Agriculture Today...
Agriculture Today...

This is not the same as this.
Agriculture Today...

U.S. agriculture is a $470 billion industry.

Food is more valuable as a commodity than for the caloric nutrients it provides to keep us alive.

Food is an internationally speculated upon and traded commodity, like oil or gold.

Green Revolution: 1930s to 1960s, great amounts of research invested in agricultural production increase... new fertilizers, pesticides, and seeds.
Agriculture Today...

“Unsustainable agriculture is commonly traced to a period of farming development in the late twentieth century termed ‘productivism’ or the ‘second food regime’. The following key process are implicated: modernization of farming practices; incorporation of farm sector into industrialized food supply system for mass markets; and strong state protection.”

Farmers are under external pressures to apply cost reducing and output increasing technologies...

They have to use fertilizers made by the companies the government has contracts with.
Agriculture Today...

*Intensification:* Rising use of agri-chemicals to increase outputs.

*Concentration:* Market process that drives out small farmers, making all farms owned by fewer and fewer large companies.

*Specialization:* Having farms that grow only one crop or raise one livestock (monoculture).
Agriculture Today...

This has led to:
- Loss of biodiversity
- Pollution of groundwater
- Soil erosion and salinity (saltiness)
- Lowering of water tables
- Soil compaction
- Pesticides getting in rivers
- Overgrazing of pasture land
- Atmospheric methane increase from cattle
Agriculture Today...

It’s also unhealthy!

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It’s also unhealthy! and economically unsustainable!
Agriculture Today...

The U.S. provides about $10.1 billion to subsidize the production of corn.

This means U.S. farmers have an incentive to overproduce corn – because it’s so cheap they don’t actually make money on the corn itself, only the government money.

This excess corn feeds the meat we eat and ends up as corn syrup in our sodas.

Most everything you eat has some trace of corn in it, somewhere along the line.
Agriculture Today...

The U.S. provides almost $137 billion in subsidies to agriculture. This is about $10.1 billion to support the production of corn.

This means that corn is so cheap that farmers are incentivized to produce corn even if they don't make money on it. Much of this corn is fed to livestock, and the excess meat we eat today comes from corn that was originally produced to subsidize the corn itself.

This excess corn is also used to produce corn syrup, which is a major ingredient in many of the foods we eat. Most everything you eat today, from the soda you drink to the honey you spread on your toast, contains some trace of corn, be it directly or indirectly.

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But the grains from here are cheaper

There are farmers here
Agriculture Today...

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But the grains from here are cheaper

Mass produced food is shipped around the world

There are farmers here
Agriculture Today...

The World Bank defines the poverty line as getting by on less than US $1.25 a day.

1.4 billion people live below this line.

About 1 in 7 people on this planet don’t have enough to eat.

This is not because there is not enough food on the planet.

This is not because we don’t know how to move food around the planet.

It is because food is a commodity which some cannot afford.

There is not a food problem. There is a poverty problem.
Agriculture Today...

We don’t make food for its caloric and nutritional value.

We make food because it is profitable!
FOOD

A Very Brief History of Sugar:

SUGAR

SWEET

SWEET
A Very Brief History of Sugar:

1000 A.D. – Virtually no one in Europe or the Middle East has any idea sugar cane is. They are familiar with the taste of sweetness only through honey and some fruits.

1650 A.D. – European elites become familiar with refined sugar through colonial extraction.

1800 A.D. – Sugar is seen as a staple in English people’s diets, usually taken with tea, coffee or chocolate.

1900 A.D. – Sugar comprises 1/5 of English people’s caloric intake.
- It is suggested that sugar fuels England’s industrial revolution, and subsequent political domination of the 1800s.

- Sugar fuels the labor force, by providing quick cheap energy source to factory workers.

- Tea with sugar becomes indispensable English dietary staple.

- It was cheap largely because it came from slave labor.

- Industry enslaved many, both literally and metaphorically in the sense of wage labor.
Sugar doesn't grow here

It grows here
Sugar doesn't grow here.

So the people here, bought humans from here.

It grows here.

To work here.
Sugar is transformed from a luxury to a necessity...
How much is the craving for sugar biologically and evolutionary built-in?

And how much is it a cultural-social construction?
The Future
The Future

Unpredictability is increasing, so many variables, like night temperatures...

“Strategies used in the past may not work in the future. Technological improvements improve yields under normal conditions but may not protect harvests from extremes expected in the future…”

Extreme events will create new baseline conditions which no climate model will be able to project.
Sustainability?

Can we grow forever?

Is sustainable growth a nonsense statement?

What is a renewable resource?

Sustainable for who? For what?

Sustainable or Resilient?

Can we predict our way out of looming problems?

Can technology save us?
Genetically modified foods?

Our foods have been genetically modified for the past 10,000 years.
Sustainability?

Feeding 9 billion people?