



# Fruit, vegetables & greenhouse gas emissions

1 December 2005

Food Climate Research Network

Tara Garnett

# This presentation

2. What is the FCRN and what are its aims?
4. Why is the food sector an issue for GHGs?
6. Fruit, veg & GHGs: a quick overview
8. Purpose of this seminar & action following

# Food Climate Research Network

Research and promote ways of achieving absolute reductions in GHG emissions from the whole UK food chain

Bring together different disciplines & sectors to benefit from  
Range of perspectives and expertise

- UK research council funded – 3 years
- Based at University of Surrey
- 270 members: Govt, industry, NGO & research institutes

# FCRN aims

- **Highlight** the food – GHG problem
- **Link** technological & behavioural approaches
- **Explore solutions** for the system-as-is AND alternative food systems
- **Gain** from the different perspectives and knowledge of the different members
- **Show connections** between the apparently unconnected
- **Stimulate** the necessary research

# Outputs

1. **A mapping study:** What do we know? What don't we know? What are the research priorities?
2. **A series of working seminars:** To inform mapping research: *this is the second*
3. **Website:** With food/GHG related research
4. **Networking:** To catalyse further research
5. **Conference:** To report findings

## 2. Food and GHGs: the problem

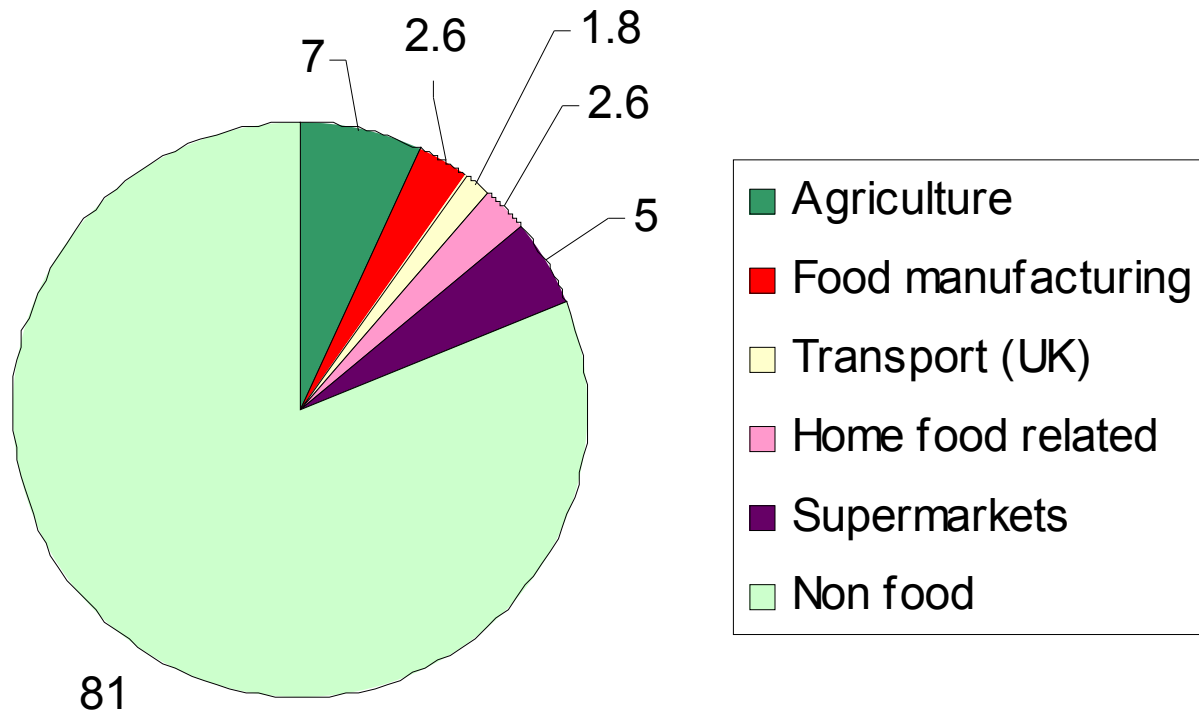
- EU level analysis: 31% total GHG emissions
- Food in the UK: over 20% total GHG emissions
- Dutch study: 15% total carbon emissions
- US study: 10% total energy use
- Full basket of GHGs very important for food: CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> plus refrigerant emissions

### 3. Where are the hotspots?

Two ways of approaching the question:

- d. By food life cycle
- e. By food type

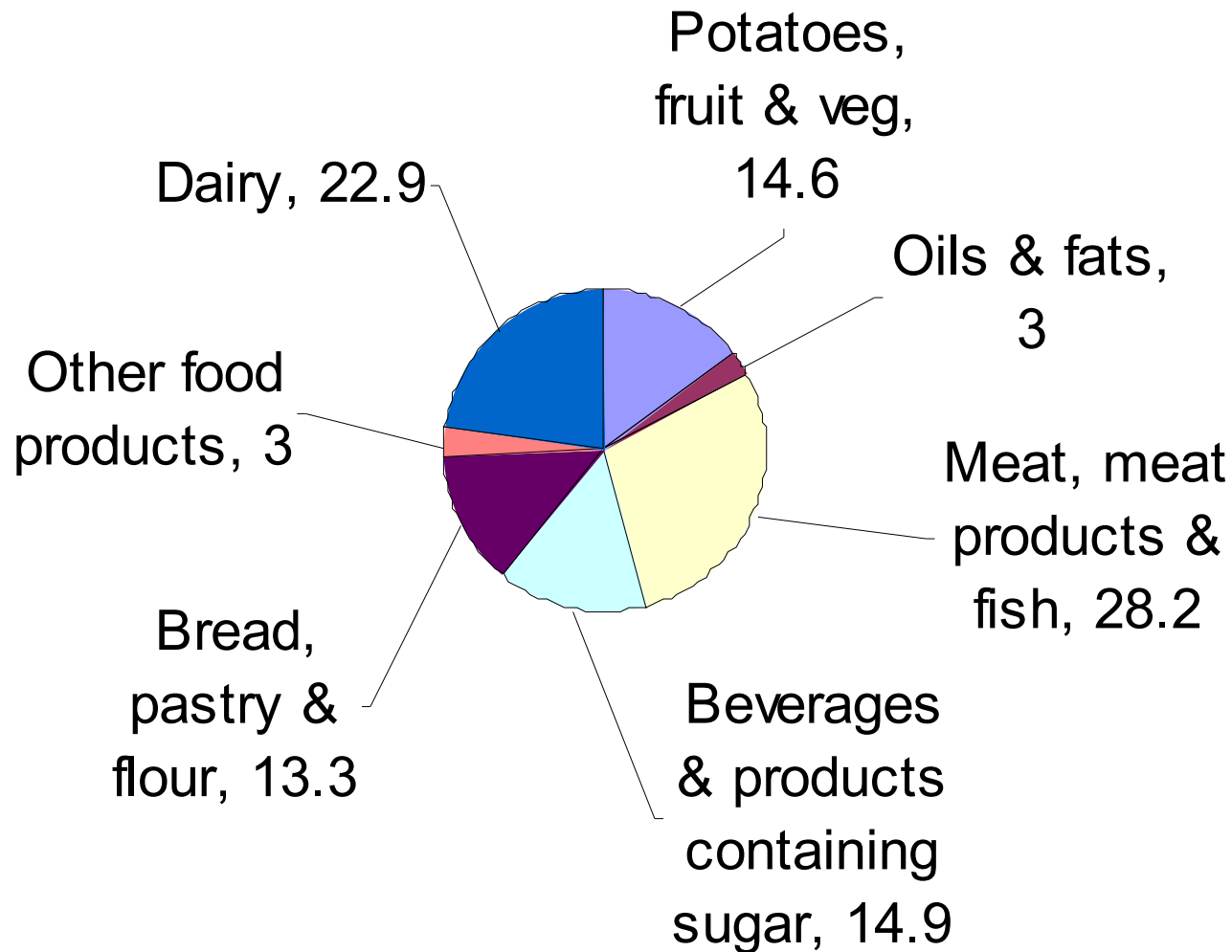
# a. Hotspots by life cycle (imports not included)



## b. Hotspots by food sector

- It's not just food miles / refrigeration / cooking
- It's also about the balance of foods on our plate:
  - \* Meat & dairy
  - \* Cereals and carbohydrates
  - \* Fruit and vegetables
  - \* Fats
  - \* Sugars
  - \* Beverages

# Contribution of food groups to Dutch GHG emissions KG/CO<sub>2</sub>e



# 3. Fruit and veg: briefing paper

Out early New Year.... Explores:

- Trends in production & consumption (fruit vs veg, mediterranean style vs UK trad, chilled/prepared vs. loose, canned, frozen, imports vs home grown)
- Where the critical impacts lie in the chain (life cycle approach)
- Highlights the most GHG intensive fruits and vegetables (food type approach)
- Options for reduction (technological & consumer related)

# General overview

- Agricultural stage less significant except for protected crops. But overseas???
- Ditto cooking (relative to other foods)
- Refrigeration, transport poss. critical points
- Ditto waste
- Trends going in the wrong direction – air freight, prepared fruit & veg, the ratatouille syndrome, larger fridge sizes
- Lots of little impacts add up... Total?

# Options for reduction - technological

- Cold storage efficiencies
- Waste reduction in agriculture & processing
- More CHP & renewables in protected cropping
- Eliminate air freight – road or sea
- Europe rather than beyond
- Don't let fridges get bigger

# Scope for reduction - consumer?

- Seasonal AND indigenous AND field grown
- Whole versus pre-prepared (although waste trade off?)
- Eat what you buy
- Know transport MODE not just C.o.O (Pakistan vs Brazil)
- Different purchasing / storage patterns?
  
- Trade-off with health??

# Purpose of this seminar

## KNOWLEDGE BASE

- What collectively do we know?
- What are the connections?
- What don't we know and what ought we to?

## SCOPE FOR REDUCTION

- Technological improvements: What more can be done?
- Consumer behaviour: scope for change?

## OUTPUTS

- Seminar outcomes to inform paper → inform mapping study.
- Presentations on FCRN website *unless you say no*.
- New research proposals?

OPENNESS & LATERAL THINKING – *Please talk freely!*

# Joining the FCRN

## Food Climate Research Network

Contact: Tara Garnett

[taragarnett@blueyonder.co.uk](mailto:taragarnett@blueyonder.co.uk)

020 7686 2687

[www.fcrn.org.uk](http://www.fcrn.org.uk)