

How large are the emissions from Swedish food consumption today and in 2050?

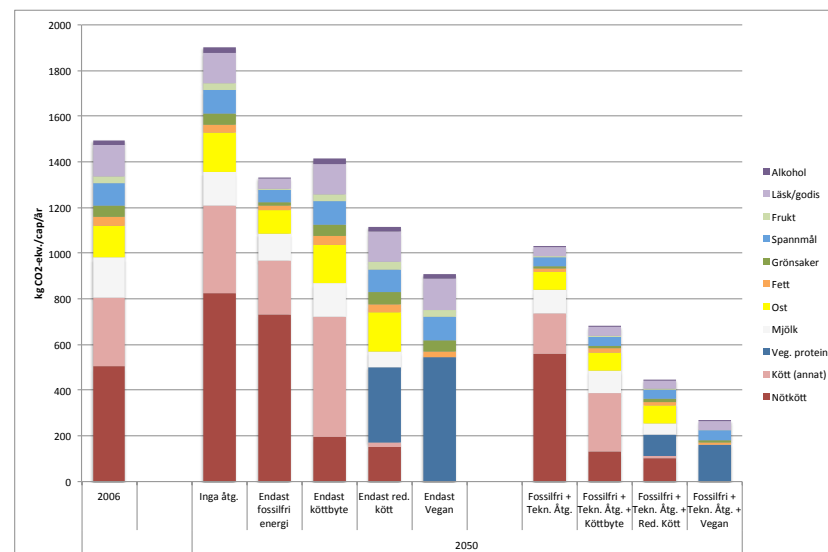
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Physical Resource Theory

Energy and Environment

CHALMERS



Scenarier för klimatpåverkan från matkonsumtionen 2050

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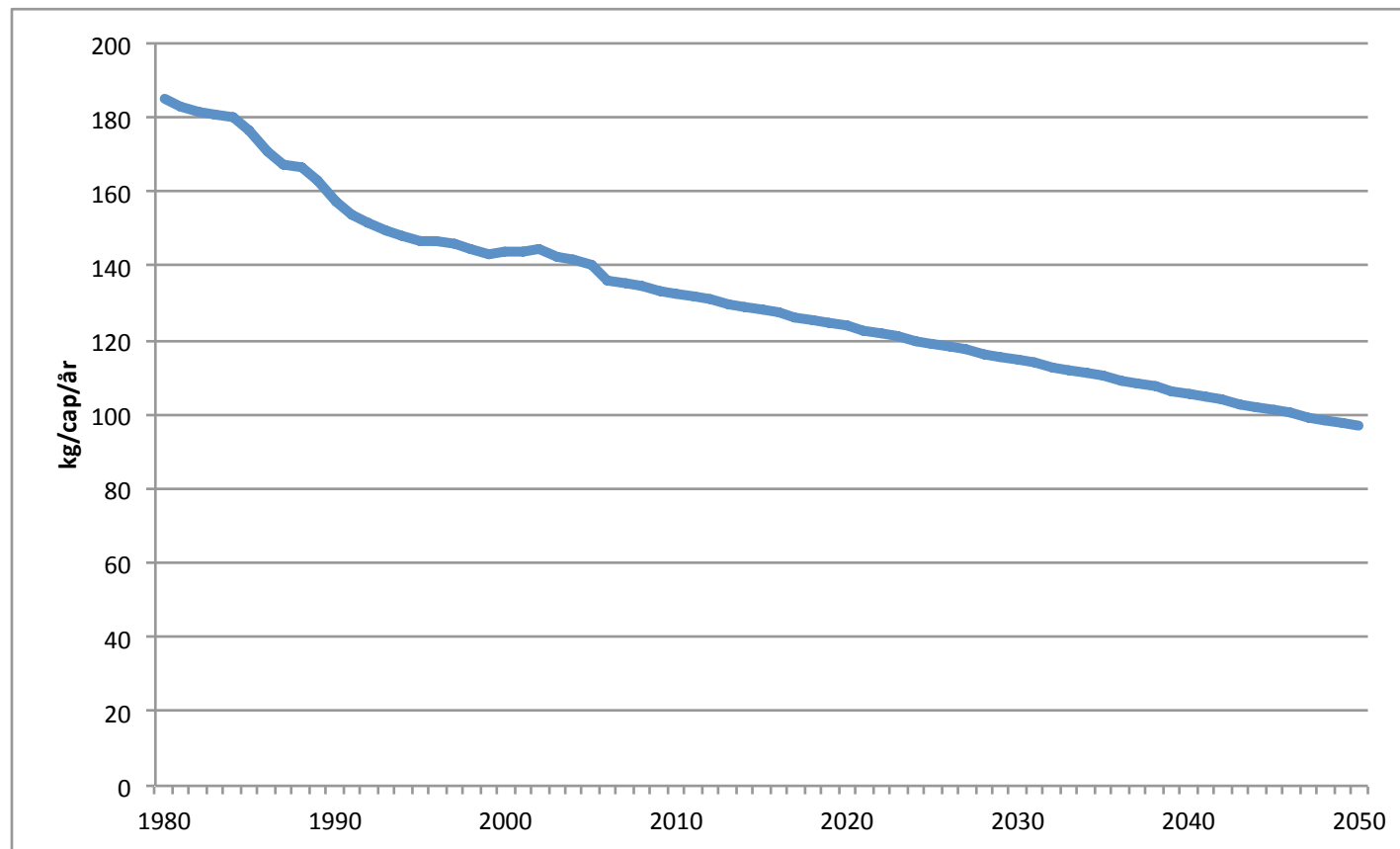
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 Avdelningen för Fysisk Resursteori
 Institutionen för Energi och Miljö
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 Göteborg 2013
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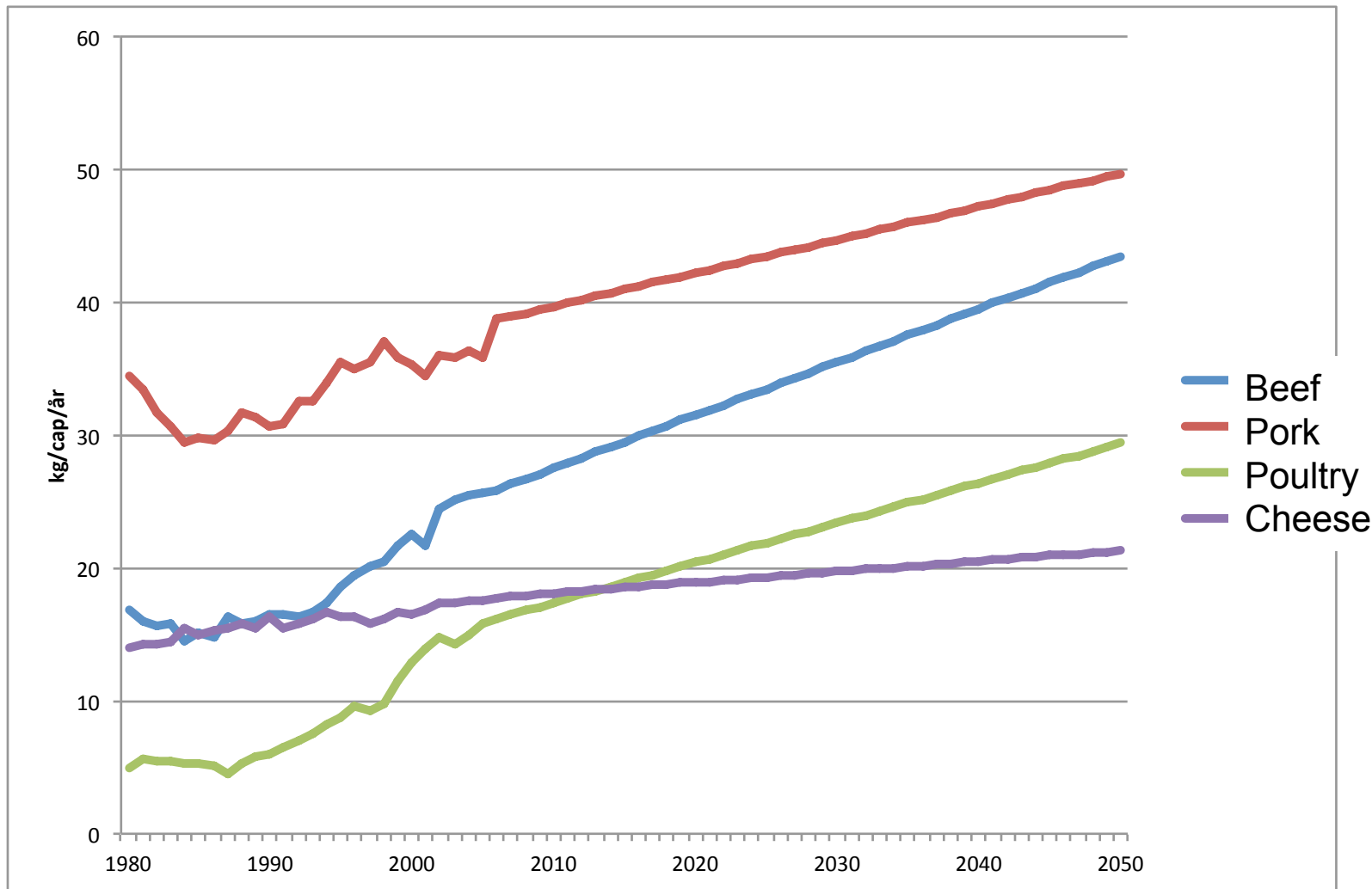
Dietary options and emission intensities



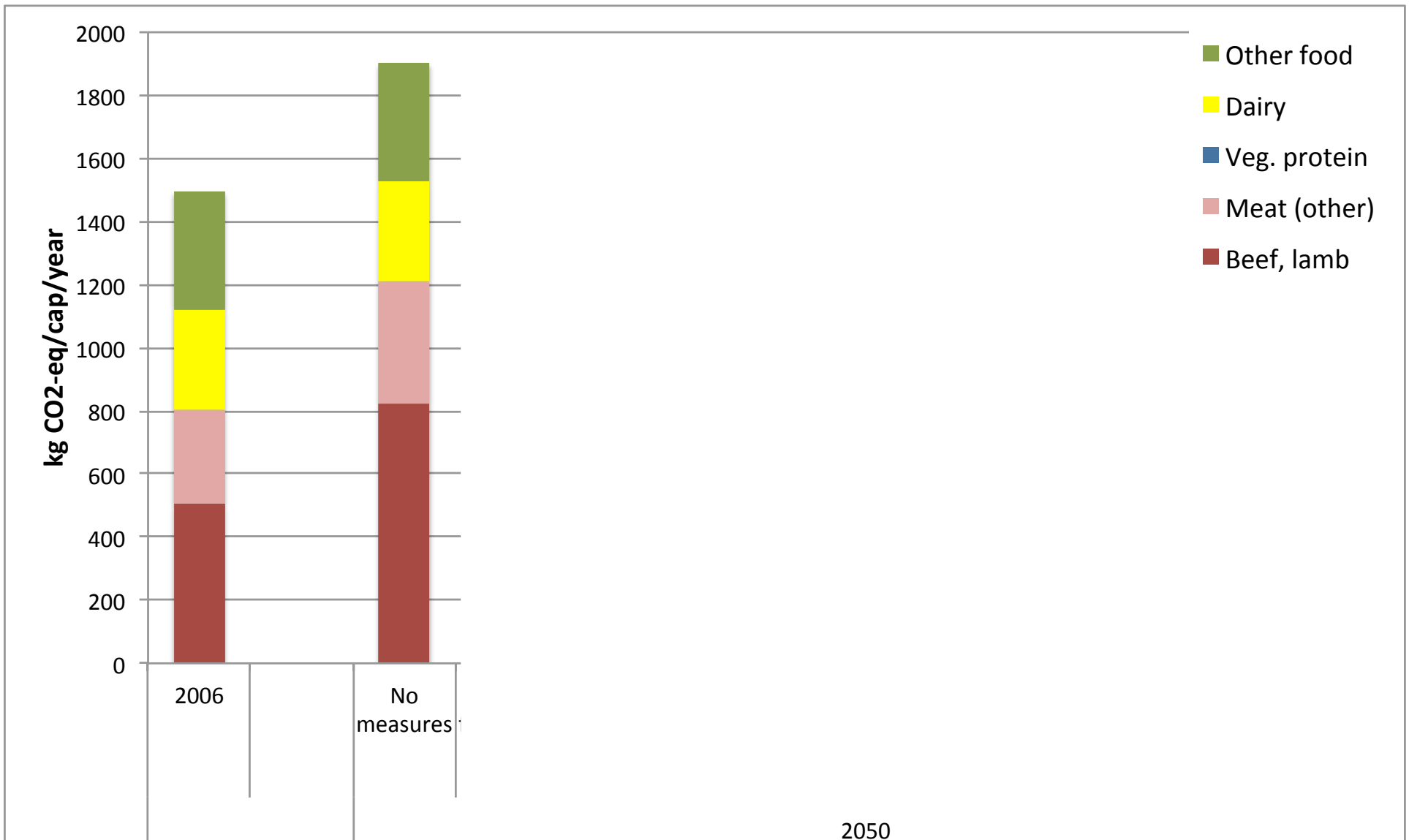
Milk consumption 1980 – 2050



Meat consumption 1980 – 2050



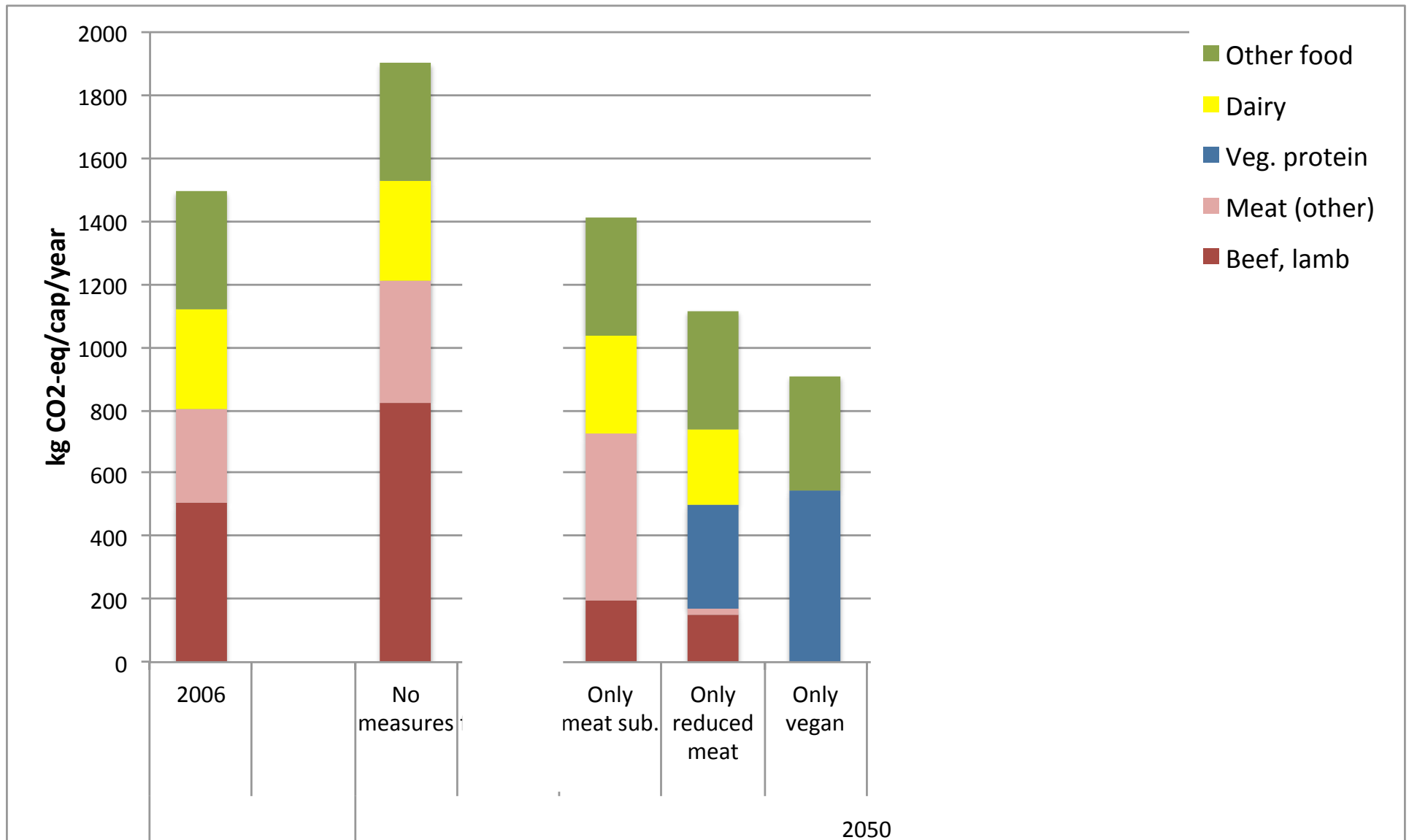
Dietary options and emission intensities



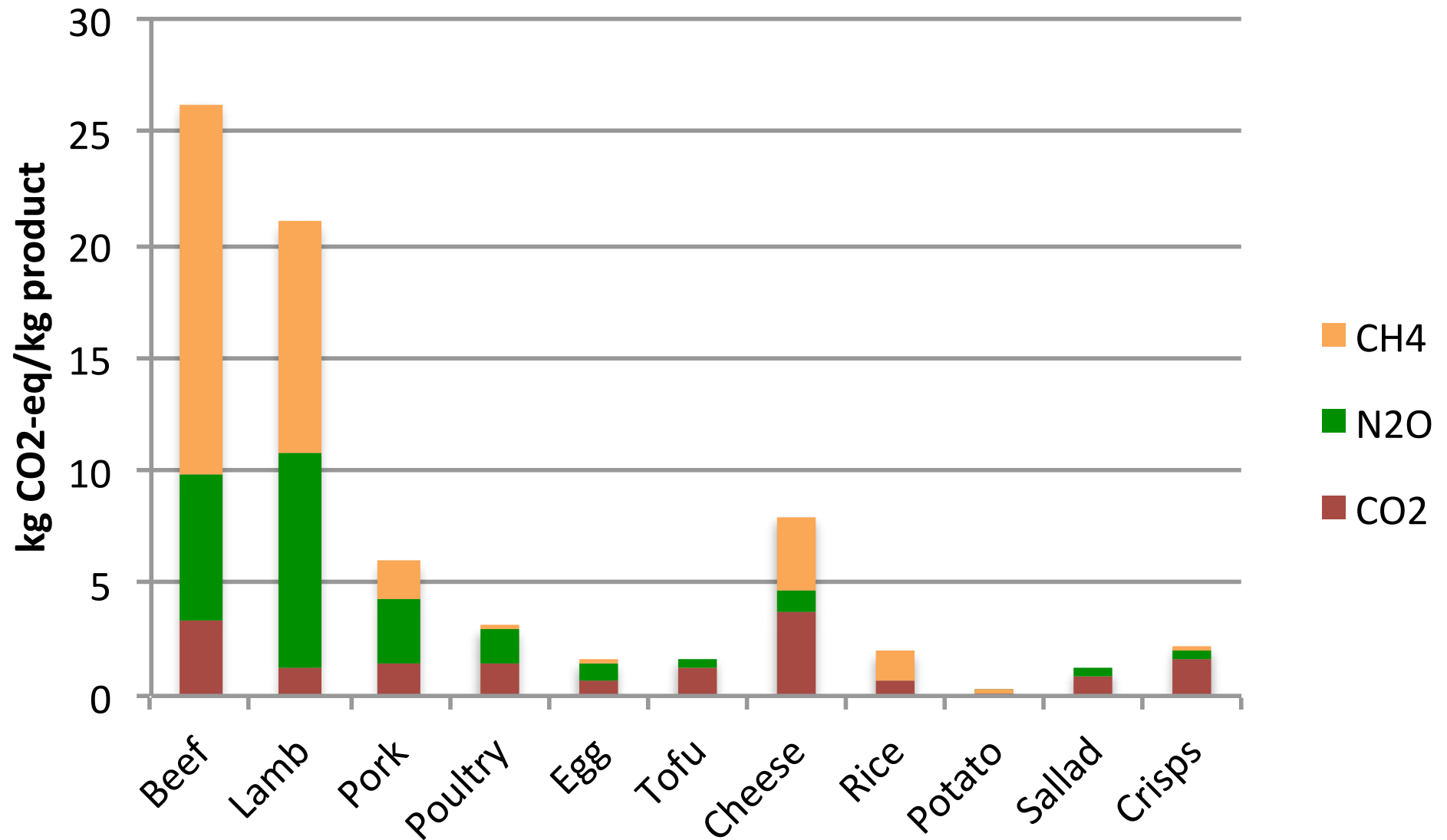
Four different diets

- No measures
 - trend extrapolation
- Intra meat substitution
 - Beef and lamb are replaced with pork and poultry
- Reduced meat
 - Some meat is replaced with vegetable protein
- Vegan
 - All protein is supplied from vegetarian sources

Dietary options and emission intensities



Emission intensity, Today



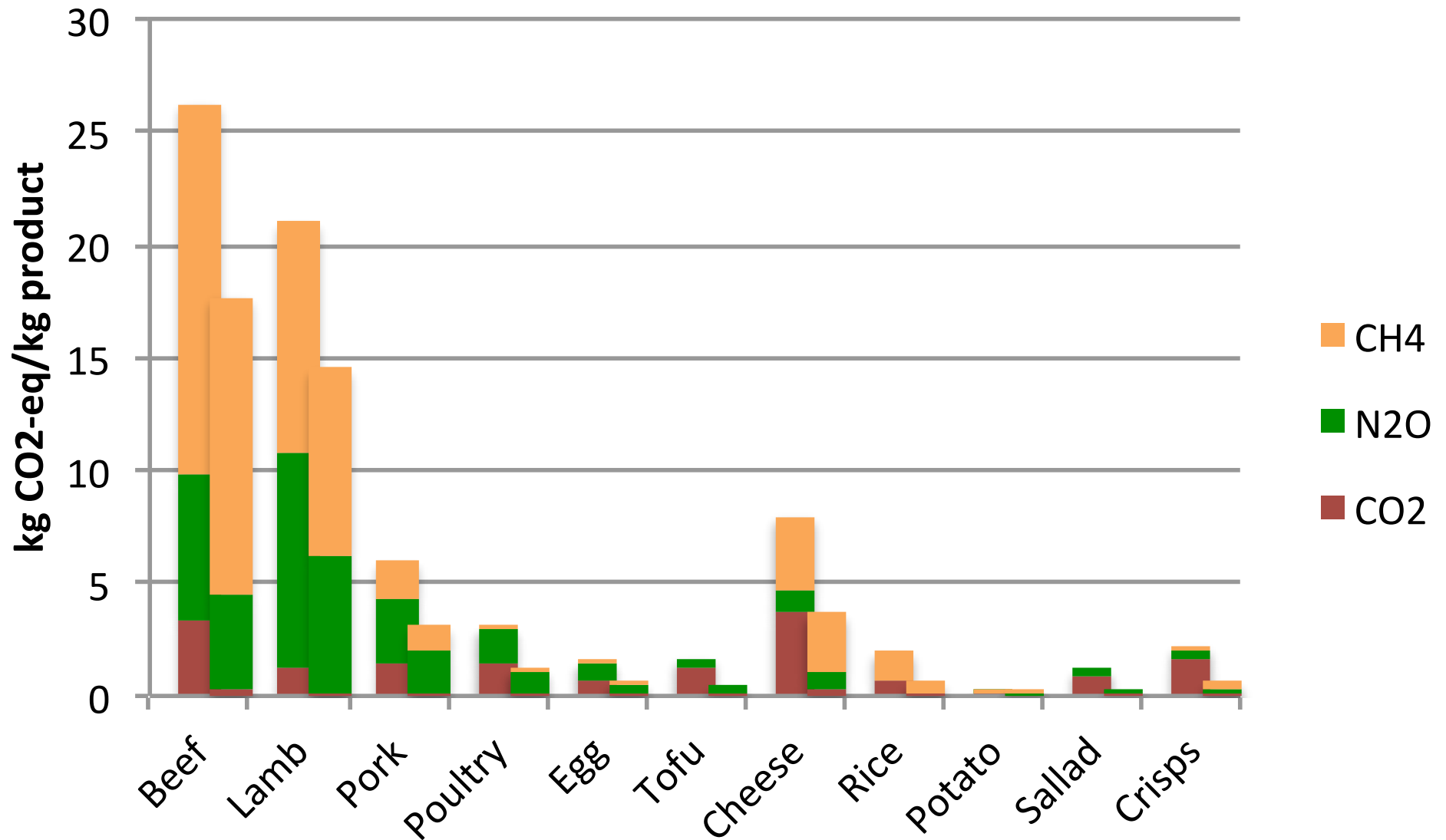
Technical mitigation (1)

- CO₂ reduced with 90 %
 - Stationary sectors: - 100 %
 - Heavy transport and agricultural machinery: - 80 %
- Animal production: 10 % improved efficiency from fodder to product
- CH₄ from rumination reduced with with 10 %
 - (cattle and sheep)
 - Addition of fat to the fodder

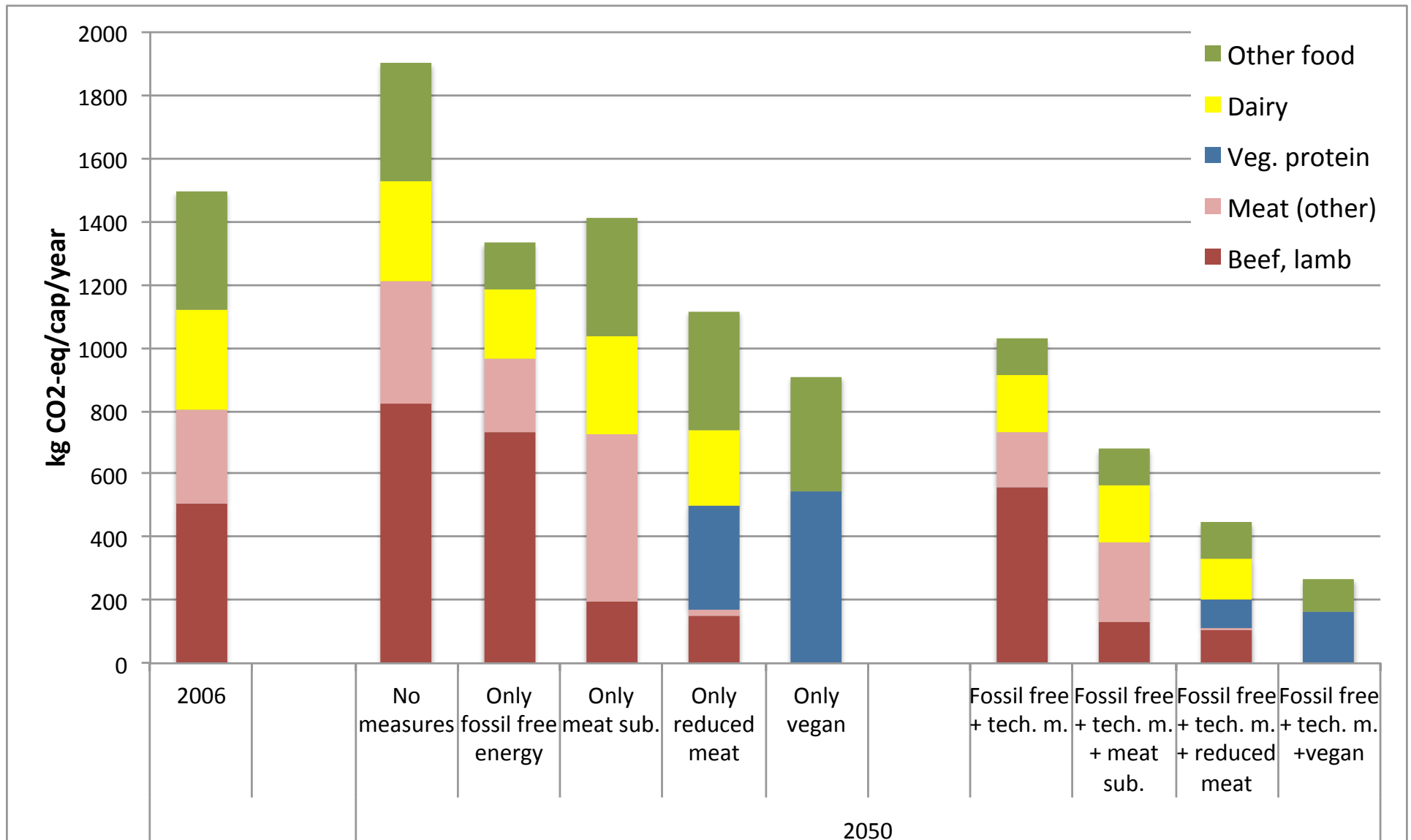
Technical mitigation (2)

- CH₄ from animal waste handling reduced with 50 %
 - Controlled decomposition and biogas production
- CH₄ from paddy rice production reduced with 40 %
 - Draining of rice fields
 - Difficult to get policies in place in other countries
- N₂O from fertilizer production reduced with 90 %
- N₂O from fields reduced with 10 %
 - Optimized timing and dosage of application

Emission intensity incl. technical measures

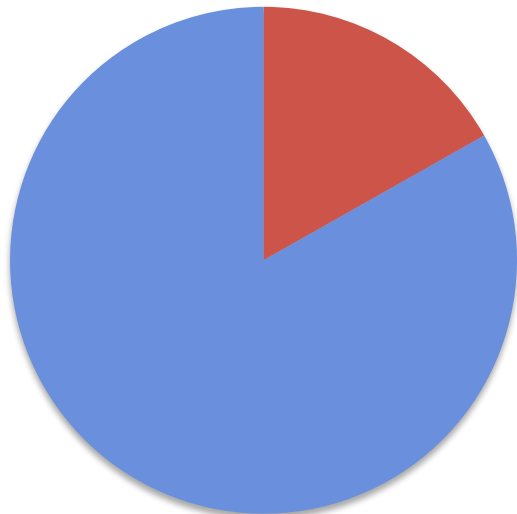


Dietary options and emission intensities



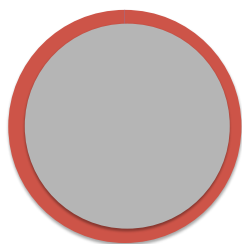
Emission space and food related emissions

2006
~ 9 ton CO₂-eq/cap/year

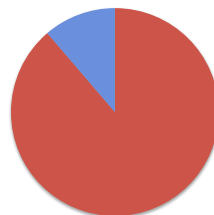


- Food related emissions
- All other sectors
- Emission space

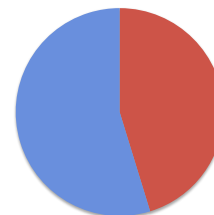
2050
1 – 2 ton CO₂-eq/cap/year



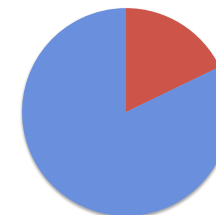
No measures



Techn. measures



Techn. measures
+ meat subst.



Techn. measures
+ vegan

Referenser

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