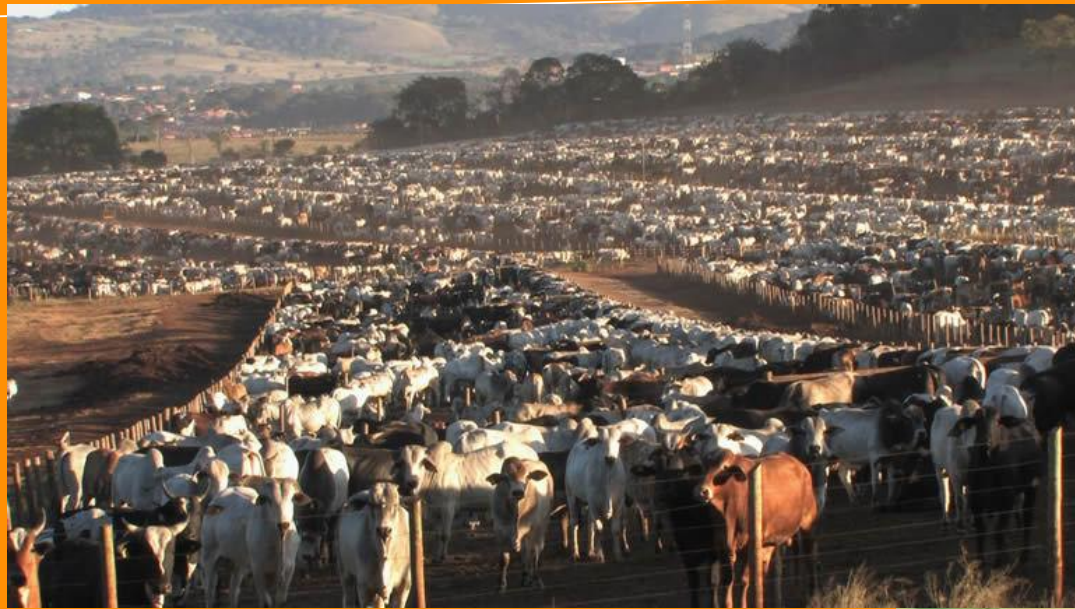
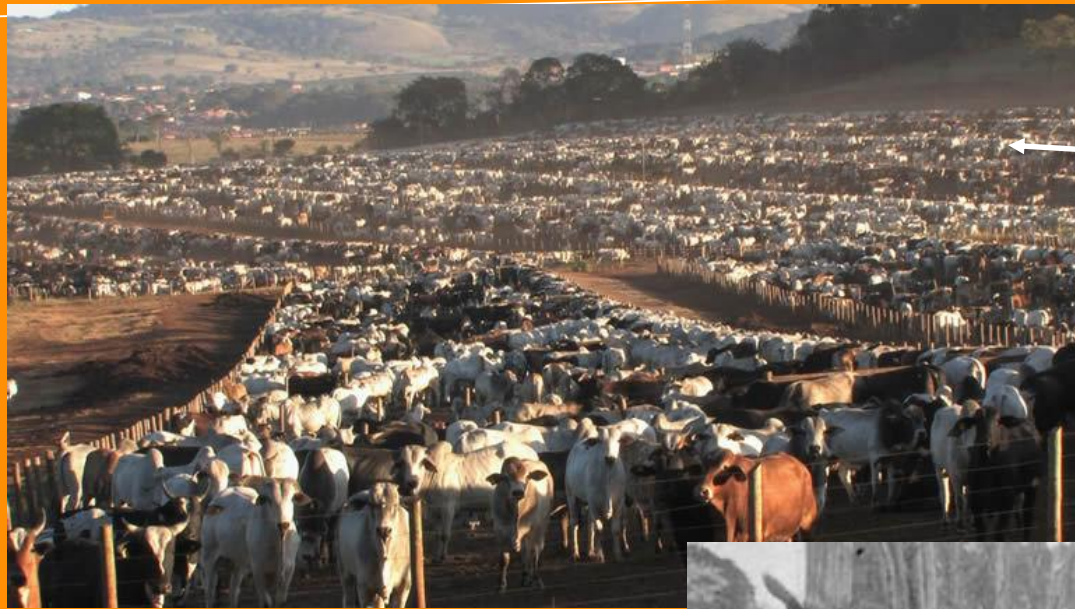


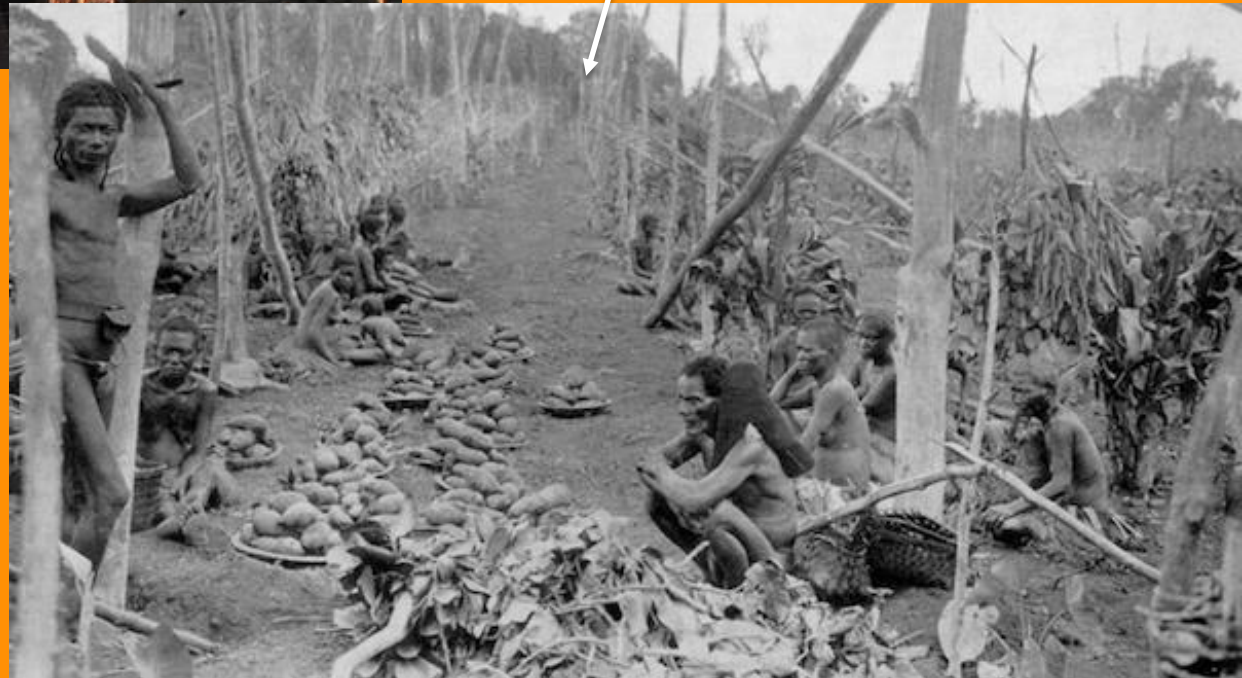
Agriculture Today...



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!

- This
- Lowering 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!

and economically unsustainable!

- This
- Loss of biodiversity
 - Pollution of groundwater
 - Soil erosion and salinity (saltiness)
 - Lowering of water tables
 - Soil compaction
 - Pesticide use
 - Overgrazing of land
 - Atmospheric methane increase from cattle



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 over produce 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. produces 1.5 billion bushels of corn annually. 80% of it is used to produce ethanol. The rest is used to feed livestock and produce the

This means that the U.S. produces more corn than it can use. The government subsidizes corn production so that farmers can make money on it. This means that the U.S. produces more corn than it can use.

This excess corn is used to produce ethanol. The ethanol is then used to produce ethanol-blended gasoline. This means that the U.S. produces more ethanol than it can use.

Most everything we eat has some trace of corn in it. This means that the U.S. produces more corn than it can use.



Agriculture Today....

This overproduction of American corn also causes excess to be 'dumped' on the markets of other countries through Free Trade agreements like NAFTA, making it difficult for small farmers in small countries to sustain their farms.



Agriculture Today....

This overproduction of American corn also causes excess to be 'dumped' on the markets of other countries through Free Trade agreements like NAFTA, making it difficult for small farmers in small countries to sustain their farms.



Agriculture Today....

This overproduction of American corn also causes excess to be 'dumped' on the markets of other countries through Free Trade agreements like NAFTA, making it difficult for small farmers in small countries to sustain their farms.



But the grains
from here are
cheaper

There are
farmers here

Agriculture Today....

This overproduction of American corn also causes excess to be 'dumped' on the markets of other countries through Free Trade agreements like NAFTA, making it difficult for small farmers in small countries to sustain their farms.



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

FOOD

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.

SUGAR

SWEET

FOOD

- 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

SWEET

Food

SUGAR

SWEETS



It grows here

Sugar doesn't
grow here

FOOD

SUGAR

SWEETS



SUGAR

FOOD

**Sugar is transformed from
a luxury to a necessity...**

SWEET

SUGAR

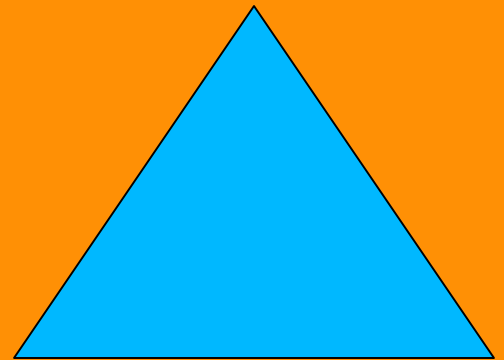
FOOD

SWEET

**How much is the craving for sugar
biologically and evolutionary built-in?**

**And how much is it a cultural-social
construction?**

The Future

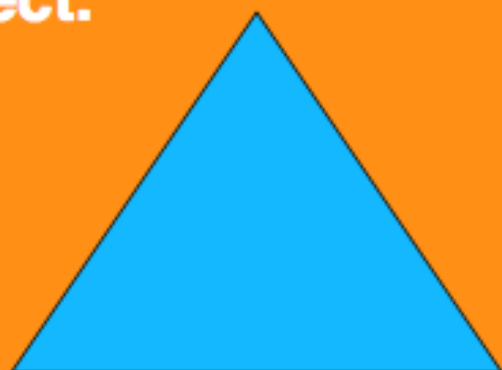


The Future

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?

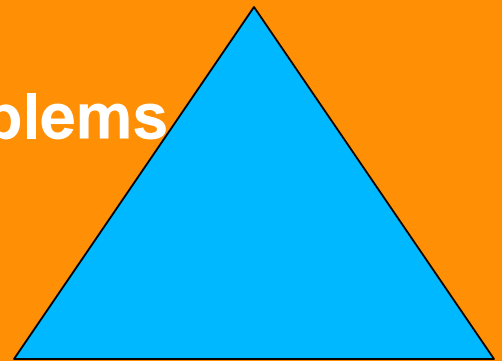
What is a renewable resource?

Sustainable for who? For what?

Sustainable or Resilient?

Can we predict our way out of looming problems

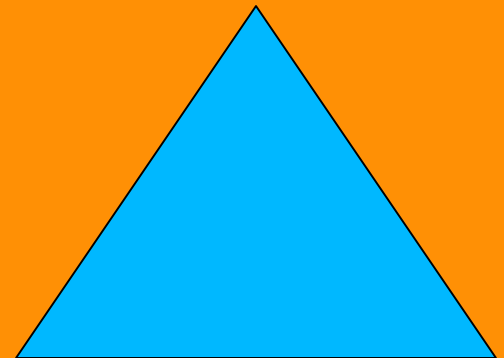
Can technology save us?



Sustainability?

Genetically modified foods?

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



Sustainability?

Feeding 9 billion
people?

