

## Lecture 10 – Impacts of Agriculture

1. What are the major types of food production?
2. What have been the major changes in food production during the past 40 years?
3. What is the significance of the green revolution?
4. Do we have enough food globally?

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## Key Concepts

- Geographical distribution of the major types of food production
- Traditional agriculture and Industrialized agriculture
- Trends in Agriculture, over the past 50 years
- The Green Revolution and its impacts
- Trends in food availability, energy consumption, and the human diet

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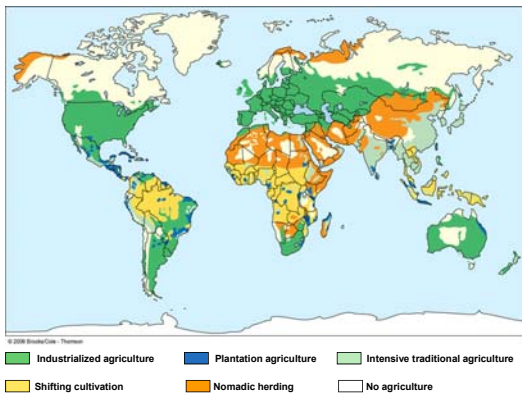
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1. What are the major types of food production?



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## Traditional Agriculture

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- Little labour and capital
- No energy demand




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2. What have been the major changes in food production during the past 50 years?




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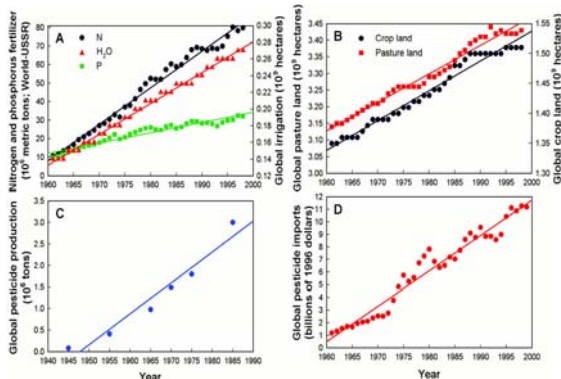
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## Increased Use of Land, Pesticides and Fertilizers




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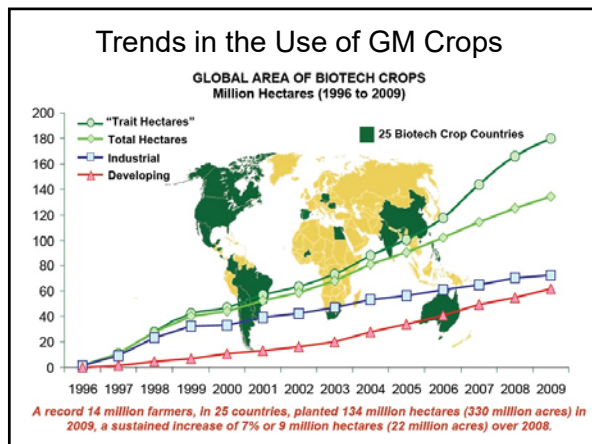
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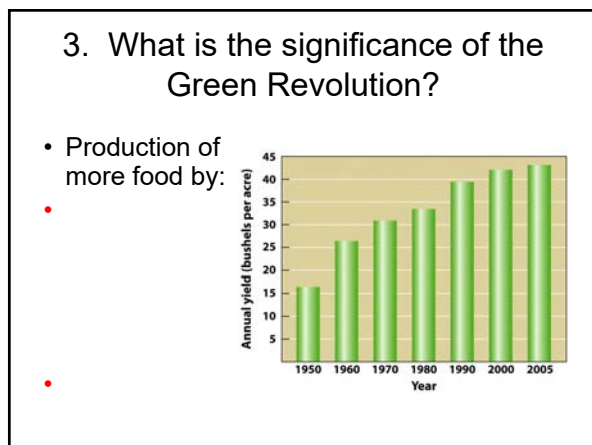
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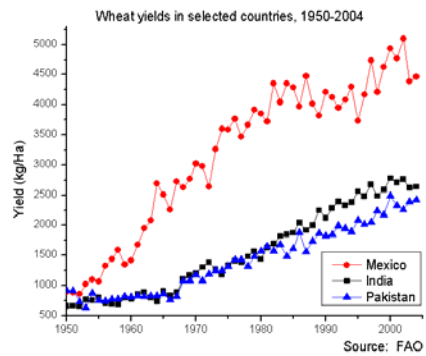
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## First & Second Green Revolution




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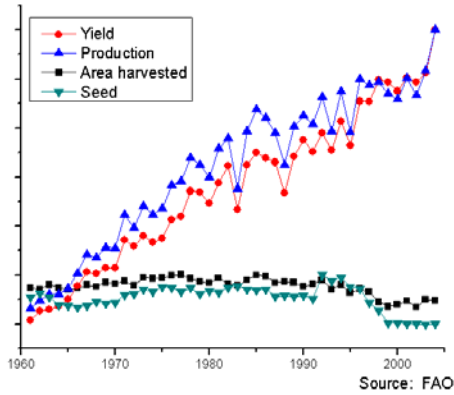
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Total world production of coarse grain, 1961-2004




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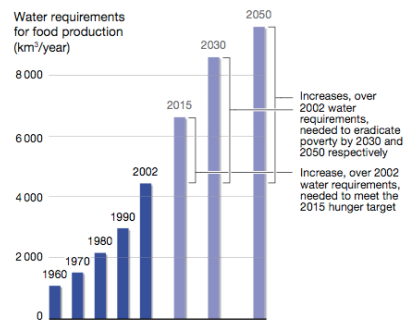
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## Agriculture and Water Demand




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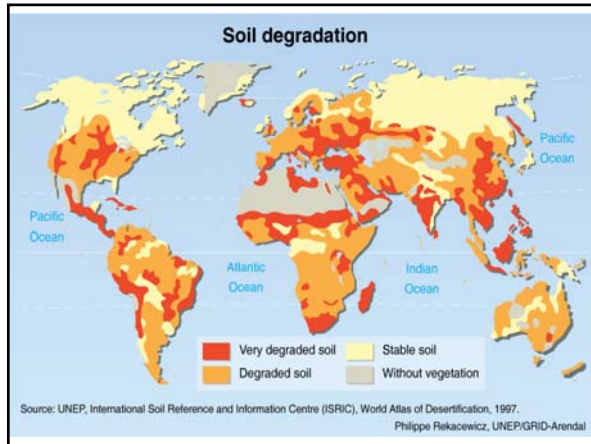
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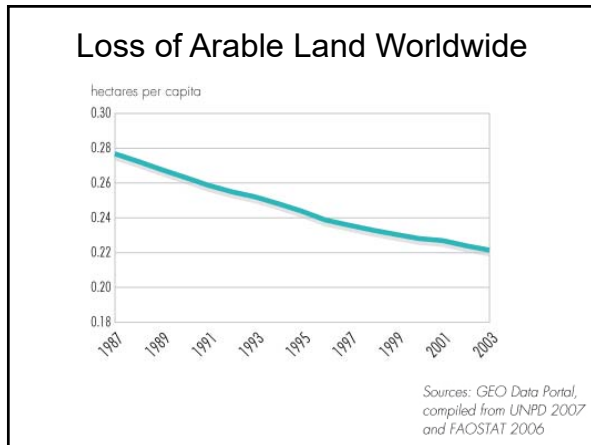
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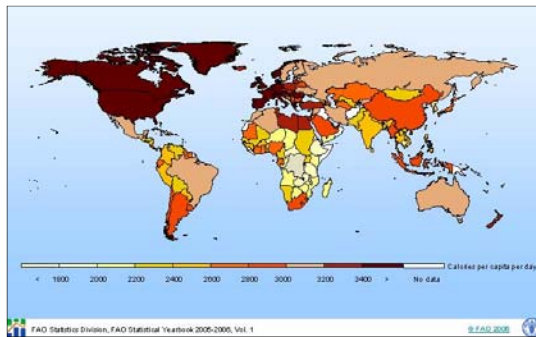
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## Dietary Energy Consumption




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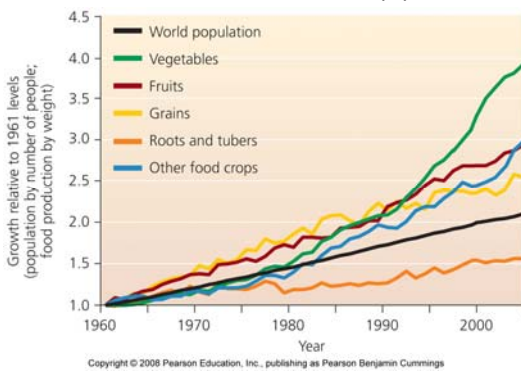
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## Food Production (1)




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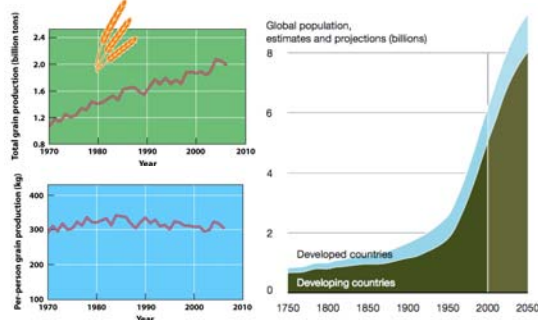
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## Why the slow down in the growth of world grain production per capita?




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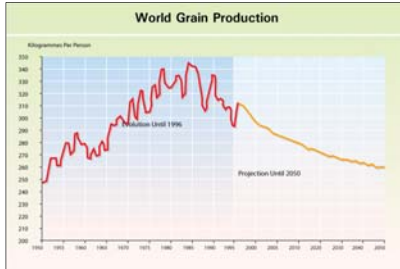
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### Is it a problem?

- To supply a 'meatless' diet, population growth requires:



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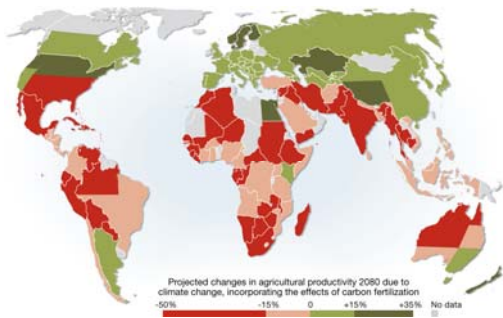
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### Agriculture and the Impacts of Climate Change



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### Conclusion

- The major types of food production vary greatly in terms of the resources they require, from small family-owned farms to industrial-size productions
- The Green Revolution has produced more food by hectare, by relying on the use of new varieties of crops, monocultures, irrigation, and abundant use of fertilizers and biocides
- This has also been accompanied in the shift, in the world's diet

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### Things to Consider

- Given that the Green Revolution has increased crop yields, but only by using increased fertilizers, pesticides, irrigation, and hybrid seed, do you consider it a success?

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### TO DO!

1. Next lecture: Chapter 10 in the textbook
2. Listen to Modules 9 and 10 on Agriculture
3. Tutorials **this week**: Introduction to Debates

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