



# Climate strategy for public food systems: data and tools

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# Project background

- In cooperation with Lyngby-Taarbæk municipality and DTU Science Shop
  - The project took its starting point in two production kitchens
    - Food to elderly people
    - 30 dishes
  
- Project objective
  - Develop tool to map the climate impact from the menus
  - Develop tool to reduce the climate impact
  - Map the climate impact from the food
  - Develop proposals for climate optimization of menus



# Data

- Background data from a Swedish project
  - Total lifecycle energy for 150 food items
  - Included in the calculations:
    - Transport, processing, storage and preparation
  - Different 'versions' of the same food item
    - Different origin and/or processing
  
- From energy consumption to climate impact
  - Conversion factor from Australian project applying Danish energy mix
  
- Adding contribution for non-energy related emissions (methane and NO<sub>x</sub>) (rice; cows etc.)



# Constraints in the optimization of food for elderly people

- Need to be energy rich food
- Ensure desire for food among the elderly
- Menus from earlier in their lives is important
- Fish is important due to n-3 fatty acids
- Easy to chew
- Lentils and rice is not good if denture



# Local data for menus

- Database developed in the project
- Data form the kitchens:
  - List with the distribution of the different menus over the year.
    - Was used to choose 30 representative menus.
    - Menus with different meat types and accompaniments was chosen.
  - Recipes on the 30 chosen menus



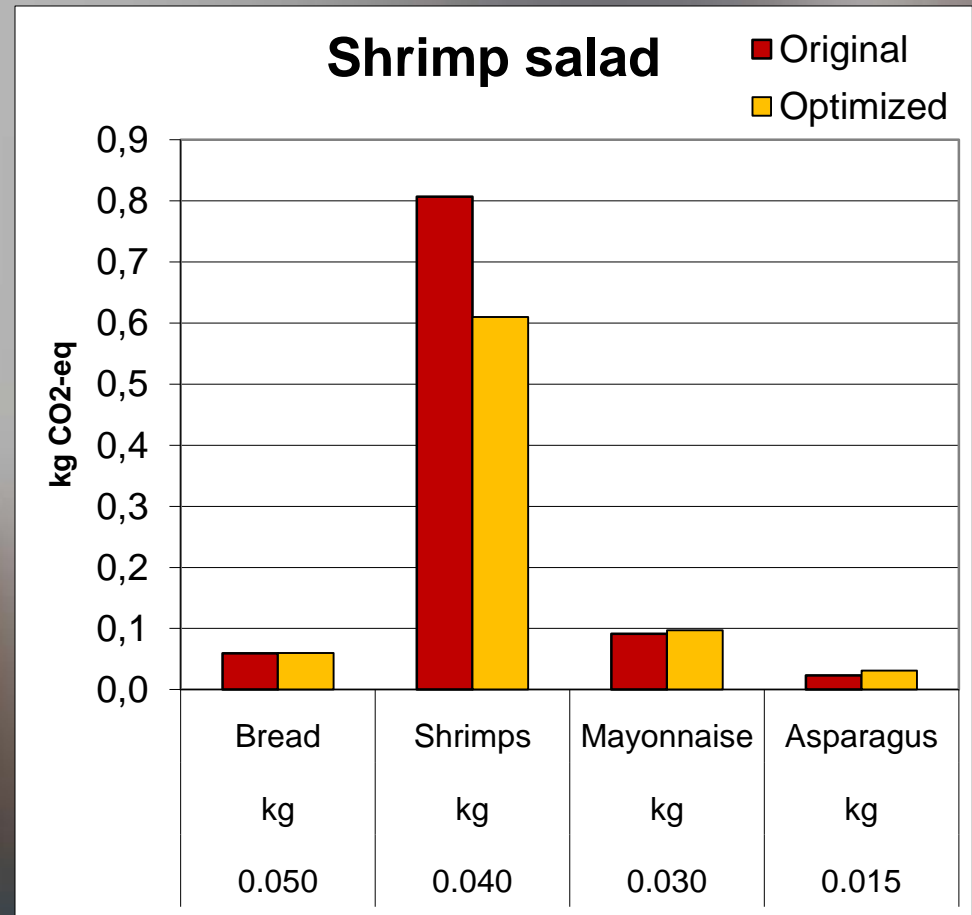
# Reduction proposals

- The overall CO<sub>2</sub>-eq. emission per year:
  - 578 ton CO<sub>2</sub>-eq pr. year
  - 14 % CO<sub>2</sub>-reduction proposed
- Optimization of single menus:
  - Partly substitution of CO<sub>2</sub>-intensive food items:
    - Meat => meat
    - Meat => vegetables
- Changing frequency of menus
  - E.g. shrimp salad => mussel salad



# Reducing CO<sub>2</sub> emissions from menus

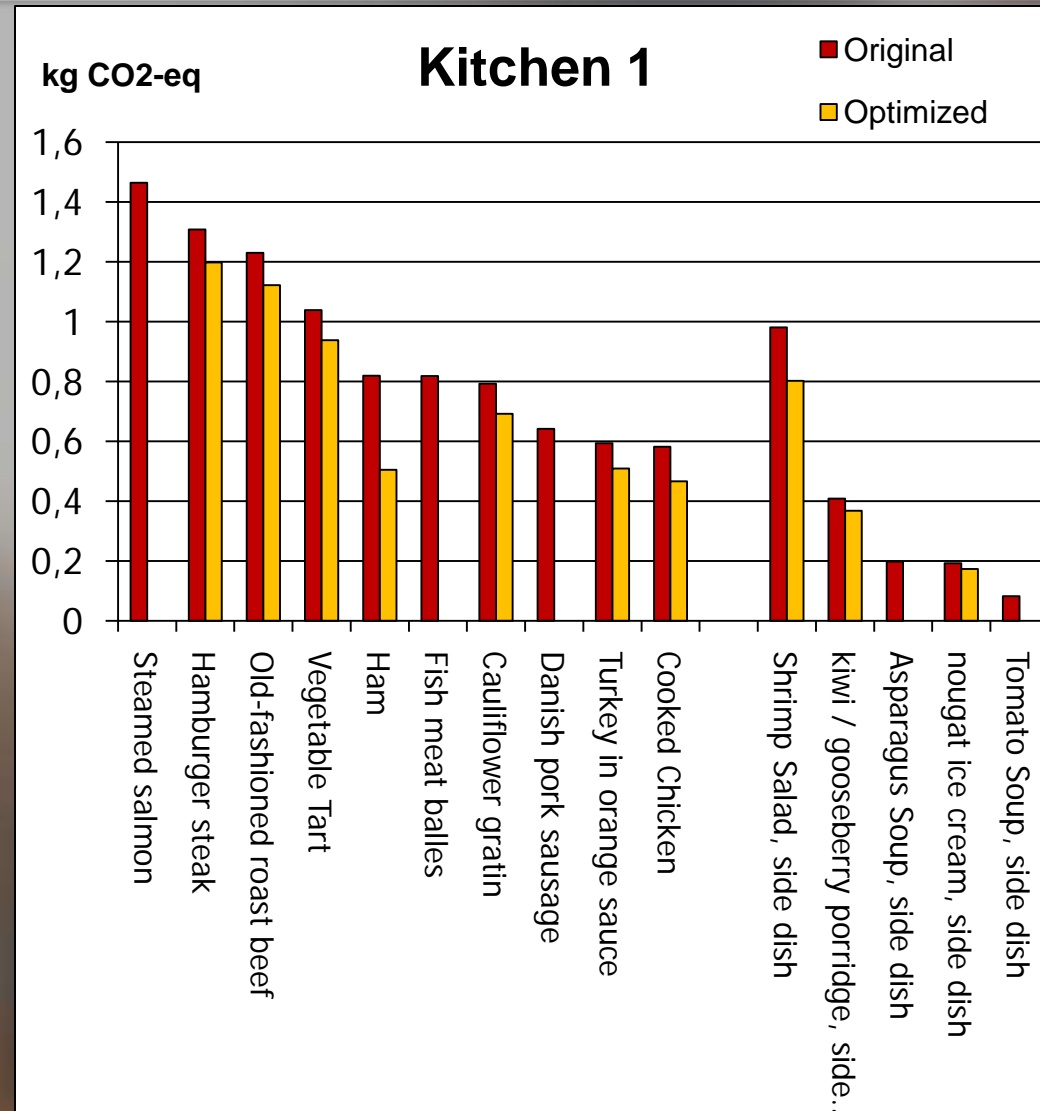
- Example: Shrimp salad
  - 0,98 kg CO<sub>2</sub>-eq.
  - 20 % CO<sub>2</sub>-reduction
  - Partly substitution of food items: shrimp => asparagus





# Optimizing the allocation of menus

- More dishes with poultry and pork and fewer dishes with beef
- More dishes with herring and mackerel, fewer meals with cod and shrimp

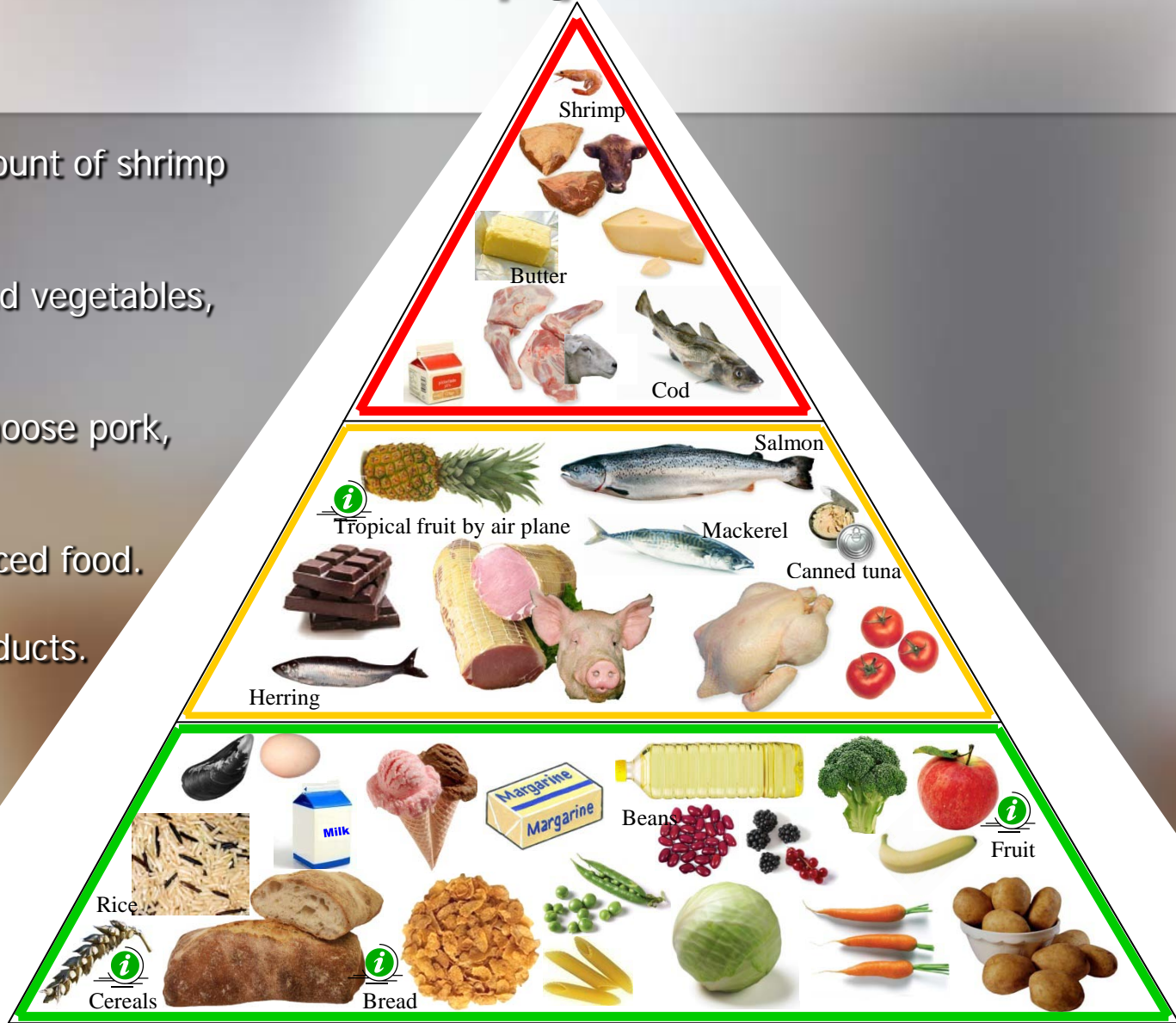




# Tools

- Database, as calculation tool.
- CO<sub>2</sub> pyramid as overview of substitution options.

# CO<sub>2</sub>-pyramid



Minimize the amount of shrimp and beef.

Eat more fruit and vegetables, less meat.

Of meat types choose pork, poultry and fish.

Eat locally produced food.

Eat seasonal products.

=Average of food group

0-2 kg CO<sub>2</sub>-eq. per kg

2-8 kg CO<sub>2</sub>-eq. per kg

8-20 kg CO<sub>2</sub>-eq. Per kg



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