

Lecture 11 – Agriculture

1. Worldwide Trends in Agriculture
2. Agriculture and Global Warming
3. The Green Revolution
4. Trends in Meat Consumption

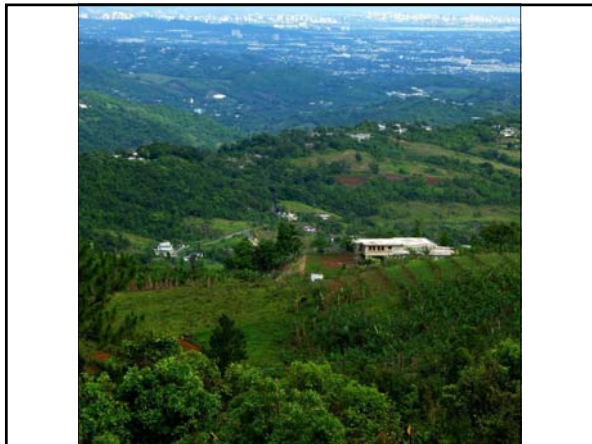
Key Concepts

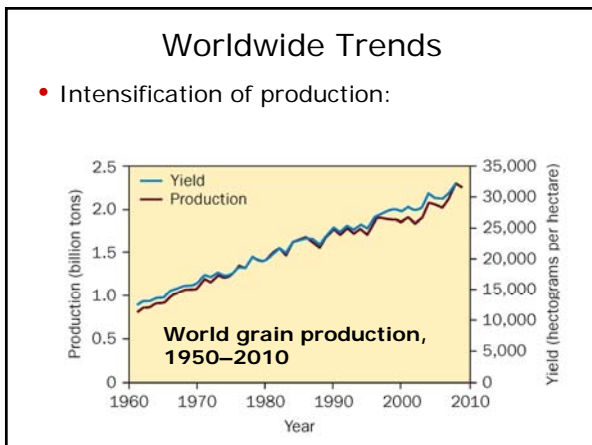
- Worldwide trends in food production
- Impacts of global warming; consequences of alternative fuel sources
- Problems associated to the Green Revolution
- Rise in the use of GMOs
- Agriculture as an ecological process; use of biocides
- Meat consumption and the livestock revolution

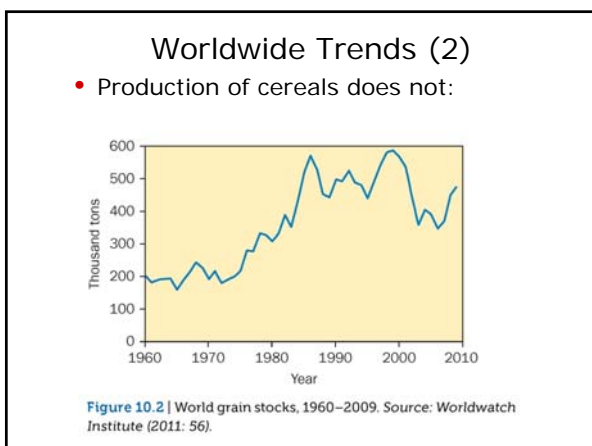
1. Worldwide Trends in Agriculture

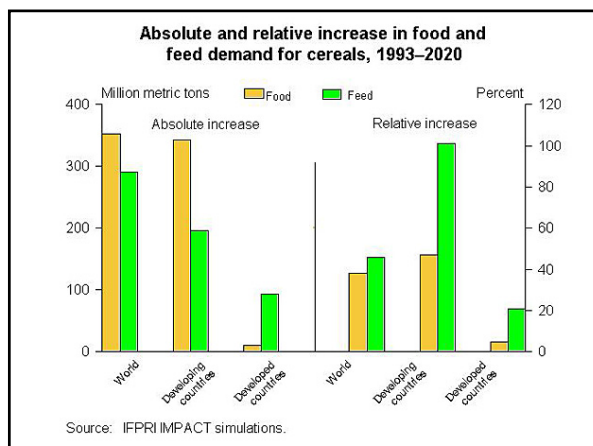
- Between 1700 and 1950:

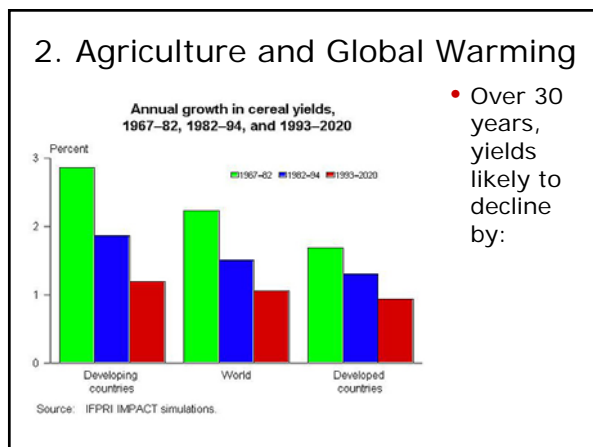


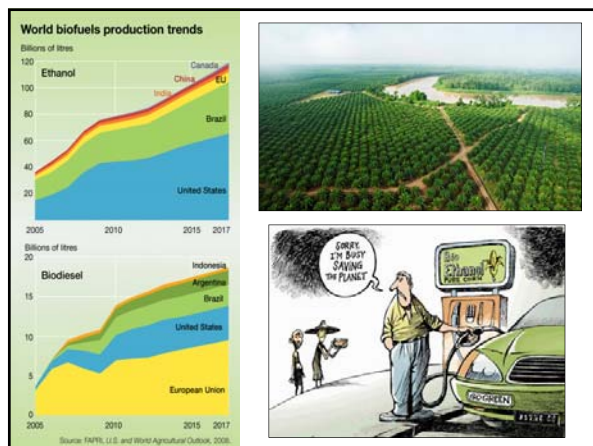












3. The Green Revolution

- Global production of wheat and rice dramatically increased



The Green Revolution (2)

- 1st Green Revolution:
- 2nd Green Revolution:



Depletion of Nutrients: a Problem

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Irrigation

- 70% of freshwater withdrawals
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Genetically Modified Organisms

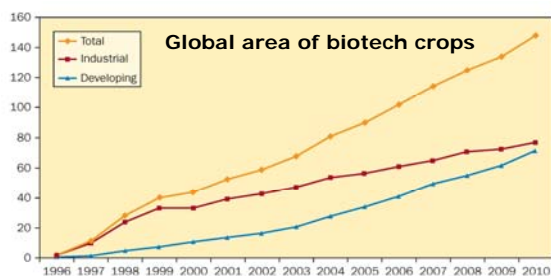


- 'Miracle seeds' =



Why use of GMOs?

- Because yields achieved through conventional agricultural techniques will:



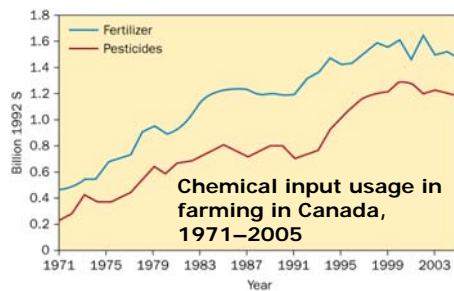
Agriculture as an Ecological Process

- Subsistence Farming:
- Less energy-intensive



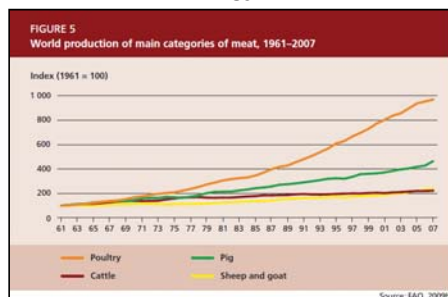
Rise of the Chemicals

- Fertilizers and biocides:



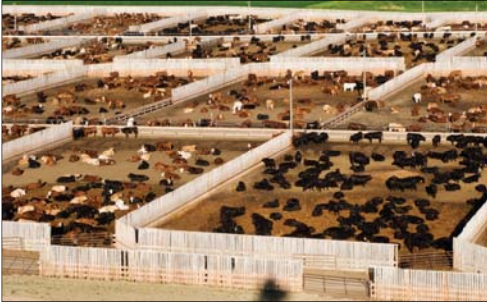
4. Trends in Meat Consumption

- Eating at the:
- Not an effective energy transfer



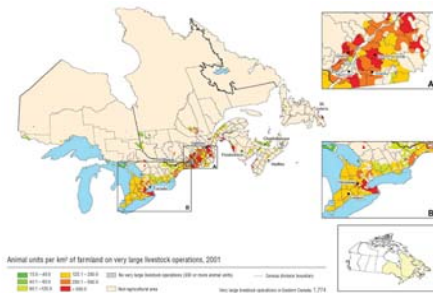
The Livestock Revolution

- Shift from family farms to:



The Livestock Revolution (2)

- Concerns over impacts of having so many animals:



Conclusion

- The lands under production, and the yields have greatly expanded since the dawn of agriculture
- Agriculture has become increasingly industrialized in Canada
- Many of the practices that support Canada's agriculture have substantial environmental impacts
- These changes are also due to a gradual change in the global human diet, which tends to less energy-efficient and include more and more on meat

Things to Consider

1. Relatively few farms in Canada are currently practising organic agriculture. Do you think this practice will become more common in the future? Why or why not?
 - What are the costs and benefits of growing and consuming organic foods? How might these costs be mitigated?
2. Hunger is a daily reality for many people, despite the fact that the current global food supply could feed the world's human population.
 - What are the factors that have led to this discrepancy? What do you think Canada's role should be in addressing this problem?

TO DO!

1. Next lecture: Video: *e2 Transport: Food Miles*
3. Tutorials this week: Work session in preparation for Debates
4. Tutorials this week: Group Discussion; bring the "Group Discussion Answer Sheet"
5. Term Paper due Wednesday, Nov. 1, at 4:30 p.m. on A2L
6. Quiz 3 starts Monday at 10:00 p.m.
