4:26). Both the preface (Gen.1) and the genealogy (Gen.2) speak of God commissioning humanity to ‘fill’ the creation with life. The first seems to retell the typical Ancient Near Eastern story of the god or hero who defeats an enemy, builds a temple on that site, and places his image in it.³⁷ The garden of Eden story (Genesis 2:4 – 4:26) comes next, expanding the narration. It seems to be speaking to people of ancient river civilizations: the Nile (Egypt); the Tigris and Euphrates (Mesopotamia); etc. It tells the story of origins: of the waters, of all humanity, of God’s vision.
- In Scripture and in other cultures, trees symbolize age, firmness, strength, memory, and the ability to nourish us without dying. (This is why ‘ents’ in Tolkien’s *The Lord of the Rings* are special creatures, being shepherds of the trees, and having extremely long memories.) The two special trees, especially, represent *God*. In the story, God is the source of more life; God is the one who defines good and evil.

Discussion Questions

Let’s look at the similarities and differences between the ‘story’ of the modern problems we have caused with plastic, and the story of the ancient problems we have caused with human nature.

- The story of plastic has to do with *mutation*. The next story, the story of Cain and Abel, sons of Adam and Eve (Genesis 4), illustrates how human nature has been damaged. What if there is a spiritual mutation in human nature which makes us care less than we should about the biological mutations we cause in children down the line?
- The story of plastic has to do with *overconsumption*. In what sense does the Genesis story also deal with overconsumption? What is the value of limits? Why is it attractive to take into one’s self the power to define good and evil rather than leave it with God?
- The story of plastic has to do with *morality*. In the Genesis story, what is the intended path of human development: Physically? Morally? Do you believe that there is a real good and evil? Who gets to define them?

Action Steps³⁸

1. Ditch single-use-plastic. As a recent colleague who is in his 60s mentioned, “We didn’t have this problem when I was a kid. There wasn’t all this single-use disposable plastic. Everything was in glass, paper, steel or aluminum. This is a problem that’s been created in my lifetime.” Single-use disposable plastic items (SUDS) are the largest contributors to marine plastic pollution. Communities, institutions, businesses, governments and individuals can all take steps to minimize the use of SUDS, seeking reusable alternatives and ways of delivering and consuming goods and services that minimize the use of materials that have a high tendency to end up as plastic pollution.

³⁷ Rikk Watts, ‘Making Sense of Genesis 1,’ *Stimulus*, Volume 12, Number 4, November 2004

³⁸ The following comes from Matt Prindiville, ‘The Solution to the Plastic Problem?’, *Upstream*, April 22, 2015; <http://upstreampolicy.org/the-solution-to-plastic-pollution/>; last accessed August 18, 2016

2. Ban and/or substitute the worst offenders. Through the International Coastal Cleanup day, the Ocean Conservancy captured data on the top items which make up the majority of beach litter and marine plastic pollution. It makes sense to push for the development and deployment of alternatives and new technologies to reduce or eliminate these sources of pollution. When there are readily-available alternatives or technologies at comparable cost, bans on the worst offenders are a no-brainer. These include bans on items like single-use-disposable plastic shopping bags and polystyrene take-out containers. The good news is that these are inexpensive policies to implement and can be adopted in developing and developed nations alike, with the only costs being enforcement.



In the United States, much of the energy around policies to tackle plastic pollution has stemmed from a California-based campaign known as the Clean Seas Coalition (CSC). Comprised of nearly 30 groups, including community and state groups, and national organizations, the CSC has been a remarkable force for change. Prior to the statewide California ban on single-use disposable bags, which is the coalition's biggest success to date, they had succeeded in passing community bag and polystyrene bans for a majority of the state's population. UPSTREAM's board member, Leslie Tamminen, was instrumental in developing the CSC.

3. Innovate to replace the worst offenders. Thanks to the growing concern about plastic pollution around the world, entrepreneurs are innovating to create biodegradable materials that can replace the worst offenders. Often the challenge is not in the creation of the materials themselves, but in getting them picked up and used by major corporations. One of UPSTREAM's advisory board members, Daniella Russo, heads up an organization called Think Beyond Plastic (www.thinkbeyondplastic.com), which acts as an accelerator and forum for the deployment of technologies to solve plastic pollution. A great example of a technology innovation is Ecovative's compostable mushroom foam which can replace polystyrene for food-contact applications (www.ecovatedesign.com). While consumer goods companies and restaurant chains ultimately need to invest in these technologies, developed and developing countries, as well as local jurisdictions, can pass policies to support their widespread adoption at little to no cost.
4. Scale up best practices around recycling and away-from-home collection. It's no secret that the United States has one of the lowest recycling rates in the developed world at roughly 34% of what is generated by US households. But communities all over the United States and the world are showing how it can be done. San Francisco has reached an 80% recycling rate. Cart-based recycling and composting and the cultural support for zero waste is a model that should be exported to the world. Efforts are afoot to figure out how to utilize the remaining 20%, much of which is low-value plastics without current recycling markets. Similarly, in order to prevent plastic pollution, we need waste and recycling infrastructure when we're away from home – in public parks, beaches and along city sidewalks. Scaling up best practices around recycling and developing away-from-home collection infrastructure is expensive and will be more challenging for the developing world to implement than the developed. As is the case in Europe and gradually more of the developed world, funding for recycling infrastructure – and outreach and education – should increasingly come from the companies that produce packaging through extended producer responsibility (EPR; <http://upstreampolicy.org/projects/sustainable-packaging-policy/>). Container deposits – a.k.a. “bottle bills” (<http://www.bottlebill.org/>) – are a highly

successful form of EPR, which create incentives for the prevention and cleanup of litter and should be considered as a high-leverage tool to prevent plastic pollution.

5. Scale up best practices around storm-water management to capture plastics before they enter the environment. Significant amounts of plastic are removed through installing and maintaining storm-water capture devices, street-sweeping and storm drain cleaning and maintenance. While these are admittedly “the last stop” before plastics enter the environment, and should not be pursued as the only approach, they are an important part of the solution especially in developed countries. The challenge is that these approaches are expensive to implement and require significant amounts of ongoing funding.
6. Invest in solid-waste and recycling infrastructure in the developing world. No set of strategies to tackle plastic pollution would be complete without looking at the biggest source of plastic pollution by far – and that is the lack of solid waste, recycling and litter prevention infrastructure in the developing world. A recent comprehensive study in *Science* magazine lists the top 20 countries that are the major global contributors to marine plastic pollution (<http://news.nationalgeographic.com/news/2015/02/150212-ocean-debris-plastic-garbage-patches-science/>). The United States is number 20 and is the only developed country on the list. For those of you who might want to vilify China, consider that much of the developed world’s recyclables are shipped to China for processing and use. We would argue that the largest source of marine plastic pollution has been created by the world’s major consumer goods companies – by selling goods wrapped in plastic into developing countries without a second thought as to what will happen to the package when their “new customers” are finished with the product.

Top 10 sources of ocean's plastic waste

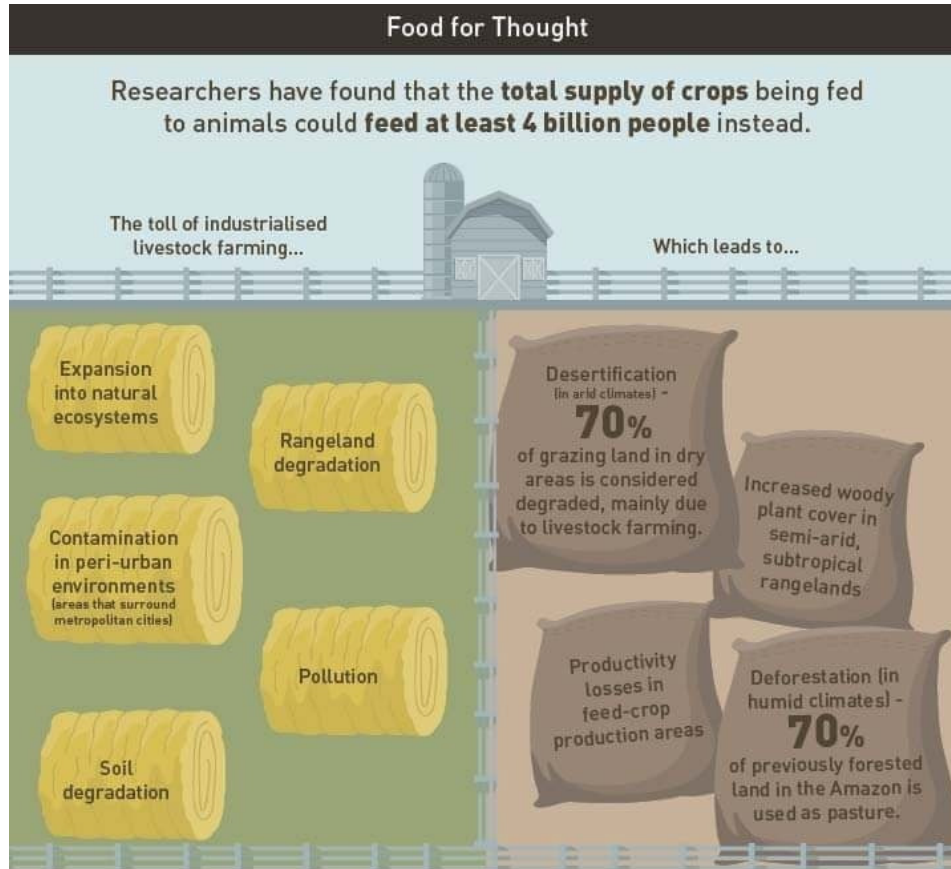


Out of Eden: A Christian Ethics Study Guide to Food and the Environment

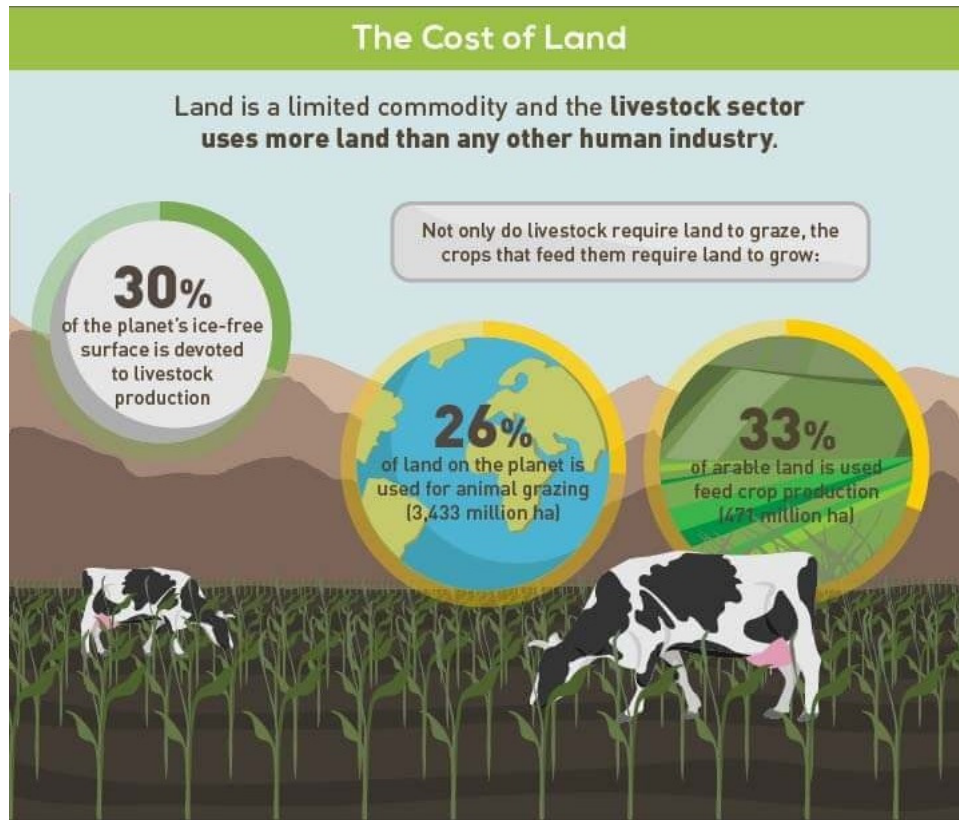
Session 4

Meat: What's the True Cost? And Who Pays It?

Part 1: The Cost of Meat³⁹



³⁹ Ocean Robbins, "The True Cost of Meat," *The Food Revolution Network*, December 1, 2014



Land degradation

Though soil erosion is a natural process, industrial farming methods have dramatically sped up the rate at which soils are eroded.



Soil is being lost from land areas

10 to 40 times

faster than the rate of soil renewal.

About:



20% of the world's pastures and rangelands

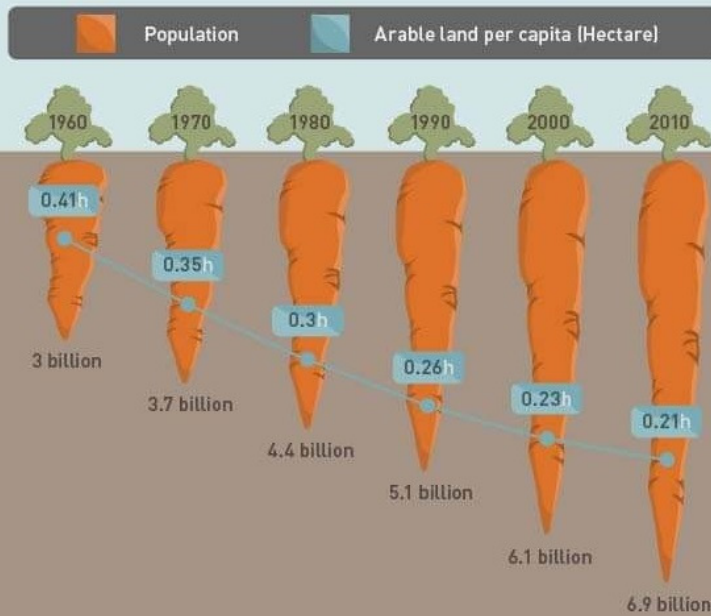
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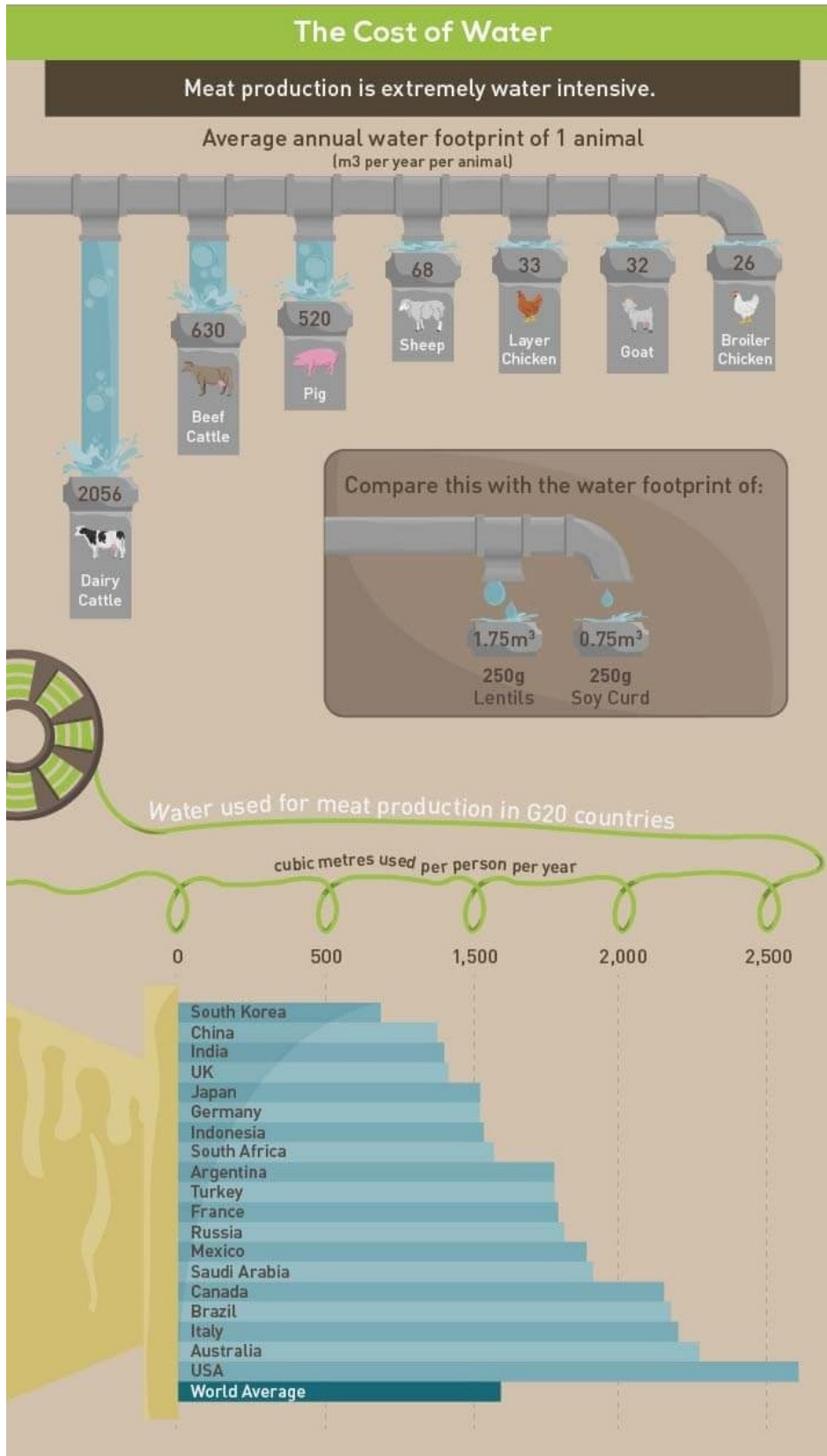


73%
of rangelands
in dry areas

...have been degraded to an extent, mostly due to overgrazing, compaction and erosion from livestock.

This diminishing area of cropland available for food production puts the future of food security at risk.

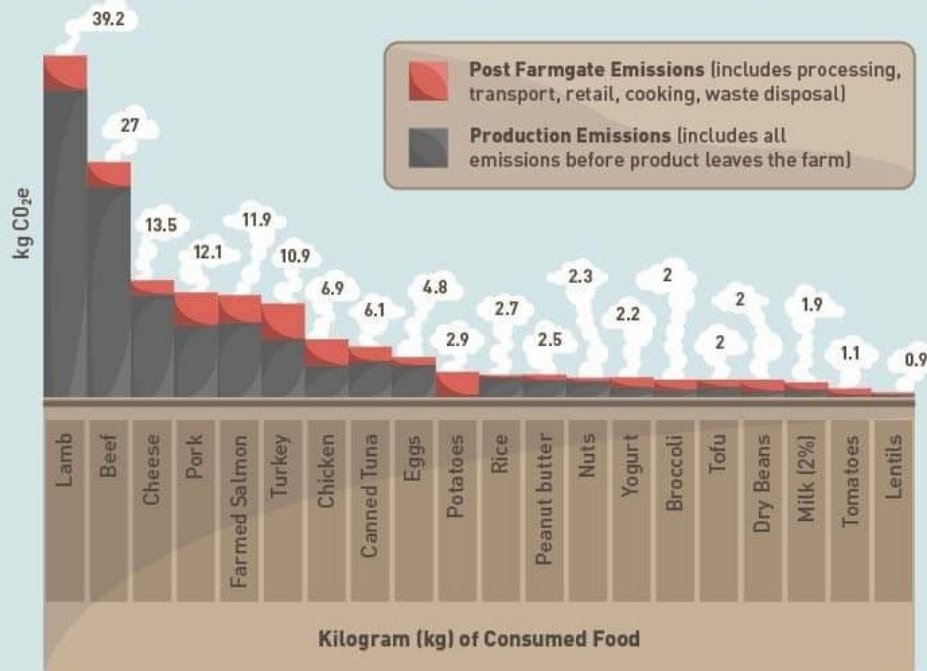




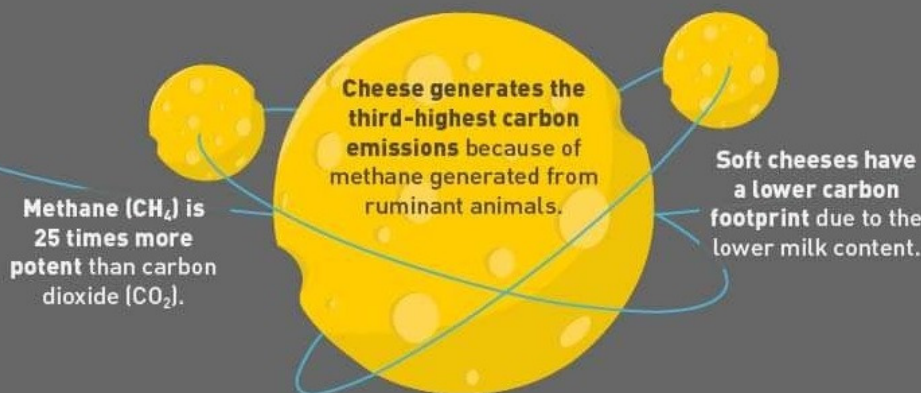
The Impact of CO₂

According to the Food and Agriculture Organization of the UN, the **livestock industry is responsible for 18% of global greenhouse gas emissions.**

Full lifecycle carbon emissions from common proteins and vegetables:



A note for **cheese-loving vegetarians**:



So what if we all turned vegetarian?

According to researchers at the Netherlands Environmental Assessment Agency, if the world turned vegetarian:



LAND

Pasture areas would be **reduced by 80%** (or 2,700 Mha).



WATER

The estimated **8% of the global water supply** used for growing crops to feed livestock could be used to **relieve pressure on the world's water resources**.

CO₂

Greenhouse gasses would see a:

17%
reduction
in CO₂

24%
reduction
in CH₄
(methane)

21%
reduction
in N₂O
(nitrous oxide)

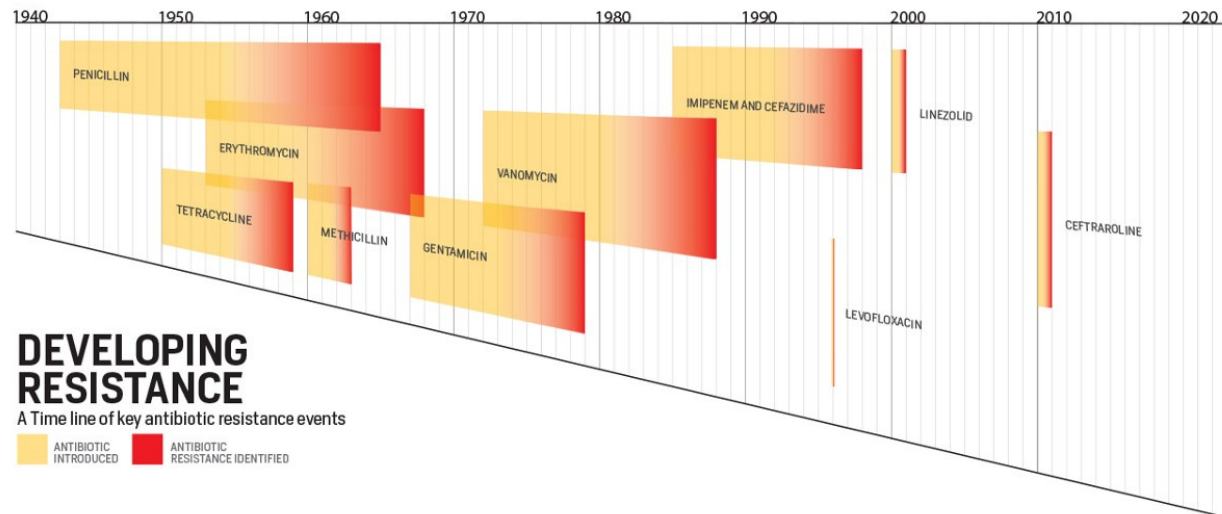
The main culprit of all these costs is the industrialised nature of the livestock industry.

Compared with vegetable and grain production,
the environmental cost of producing meat is profound.

The system isn't going to change overnight, but **more efficient farming and better-informed consumer choices** are vital to minimize the on-going impact of the meat industry on the earth's biosphere.

The Cost to Our Health

‘U.S. health officials on Thursday reported the first case in the country of a patient with an infection resistant to a last-resort antibiotic, and expressed grave concern that the superbug could pose serious danger for routine infections if it spreads. [...] The mcr-1 gene was found last year in people and pigs in China, raising alarm. The potential for the superbug to spread from animals to people is a major concern.’⁴⁰



Source: Maryn McKenna, ‘Imagining the Post-Antibiotics Future,’ *Medium*, November 20, 2013

‘Antibiotics resistance is one of the most pressing issues. It is recognized internationally that we’re on the threshold of a post-antibiotics era and while we can’t prove that antibiotics used in livestock systems are the leading cause of this, with 80 percent of the antibiotics used in the U.S. going to livestock in some way or another—under the spurious title of “therapeutic,” when actually the truth is they’re being used mainly for growth promotion purposes or to suppress diseases which would otherwise make those systems unviable—you can see that this is starting to be of government interest. Imagine a situation where all the antibiotics of last resort—which are propping up public health everywhere in the world—become useless. And we’re quite close to that now.

‘We’d also need to look at the cost of infectious diseases linked to industrial livestock production, the quality of the meats not being as health promoting as grass-fed meat, residues of various kinds finding their way into the meat, and the cost to the environment—both of the production itself (particularly water pollution resulting from nitrate pollution) and of the cropping systems that feed the livestock (more nitrate pollution from the synthetic nitrogen fertilizers used to grow acres and acres of corn and soybeans). Another major cost is greenhouse gas emissions, which impact climate change.’⁴¹

⁴⁰ Ransdell Pierson and Bill Berkrot, ‘U.S. Sees First Case of Bacteria Resistant to Last Resort Antibacterials,’ *Reuters*, May 27, 2016

⁴¹ Twilight Greenaway, ‘In Search of the True Cost of Industrial Meat,’ *Civil Eats*, April 12, 2016 also notes, however, that grazing animals and rotating crops *together* may make the carbon footprint smaller:

‘The NGO-led eat-less-meat campaigns have often thrown the ruminant baby out with the bathwater. In the UK, that has led to an increase the consumption of industrially produced poultry (some of the meat causing the most damage) at the expense of beef and lamb production (which has the potential to be part of the solution). These are controversial statements because it has now become almost orthodoxy to say that the worst offender in terms of Livestock’s long shadow is [beef and lamb’s] impact on greenhouse gas emissions. What those and other reports don’t reveal is that there’s a great difference between industrial ruminant production and pasture-feeding animals. One of the things that hasn’t been taken into account is that if you are grazing livestock on pasture, particularly as part of a crop rotation ... it has the capacity to significantly increase soil carbon, which reduces the amount of carbon in the atmosphere.’



Soil in a long-term experiment appears red when depleted of carbon (left) and dark brown when carbon content is high (right).

Part Two: How to Not Let Our Children Subsidize Our Consumption

<p>‘After thirty years on the throne, the pharaoh [of Egypt] celebrated a jubilee intended magically to rejuvenate the divine yet vulnerable monarch...’⁴²</p> <p>‘Some [Egyptian] kings built a whole new festival temple dedicated to this purpose, while others reconstructed a festival hall on [an] already existing temple.’⁴³</p>	<p>^{25:1} The LORD then spoke to Moses at Mount Sinai, saying, ²‘Speak to the sons of Israel and say to them, ‘When you come into the land which I shall give you, then the land shall have a sabbath to the LORD. ³ Six years you shall sow your field, and six years you shall prune your vineyard and gather in its crop, ⁴ but during the seventh year the land shall have a sabbath rest, a sabbath to the LORD; you shall not sow your field nor prune your vineyard. ⁵ Your harvest’s aftergrowth you shall not reap, and your grapes of untrimmed vines you shall not gather; the land shall have a sabbatical year. ⁶ All of you shall have the sabbath products of the land for food; yourself, and your male and female slaves, and your hired man and your foreign resident, those who live as aliens with you. ⁷ Even your cattle and the animals that are in your land shall have all its crops to eat... ¹⁰ You shall thus consecrate the fiftieth year and proclaim a release through the land to all its inhabitants. <i>It shall be a jubilee for you, and each of you shall return to his own property, and each of you shall return to his family... ¹³On this year of jubilee each of you shall return to his own property... ²³ The land, moreover, shall not be sold permanently, for the land is Mine; for you are but aliens and sojourners with Me... [Regarding land sale:] ²⁸ ...at the jubilee it shall revert, that he may return to his property... [Regarding indentured service:] ³⁹ If a countryman of yours becomes so poor with regard to you that he sells himself to you, you shall not subject him to a slave’s service... ⁵⁴Even if he is not redeemed by these means [his relatives pay his debt], he shall still go out in the year of jubilee, he and his sons with him. ⁵⁵ For the sons of Israel are My servants; they are My servants whom I brought out from the land of Egypt. I am the LORD your God. (Leviticus 25)</i></p> <p>²⁰ Only the trees which you know are not fruit trees you shall destroy and cut down... (Deuteronomy 20:20).^{22:6} If you happen to come upon a bird’s nest along the way, in any tree or on the ground, with young ones or eggs, and the mother sitting on the young or on the eggs, you shall not take the mother with the young; ⁷ you shall certainly let the mother go, but the young you may take for yourself, in order that it may be well with you and that you may prolong your days. (Deuteronomy 22:6 – 7)</p>
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Historical and Cultural Background

- Biblical Israel celebrated a ‘jubilee’ which was based on the story of Adam and Eve given the original Garden of Eden by a good God. If humanity had not fallen into corruption, all descendants of Adam and Eve would have inherited their portions of the beautiful garden land. Note that there were other forms of wealth, like livestock, clothing, equipment, pottery, jewelry, and coins.
- Ancient biblical Israel was a nomadic people who became agrarian. The first five books of the Bible – the ‘books of Moses’ or Torah (Genesis, Exodus, Leviticus, Numbers, and Deuteronomy) – are foundational documents, like a charter or constitution.

Discussion Questions

- Compare the two jubilees. Where do the resources go in each? What does that say about the events?

⁴² In ancient Egypt, the pharaoh celebrated a ‘jubilee’ as well. This description of an ancient limestone with hieroglyphic carving comes from the New York Metropolitan Museum of Art, *Scenes from a King’s Thirty Year Jubilee*, Dynasty 4, probably the reign of Snefru (ca. 2575 – 2551 B.C.)

⁴³ Sameh M. Arab, ‘The Sed-Festival (HebSed): Renewal of the Kings’ Reign,’ *Arab World Books*; http://www.arabworldbooks.com/egyptomania/sameh_arab_sed_heb.htm

- How do the passages reflect a concern for future children or not?
- Discuss this statement: People who don't exist yet should still have human rights, so the present generation should not be able to exploit their lack of voice today.

Exploitation of the Land: The Heretic and His Impact

<p>'God gave the world to men in common; but since he gave it them for their benefit, and the greatest conveniences of life they were capable to draw from it, it cannot be supposed he meant it should always remain common and uncultivated. He gave it to the use of the industrious and rational, (and labour was to be his title to it;) not to the fancy or covetousness of the quarrelsome and contentious... God, by commanding to subdue, gave authority so far to appropriate: and the condition of human life, which requires labor and materials to work on, necessarily introduces private possessions.'⁴⁴</p>	<p>'A report by Trucost on behalf of The Economics of Ecosystems and Biodiversity (TEEB) program sponsored by United Nations Environmental Program, examined the money earned by the biggest industries on this planet, and then contrasted them with 100 different types of environmental costs. To make this easier, they turned these 100 categories into 6: water use, land use, greenhouse gas emissions, waste pollution, land pollution, and water pollution. The report found that when you took the externalized costs into effect, essentially NONE of the industries was actually making a profit. The huge profit margins being made by the world's most profitable industries (oil, meat, tobacco, mining, electronics) is being paid for against the future: we are trading long term sustainability for the benefit of shareholders. Sometimes the environmental costs vastly outweighed revenue, meaning that these industries would be constantly losing money had they actually been paying for the ecological damage and strain they were causing.'⁴⁵</p>
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Discussion Questions

- John Locke was an important political philosopher, very influential to the American founding fathers because of his ideas of property rights and political revolution. What do you think of his view that the 'industrious and rational' would gradually accumulate more and more of the natural world? How does that compare with the relationships honored in Leviticus 25?
- The quote on the right describes 'externalities,' as economists call them. The true cost of making something is 'externalized' so neither producer nor consumer have to pay it. What 'externalities' have we observed above in the production of meat? How do our future children pay for our current consumption?
- How would the passages from the Jewish vision of life described in the Hebrew Bible critique this situation?

Action Steps

- Eat sustainably: Give up all intensively raised (non free-range) meat. Eat poultry and pork more than beef. Cook meat as a garnish on vegetables. Eat meat more occasionally and pay more for it. Eat only free-range, grass-fed beef and lamb.
- Educate others about Omega-3 vs. Omega-6 animal fats so they make healthy purchases
- Reduce government subsidies to grow feed corn: See Session 2
- Tax meat consumption: Especially from grain-fed, intensively raised meat
- Explore lab-grown meat?⁴⁶

⁴⁴ John Locke, *Second Treatise of Government*, edited by C.B. Macpherson (Indianapolis, IN: Hackett Publishing Company, 1980), p.21 – 22

⁴⁵ Exposing The Truth, 'UN Report Finds Almost No Industry Profitable If Environmental Costs Were Included,' *Films for Action*, citing Trucost, *Natural Capital At Risk: The Top 100 Externalities of Business*, April 2013

⁴⁶ Nathan Gray, 'The True Cost of Beef: Report Warns of High Environmental Cost of Beef Production,' *Food Navigator*, William Reed Business Media SAS, August 1, 2014 says 'Last year Swedish agricultural authorities recommended an EU-wide tax to reduce meat consumption. Sweden's Board of Agriculture said the levy would reduce the environmental impact of meat production.'

- Write your political representatives to ban the use of antibiotics: ‘The use of antibiotics to accelerate growth in farm animals can be banned by agriculture ministries, as it has in the European Union. All the better if governments jointly agree to enforce such rules widely. In both people and animals, policy should be to vaccinate more so as to stop infections before they start. That should appeal to cash-strapped health systems, because prophylaxis is cheaper than treatment. By the same logic, hospitals and other breeding grounds for resistant bugs should prevent infections by practising better hygiene. Governments should educate the public about how antibiotics work and how they can help halt the spread of resistance... Policy can also sharpen the incentives to innovate... Another [suggestion] is to expand a basic-research fund set up by... governments in order to sponsor the development of cheap diagnostic techniques. If doctors could tell instantaneously whether an infection was viral or bacterial, they would no longer be tempted to administer antibiotics just in case. If they knew which antibiotics would eradicate an infection, they could avoid prescribing a drug that suffers from partial resistance, and thereby limit the further selection of resistant strains. Combining policies to accomplish many things at once demands political leadership... Enough time has been wasted issuing warnings about antibiotic resistance. The moment has come to do something about it.’⁴⁷

Instead, Europe’s populations should eat more vegetables for both environmental and health benefits, it said. The high environmental cost of beef production has also been cited as one of the main driving factors behind efforts to create lab grown meat. Last year Professor Mark Post and his colleagues in the Netherlands produces the world’s first burger made from ‘cultured beef.’ The proof of principle burger was used to demonstrate that it is technically possible to use stem cells isolated from cows to grow meat in a lab. The small strands of meat could then be used in the production of foods that use ground or minced beef, say the researchers behind the project.’

⁴⁷ The Economist, ‘When the Drugs Don’t Work: How to Combat the Dangerous Rise of Antibiotic Resistance,’ *The Economist*, May 21, 2016

Out of Eden: A Christian Ethics Study Guide to Food and the Environment

Session 5

Food Waste: Are Greed and Gluttony Still Sins?

Part 1: The State of Food Waste in the U.S.

On YouTube, watch the 30 minute video *Tossed Out: Food Waste in America* from 2014.

Discussion Questions:

- How does food get wasted at each stage of bringing it from the farm to your table?



Source: Justin E. Burt, 'Food Waste at Each Life Cycle,' <http://www.justineburt.com/the-secret-life-of-sustainability/food-waste-at-each-life-cycle-stage>

- What are some things people are doing to reduce waste?

An Alternative Ethic: Let Natural Limits and Moral Limits Constrain Your Choices

‘What Farm-to-Table Got Wrong’

by Dan Barber, *New York Times*, May 17, 2014

(Dan Barber is an award-winning chef and co-owner of the Blue Hill and Blue Hill at Stone Barns restaurants and the author of *The Third Plate: Field Notes on the Future of Food*.)

POCANTICO HILLS, N.Y. — IT’S spring again. Hip deep in asparagus — and, soon enough, tomatoes and zucchini — farm-to-table advocates finally have something from the farm to put on the table. The crowds clamoring for just-dug produce at the farmers’ market and the local food co-op suggest that this movement is no longer just a foodie fad. Today, almost 80 percent of Americans say sustainability is a priority when purchasing food. The promise of this kind of majority is that eating local can reshape landscapes and drive lasting change.

Except it hasn’t. More than a decade into the movement, the promise has fallen short. For all its successes, farm-to-table has not, in any fundamental way, reworked the economic and political forces that dictate how our food is grown and raised. Big Food is getting bigger, not smaller. In the last five years, we’ve lost nearly 100,000 farms (mostly midsize ones). Today, 1.1 percent of farms in the United States account for nearly 45 percent of farm revenues. Despite being farm-to-table’s favorite targets, corn and soy account for more than 50 percent of our harvested acres for the first time ever. Between 2006 and 2011, over a million acres of native prairie were plowed up in the so-called Western Corn Belt to make way for these two crops, the most rapid loss of grasslands since we started using tractors to bust sod on the Great Plains in the 1920s.

How do we make sense of this odd duality: a food revolution on one hand, an entrenched status quo on the other? I got a hint of the answer a few years ago, while standing in a field in upstate New York. I was there because, many years before, I’d decided I wanted local flour for my restaurants. I chose Lakeview Organic, a grain farm operated by Klaas and Mary-Howell Martens. Klaas was growing a rare variety of emmer wheat (also known as farro), nearly extinct but for the efforts of a few farmers.

Milled and baked into whole wheat bread, the emmer was a revelation — intensely sweet and nutty. I spoke routinely about the importance of local grain and the resurrection of lost flavors. I was waving the farm-to-table flag and feeling pretty good about it, too. Visiting Klaas those years later, hoping to learn what made the emmer so delicious, I realized I was missing the point entirely. The secret to great-tasting wheat, Klaas told me, is that it’s not about the wheat. It’s about the soil.

In fact, on a tour of his farm, there was surprisingly little wheat to see. Instead, Klaas showed me fields of less-coveted grains and legumes like millet, barley and kidney beans, as well as cover crops like mustard and clover, all of which he plants in meticulously planned rotations. The rotations dictate the quality of the soil, which means they dictate the flavor of the harvests as well. They are the recipe for his delicious emmer.

Each planting in the sequence has a specific function. Klaas likes his field rotations to begin with a cover crop like the mustard plant. Cover crops are often grown to restore nutrients depleted from a previous harvest. Plowed into the soil after maturity, mustard offers the added benefit of reducing pest and disease problems for subsequent crops. Next Klaas will plant a legume, which does the neat trick of fixing nitrogen: grabbing it from the atmosphere and storing it in the plant’s roots. Soybeans are a good choice; or kidney beans, if the local processor is paying enough to make it worth his while; or cowpeas, which he harvests for animal feed. If there’s a dry spell, he’ll forgo beans altogether and pop in some hardy millet. Oats or rye is next; rye builds soil structure and suppresses weeds. Only then is Klaas’s soil locked and loaded with the requisite fertility needed for his wheat.

As much as I cling to tried and true recipes, Klaas doesn’t. Depending on what the soil is telling him, he may roll out an entirely different rotation. If there’s a buildup of fungal disease in the field, the next season he’ll plant a brassica like cabbage or broccoli, followed by buckwheat, and then barley. Barley is among Klaas’s favorite crops. In addition to cleansing the soil of pathogens, it can be planted along with a nitrogen fixer like clover, further benefiting the soil. Once again, the soil is ready for wheat.

Standing in Klaas's fields, I saw how single-minded I had been. Yes, I was creating a market for local emmer wheat, but I wasn't doing anything to support the recipe behind it. Championing Klaas's wheat and only his wheat was tantamount to treating his farm like a grocery store. I was cherry-picking what I most wanted for my menu without supporting the whole farm.

I am not the only one. In celebrating the All-Stars of the farmers' market — asparagus, heirloom tomatoes, emmer wheat — farm-to-table advocates are often guilty of ignoring a whole class of humbler crops that are required to produce the most delicious food. With limited American demand for local millet, rye and barley, 70 percent of Klaas's harvest was going into livestock feed for chickens, pigs and dairy cattle. In general, Klaas earned pennies on the dollar compared with what he'd make selling his crops for human consumption. And we were missing out as well, on nutritious foods that are staples of the best cuisines in the world. Diversifying our diet to include more local grains and legumes is a delicious first step to improving our food system. Millet and rye are an easy substitute for rice or pasta. But that addresses only the low-hanging fruit of Klaas's farm. More challenging is to think about how to honor the other underutilized parts of his rotations — classic cover crops like cowpeas and mustard, which fertilize the soil to ensure healthy harvests in the future.

Today, the best farmers are tying up valuable real estate for long periods of time (in an agonizingly short growing season) simply to benefit their soil. Imagine if Macy's reserved half of its shelf space at Christmas for charitable donations. A noble idea. But profitable? Not so much. By creating a market for these crops, we can provide more value for the farmer and for our own diets, while supporting the long-term health of the land. In Klaas's field, I bent down and ripped off a green shoot of Austrian winter peas. I took a bite. Inedible? No, delicious! Thirty acres of the most tender and sweet pea shoots I'd ever tasted. (Harvesting the leaves would somewhat reduce the amount plowed back into the soil, but the plant's soil benefits would remain.) In the distance I could make out a field of mustards. Klaas plants Tilney mustard, similar to the spicy green you find in a mesclun mix. I realized I wasn't just looking at a cover crop. I was looking at a salad bowl.

Back at the restaurant, I created a new dish called "Rotation Risotto," a collection of all of Klaas's lowly, soil-supporting grains and legumes, cooked and presented in the manner of a classic risotto. I used a purée of cowpea shoots and mustard greens to thicken the grains and replace the starchiness of rice. As one waiter described the idea, it was a "nose-to-tail approach to the farm" — an edible version of Klaas's farming strategy.

It's one thing for chefs to advocate cooking with the whole farm; it's another thing to make these uncelebrated crops staples in ordinary kitchens. Bridging that divide will require a new network of regional processors and distributors. Take beer, for example. The explosion in local microbreweries has meant a demand for local barley malt. A new malting facility near Klaas's farm recently opened in response. He now earns 30 percent more selling barley for malt than he did selling it for animal feed. For other farmers, it's a convincing incentive to diversify their grain crops. Investing in the right infrastructure means the difference between a farmer's growing crops for cows or for cafeterias. It will take the shape of more local mills (for grains), canneries (for beans) and processors (for greens). As heretical as this may sound, farm-to-table needs to embrace a few more middlemen.

Perhaps the problem with the farm-to-table movement is implicit in its name. Imagining the food chain as a field on one end and a plate of food at the other is not only reductive, it also puts us in the position of end users. It's a passive system — a grocery-aisle mentality — when really, as cooks and eaters, we need to engage in the nuts and bolts of true agricultural sustainability. Flavor can be our guide to reshaping our diets, and our landscapes, from the ground up.'

Discussion Question

- Let's say you decide to pick food not based on what you want to eat in the moment, but based on what's healthiest for the soil, and the environment, and our future children's health. What questions would you have to research in order to do that? For example, if you don't eat summer

fruit (strawberries, blueberries, peaches) in the winter because of its high transportation cost, what fruit can you have in winter?

Part Two: Why Were Greed and Gluttony Sinful?

<p>‘Greed, for lack of a better word, is good! Greed is right! Greed works! Greed clarifies, cuts through, and captures the essence of the evolutionary spirit. Greed, in all of its forms... has marked the upward surge of mankind.’ (Gordon Gekko, <i>Wall Street</i>)</p> <p>‘Greed is good to most economists. It’s greed that makes people work harder, be more productive and helps the economy grow.’ (Rebecca M. Blank, Chancellor of the University of Wisconsin-Madison, former Acting U.S. Secretary of Commerce)</p> <p>‘We have to accept that inequality is a way of achieving greater opportunity and prosperity for all.’ (Lord Griffiths, Vice Chairman of Goldman Sachs, 2009)</p>	<p>¹⁹ When you reap your harvest in your field and have forgotten a sheaf in the field, you shall not go back to get it; it shall be for the alien, for the orphan, and for the widow, in order that the LORD your God may bless you in all the work of your hands. ²⁰ When you beat your olive tree, you shall not go over the boughs again; it shall be for the alien, for the orphan, and for the widow. ²¹ When you gather the grapes of your vineyard, you shall not go over it again; it shall be for the alien, for the orphan, and for the widow. ²² You shall remember that you were a slave in the land of Egypt; therefore I am commanding you to do this thing. (Deuteronomy 24:19 – 22)</p> <p>¹ When you sit to dine with a ruler, note well what is before you, ² and put a knife to your throat if you are given to gluttony. ³ Do not crave his delicacies, for that food is deceptive. ⁴ Do not wear yourself out to get rich; have the wisdom to show restraint. ⁵ Cast but a glance at riches, and they are gone, for they will surely sprout wings and fly off to the sky like an eagle. (Proverbs 23:1 – 5)</p> <p>¹⁶ If you find honey, eat just enough— too much of it, and you will vomit. (Proverbs 25:16)</p> <p>⁶ Better a poor man whose walk is blameless than a rich man whose ways are perverse. ⁷ He who keeps the law is a discerning son, but a companion of gluttons disgraces his father. ⁸ He who increases his wealth by usury amasses it for another, who will be kind to the poor. (Proverbs 28:6 – 8)</p> <p>⁴⁹ Behold, this was the guilt of your sister Sodom: she and her daughters had arrogance, abundant food and careless ease, but she did not help the poor and needy. (Ezekiel 16:49)</p> <p>¹⁹ Their end is destruction, whose god is their appetite, and whose glory is in their shame, who set their minds on earthly things. (Philippians 3:19)</p>
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Historical and Cultural Background

- The quotations on the right have been selected to show the uniformity of opinion over a 1200+ years in the biblical tradition.
- *Deuteronomy* was composed around 1200 BCE, according to tradition. It is one of the first five books of the Bible – the ‘books of Moses’ or Torah– which are foundational documents, like a charter or constitution, to biblical Israel.
- The *Book of Proverbs* in the Hebrew Bible was compiled under the name of King Solomon, who reigned in the mid 900’s BCE. These witty sayings, or proverbs, were crafted by ancient Israelites based on their experience of faith, life, God’s law, and intellect.
- The *Book of Ezekiel* was named for a Jewish priest at around the time of the Babylonian invasion of 586 BCE. He drew a parallel between the fates of Jerusalem and the infamous city Sodom.
- *Philippians* was written by the Jewish Christian leader Paul who wrote many letters which are compiled in the New Testament. He wrote it from a Roman prison, 60 – 62 AD.

Discussion Questions

- According to the quotes on the left, greed and gluttony are virtues in an economic system where they can be harnessed. Have they been harnessed? Or have they overtaken the system? When is greed too much?
- In the various passages on the right, what are the reasons connected to the Bible's challenge to greed and gluttony?

Action Steps

- Farm to Store:
 - Support local farmers, shop at farmers' markets, etc. because it often cuts down on energy costs of transport, although know your location's specialties and ask about healthy soil practices⁴⁸
 - Support modern-day gleaners
- Store to Kitchen (40% of food waste):
 - Ask for 'ugly' produce at the stores and buy it
 - Shop at stores that make jams and soups with slightly old or bruised produce
 - Shop at stores that sell food through food rescue programs (e.g. *Daily Table* in Boston)
 - Ask stores to DonateNotDump; inform stores about the Bill Emerson Act of 1996
- Kitchen to Waste (15 – 20% of food waste in U.S.):
 - Plan your meals, respect the seasons of nature
 - Eat from the back of the fridge
 - Compost your scraps
 - Ask your cafeterias (companies, schools, hospitals, universities) to DonateNotDump

Close: Two Inspiring Stories – Society of St. Andrew, Daily Table

'The Society of St. Andrew was formed in 1979 as an intentional community of two families called to life and ministry together in Christ. It has grown into an ecumenical, non-profit, charitable organization dedicated to leading others into lives of Christian community and service. Our ministry prevents more than 30 million pounds of food going to waste each year. Society of St. Andrew food salvage programs have a positive impact on the environment by reducing landfill waste by as much as 30 million pounds a year. Instead of harming the environment, this food instead feeds hungry Americans.'⁴⁹

'Daily Table receives shipments of excess food donations from groceries, suppliers, and food rescue organizations throughout Greater Boston, sometimes without much warning. Then, Samad and his team must find ways to make healthy food on the fly, using creative methods to prep, prepare, preserve, and serve inexpensive food for its low-income neighborhood store, all while ensuring as little as possible goes to waste (it's like the Food Network's hit show *Chopped*, only the one with the fewest leftovers wins). Adding to the challenge: All of their prepared meals must meet their strict nutritional guidelines. Remarkably, most meals cost from \$2 to \$4, allowing shoppers using food stamps to get the most for their money. Facing that mountain of carrots... they create a trio of recipes: They'll be mashed, mixed into carrot ginger soup, and shredded into slaw. Red snapper and radicchio are fresh and will be used in prepared meals, made from scratch on site by a team of chefs who mostly live within 2 miles of the store. Loaves of sourdough approaching their stale date will be made into bread crumbs and croutons. Overripe apples and strawberries are pureed into smoothies, while veggies past their prime go into stock for soups. The team relies on freezers to keep stockpiles that can be used days or weeks out. "Everything about Daily Table is not normal," Samad jokes. But he might be uniquely suited to handle the endeavor. He's a co-owner and former head chef of The Gleanery, a restaurant in Putney, Vermont, that uses the same food-

⁴⁸ Dan Barber, 'What Farm to Table Got Wrong,' *New York Times*, May 17, 2014, which I reproduced above, and Dan Barber, *The Third Plate: Field Notes on the Future of Food* (New York: Penguin Books, 2015)

⁴⁹ from their website, www.endhunger.org (last accessed August 21, 2016); Elizabeth Royte, 'One-Third of Food Is Lost or Wasted: What Can Be Done,' *National Geographic*, October 13, 2014 notes, 'At the grassroots level, gangs of Boy Scouts, Future Farmers of America, and church groups organized by the Society of St. Andrew inch through the nation's farm fields, gleaned more than 20 million pounds of produce a year for food pantries and kitchens.'

rescue principles in its meals... Daily Table has seen a steady growth in its sales and members, selling 400 prepared meals a day. The market is hoping to expand to a second storefront by year's end.⁵⁰

⁵⁰ Janelle Nanos, 'Daily Table is on a Mission to Stop Food Waste and Feed the Hungry,' *Boston Globe*, May 13, 2016