Food and Sustainability

The social and environmental effects of food production

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What is food

Food is the basic source for life

What we need:

Carbohydrate

Protein

Nutrients

Different species developed different strategies

Humans and food

Humans are omnivores

Wide variety of strategies

Important factor for economy, culture and society

A way how we interacted with a world around us

Prehistory of eating

- Humans ate more than 200-300 different kinds of food
- Highly mobile – migrated in a certain area
- Mostly plants – meat was an important source of calories and protein
- No surplus value – relative equality
- Overhunting
- Use of fire

Domesticating Nature

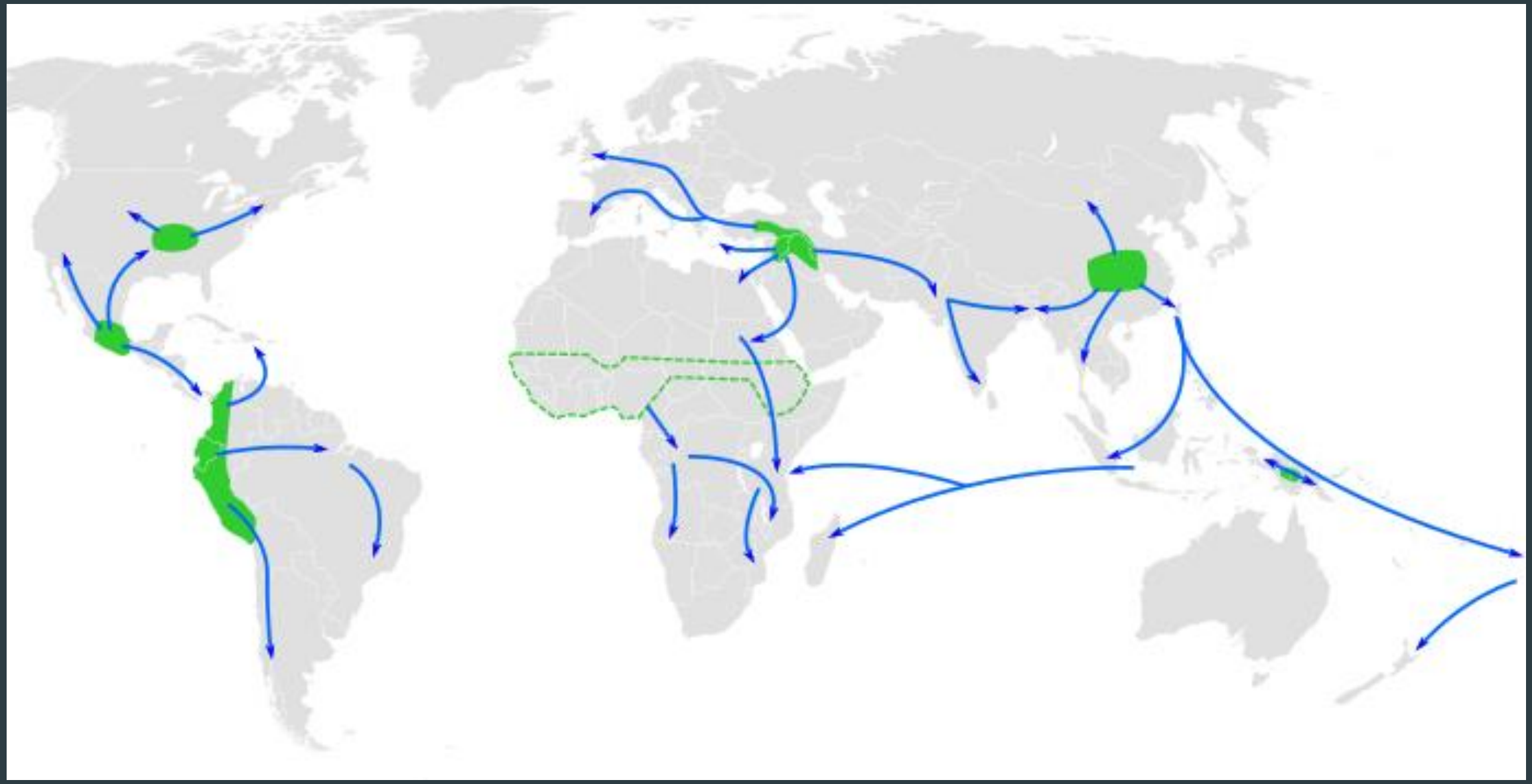
Rise of agriculture and animal husbandry

Started around 10.000-8.000 years before

Different main areas

Very slow change with a lot of different types

Sometimes reversed



Altering the Species

- Domestication
- Definitive changes in plants and animals
- Wheat, rice and corn
- Problems with the animals

Society after the revolution

- Sedentarism
- Increased population
  - Shorter time between pregnancies
  - Women start to ovulate earlier
- Possibility to store food
- Diseases
- The beginning of civilisation

The Limits of Slash and Burn

- For agriculture people cut down forests
- Cultivated land on those places
- Nutrients ran out after few years
- New forests had to be cut down, and the old ones could grow back
- With increasing population pressure the cycle became shorter, forests cannot regenerate
- Leading to potentional desertification and floods
- Population cannot be increased above aprox. 30 people/km^2
- New methods were needed

Rise of the State

- Organising the construction and maintaing of complex irrigation system
- Surplus value
  - More work for the farmer
  - Class society
  - Distribution of food
- Writing
- Widespread slavery

Land of the Commoners

- Typical agricultural landscape in Europe
- Villages owned certain territories called common
- The commons were places where residents could freely graize their animals, collect fuel, mushrooms, berries, catch fishes etc…
- The common system was regulated, but give livelihood for the smallest and poorest members of the community

New Philosophy

- Two waves of enclouser movements
  - 1450-1560 give land to manorial lords
  - 1750-1890 increase land productivity
- During the XVII. - XVIII. century different approaches to land and productivity
- Reasons to acquire field in Ireland and land in America was to improve it
- John Locke understood ownership of land through someones labour, while development through more exchange value
- Unproductive land should be owned and rented out by productive people

Tragedy of the commons

- Landreforms lead to understanding land and agriculture mostly through monetary means
- Helped to increase the output, but mostly based on labourer, not based on hectare
- Disturbed the social systems
- Generated
  - Needs for market products, since people cannot get it through the commons
  - Agrarian and industrial proletariat when people lost the possibility to reproduce themselves through lands

Soil mastery

- Good physical, chemical and biological characteristics are needed for plant cultivation
- Most important elements
  - Nitrogen
  - Phosphor
  - Potassium
- Soil is the home of many living organisims
- Legume, manure and fertilizer
- Destroying the top soil – creating deadzones

Humanity goes to war

- Huge losses
- Different kind of pest management techniques
- The chemical way
- Silent Spring
- Imidacloprid and Glyphosate
- War against nature
- Insectageddon – 76% of Germany‘s insects died within 27 years

Age of the machines

- Two main problems to ensure the flow of food – distance and work –
- Steamboats and railroad solved the distance -> the first crisis of overproduction
- Increasing food distances
- Different kind of machines for different workphases and crops
- Increasing the area of production
- Less workforce needed
- Energy slaves

Uniformisation of nature

- These changes could only be useful if plants and animals change as well
- Largscale uniformisation - decrease in biodiversity
- Monocropping
  - Big problem with pests and soil
- Bananatale
- Transportability, size, outlook are the deciding factors -> nutrients decreased
- Genetical Modification
- Patenting life

Investment logic

- Higher profits than every other oppurtunity
- Reduce costs
- Increase revenues
- Food is like every other commodity -> it shouldn‘t feed people, it should generate profit

Land ownership 101

- Land is essential for growing crops
- 50% of all habitable land is used for plants or for grazing
- On the Global South, there is an ongoing conflict between small-scale farmers and large landowner
- Small scale is more productive 70% of the food, 25% of land and rescources
- Large scale farms are wasteful: we eat only 24% of the products
- From the ‘50s people thought bigger farms are better suited for monocropping
- Small farms are more productive per hectare
- After the spikes in food prices in 2008 and 2011 investors and governments want to acquire more land

Downward Wage Spiral

- Capital vs. Labor (Knowledge) intensive agriculture
- Decreasing the costs of production
- Large farm with a lot of capital 1 person 200 hectares
- Small farm with a lot of knowledge 1 person 1 hectare
- Agricultural workers in developed countries are (illegal) immigrants
- NAFTA, TTIP, CETA – harmonising markets

Changing the habits

- Markets and food chains concentration
- Handul of corporations in every level
- Buying cheap: 1 bushel (=25 kg) of corn costs $3.14
- Selling dear: 6 kg of Kellogs cornflakes (from Amazon) cost $40 (50x more expensive!)
- Eating 900 more calories in 50 years
- Eating processed food -> more steps, more added costs

The cow in the room

- 70% of all agricultural land is used for feeding animals
- Directly responsible for 15% of all GHG
- Beef requires 150 times more water than wheat or rice
- Meat production increased fivefold
- 96% of the biomass of mammals is from livestock or humans
- 70% in the case of birds

Factories of suffering

- ‘50s global food production boomed -> overproduction of grains
- Creating of AFO (Animal Feeding Operations) and CAFO (Centralised Animal Feeding Operation)
- Animals forced to live in very small spaces
- Their waste put into lagoons, sometimes get sprayed on the fields
- 80% of antibiotics are used on animals

Hunger Games

- More than 820 million chronically undernourished
- 2 billion faces serious food insecurity
- 1 billion obesed – 350 million children –
- Enough food for 10 billion
- Most of the hungry are rural poor
- Should we increase the food production?
- Hunger is not a question of production but of distribution

The „Green“ „Revolution“

- From 1950s new technologies into third world countries
- New kind of wheat – Norman Borlaug 1970 Nobel Peace Prize
- In the ‘60s and ‘70s production increased
- Required a lot of patented seeds, water, fertilisers, pesticides
- Soil get depleted, biodiversity disappeared, people got sick
- Prices and revenues decreased, farmers got indebted
- Farmers, mostly men went to the cities
- The global flow of agriculture changed

A world of corn

- 45% of USA plant production is corn
- Used for
  - Feeding animals
  - Bioethanol
  - In every third product
  - HFCS
- Cola conspiracy
- 1975 Richard Nixon introduced a new subsidization system
- Production increased, prices fell

In Defense of Food

- Are we still an agricultural society?
- Distance from food
- What can we do?
  - Engage with food
  - Grow food
  - Speak about the issues
  - Buy from local farmers
  - Decrease your foodwaste, organise foodsharings
  - Go Vegan
- Need systematic changes

Food Sovereignty

- Small-scale farmers can produce in sustainable ways
- They are endangered
- Land can be an investment -> become expensive -> Reclaim the Fields
- La Via Campesina (The peasant‘s way) 200 million members 81 countries
- 1996 Food Sovereignty
  - prioritizing local agricultural production in order to feed the people, access of peasants and landless people to land, water, seeds, and credit.
  - the right of farmers, peasants to produce food , the right of consumers to be able to decide what they consume
  - the right of Countries to protect themselves from too low priced agricultural and food imports.
  - agricultural prices linked to production costs : they can be achieved if the Countries or Unions of States are entitled to impose taxes on excessively cheap imports
  - the populations taking part in the agricultural policy choices.
  - the recognition of women farmers’ rights, who play a major role in agricultural production and in food.

“Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems. It puts those who produce, distribute and consume food at the heart of food systems and policies rather than the demands of markets and corporations. It defends the interests and inclusion of the next generation. […] Food sovereignty prioritises local and national economies and markets and empowers peasant and family farmer-driven agriculture […], and food production, distribution and consumption based on environmental, social and economic sustainability.“

Declaration of Nyéléni, the first global forum on food sovereignty, Mali, 2007

Agroecology

- One way how we can change our food system
- Sees farms as ecosystems
- Promotes biodiversity instead of chemicals
- Scientific discipline, set of practices, movement
- Higher yields
- Knowledge and labour intensive
- No strict rules
- “centers on food production that makes the best use of nature’s goods and services while not damaging these resources”.
- Improving soil quality, help store carbon in the soil
- Successes in every part of the world