

It's Not Easy Being Green



Second Agricultural Revolution



- *Would move agriculture beyond subsistence to generate the kinds of surpluses needed to feed thousands of people working in factories instead of in agricultural fields*
- ***Great Britain's Enclosure Act:*** *encouraged field consolidation into large, single-owner holdings*
- *New technologies thanks to Industrial Revolution (ex: seed drill, mechanical reaper)*



Understanding the Spatial Layout of Agriculture

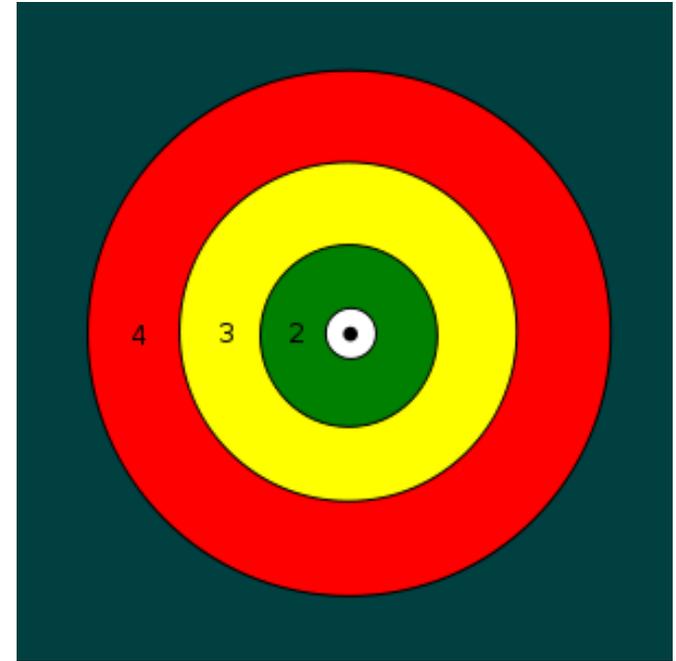
- *Farmer Johann Heinrich von Thünen: As one moved away from the town one commodity or crop gave way to another*
- *↑distance to market = ↑the higher the transport costs had to be added to cost of producing a crop or commodity*
- *Even when agricultural production does not conform to the concentric rings of Von Thünen's model, his underlying concern with the interplay of land use and transportation costs frequently still explains agricultural patterns*



The von Thünen Model



- Black dot: urban center/market center for commerce and trade
- White ring: dairy production; simple market gardening (fruits and veggies) - perishable items should be produced right near the central market, so they don't spoil on their way to be sold/traded
- Green ring: forests, for firewood and building materials - wood is heavy, so it's located close-ish to a central market to cut down on transportation costs
- Yellow ring: grains and field crops - humans love grains, but since they're light and relatively easy to transport, it can be grown farther away from a marketplace
- Red ring: ranching/livestock raising - VT theorized that since animals have legs and can walk themselves places, livestock farmers could live quite far from the central market



Third Agricultural Revolution

- *Industrialized agricultural practices not accessible everywhere*
- *Fear of hitting Malthusian limit before 2000 → starvation!*
- ***Ester Boserup***: *Danish scientist - Never fear, Science is here!*
- ***Green Revolution 1940-1970***: *Use of biotechnology to create disease-resistant, fast growing hybrid seeds, particularly of staple crops such as rice and wheat*
- ***Norman Borlaug***: *developed high-yield varieties of three super popular grains: wheat, corn, and rice*
 - *1970 winner of Nobel Peace Prize*
- *Places like Asia especially benefited*



Criticism of the Green Revolution



- *Environmentalists - impacts of pollen dispersal from genetically modified plants and potential for disease-resistant plants to spur evolution of super-pests*
- *Large-scale **monocropping (growing one specific variety of crop)** can make farms vulnerable to changes in climate or infestation of particular pests*
- *Higher inputs of chemical fertilizers, herbicides, and pesticides can lead to reduced organic matter in the soil and to groundwater pollution*
- *Scientific American (2005) explains that the Green Revolution has done little to alleviate poverty in areas where most farmers still work small plots of land*
- *The need for capital from the West to implement Green Revolution technologies has led to a shift away from production for local consumers toward export agriculture*



New Genetically Modified Foods

- *Genetically modified organisms (GMOs)* are found in 75% of all processed foods in the United States
- *Pros: allow crops to grow in climates they normally couldn't, ability to pump foods full of extra vitamins/minerals*
- *Cons: can cause new food allergies and make our bodies less receptive to antibiotics, can lead to dangerous decrease in biodiversity and create virtually unkillable super weeds, lots of unknowns, ideological resistance*
- [Bill Nye - GMOs](#)
- [9 Strangest Genetically Modified Products](#)



Regional and Local Change



- *Shifts from subsistence agriculture to commercial agriculture have had dramatic impacts on rural life*
- *Dramatic increases in the production of export crops have occurred at the expense of crop production for local consumption.*
- *Environmental, economic, and social changes have affected local rural communities*

The Impacts of Agricultural Modernization on Earlier Practices

- *Subsistence farming continues to be common practice in Africa, Middle America, tropical South America, and parts of Southeast Asia*





HuG It Out



Many arguments have been raised about the impacts of the **Green Revolution**, both pro and con. How might the scale (local, national, international) at which the Green Revolution is examined affect the arguments that are made about it? What types of factors are likely to be considered if the question is, “has the Green Revolution been good for Asia” as opposed to “has the Green Revolution been good for a village or a particular agricultural community in India?”