Organic Livestock
Good or Bad for the Climate?

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Introduction

- **Emissions from livestock production make up 18% of global anthropogenic greenhouse gases**

- **Enteric fermentation from ruminants – methane**
- **Manure – methane and nitrous oxide**
- **Feed production – methane, nitrous oxide and carbon dioxide**

- **Meat consumption predicted to double by2050**

Approaches to the problem

- **Intensify**
  - **increase production to meet demand**
  - **Productivity gains to reduce GHG intensity per kilo of meat or milk**

- **Organic**
  - **Challenge trends to actively reduce consumption**
  - **Low input system to reduce GHG intensity per kilo of meat or milk**

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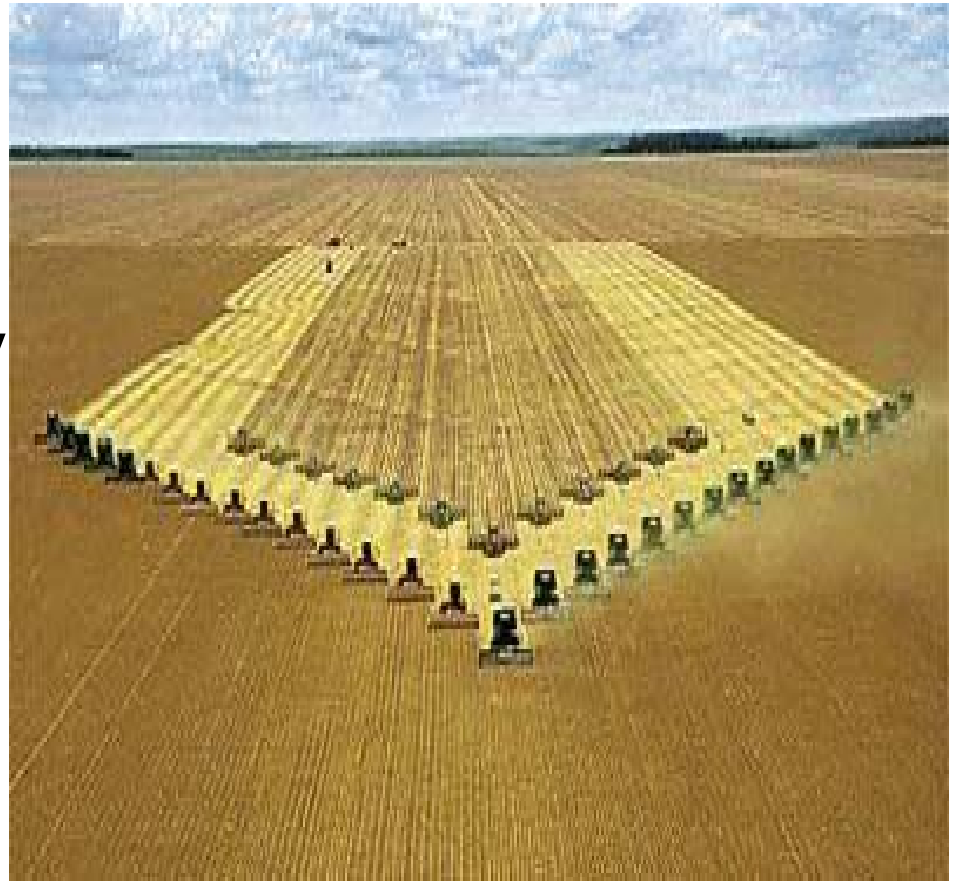
Climate change issues

- **Resource efficiency**
  - **Grain fed**
  - **Input costs and constraints**
- **Arable expansion to supply high-protein feed**
  - **Destruction of natural habitat**
  - **Carbon emissions as forests and grasslands cleared and ploughed**
- **Volumes of manure**



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Ruminants

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Grass or Grain?

- **Organic**
  - **Mainly grass fed**
  - **Outdoor system of grazing**
  - **Hay or silage when housed**
- **Non-organic**
  - **Increasingly grain fed**
  - **Move to indoor or 'feedlot' production**
  - **Problems of arable expansion for soya and**

Soil carbon

- **Unlike most arable farming, grassland can build large stores of carbon in the soil**
- **Grazing makes use of land for food production while maintaining these carbon sinks**
- **Well managed grazing has potential to speed up soil carbon sequestration**
- **Climate change adaptation as well as mitigation**

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Methane

- **Manure 15%, Enteric Fermentation 85%**
- **Manure – organic around 50% lower**
- **Enteric fermentation – organic slightly worse than non-organic**
- **Counterpoints**
  - **Dairy replacement rate**
  - **Clover/legumes in the diet**
  - **Methanotrophic soil bacteria**

Conclusions

- **Current high levels of livestock production are unsustainable**

- **Productivity-based intensive approach flawed**
  - **Predicated on feeding high-input grains**
  - **Does not factor in impending resource constraints**
  - **Ignores animal health and welfare limits**

- **Organic approach is based on ecological constraints**
  - **Less meat produced**
  - **Low input, high welfare**

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Conclusions continued

- **Resource efficiency - make use of what animals are good at to meet twin goals of feeding ourselves & reducing climate impact**

- **Produce only grass fed meat and dairy**
  - **Clover ley in organic rotations**
  - **Uplands unsuitable for crops**
  - **carbon-rich permanent pastures to preser**

- **Produce pigs and poultry on:**
  - **Waste and by-products, not purpose grow**

- **Minimum resource input, minimum climate impa**

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Thank you for listening

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