Food losses in the Life Cycle of Lasagne Bolognese: ready-to-serve vs. home-made

Karin Flury[1]
Niels Jungbluth[1], Graham Houlder[2]

[1]ESU-services Ltd, Zürich
www.esu-services.ch
[2]European Aluminium Foil Association e.V. (EAFA), Düsseldorf

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Key questions

- What is better from an environmental point of view? Ready-made lasagne or home-made lasagne?
- How do the following factors influence the performance of both types of lasagne?
  - amount and type of food waste
  - energy consumption in production and preparation
  - efficient preservation vs. fresh ingredients

Important system boundaries

- Ready-made vs. home-made lasagne
- FU: Preparation of two portions (400g) of lasagne Bolognese ready to be heated in oven at home
- Same composition for both types of lasagne
- Ready-made packed in aluminium container, chilled
- Fresh ingredients: seasonal, conventional, regional

- Food waste data from Gustavsson et al. (2011), Kranert et al. (2012), Lorrayne (2008) and industry data

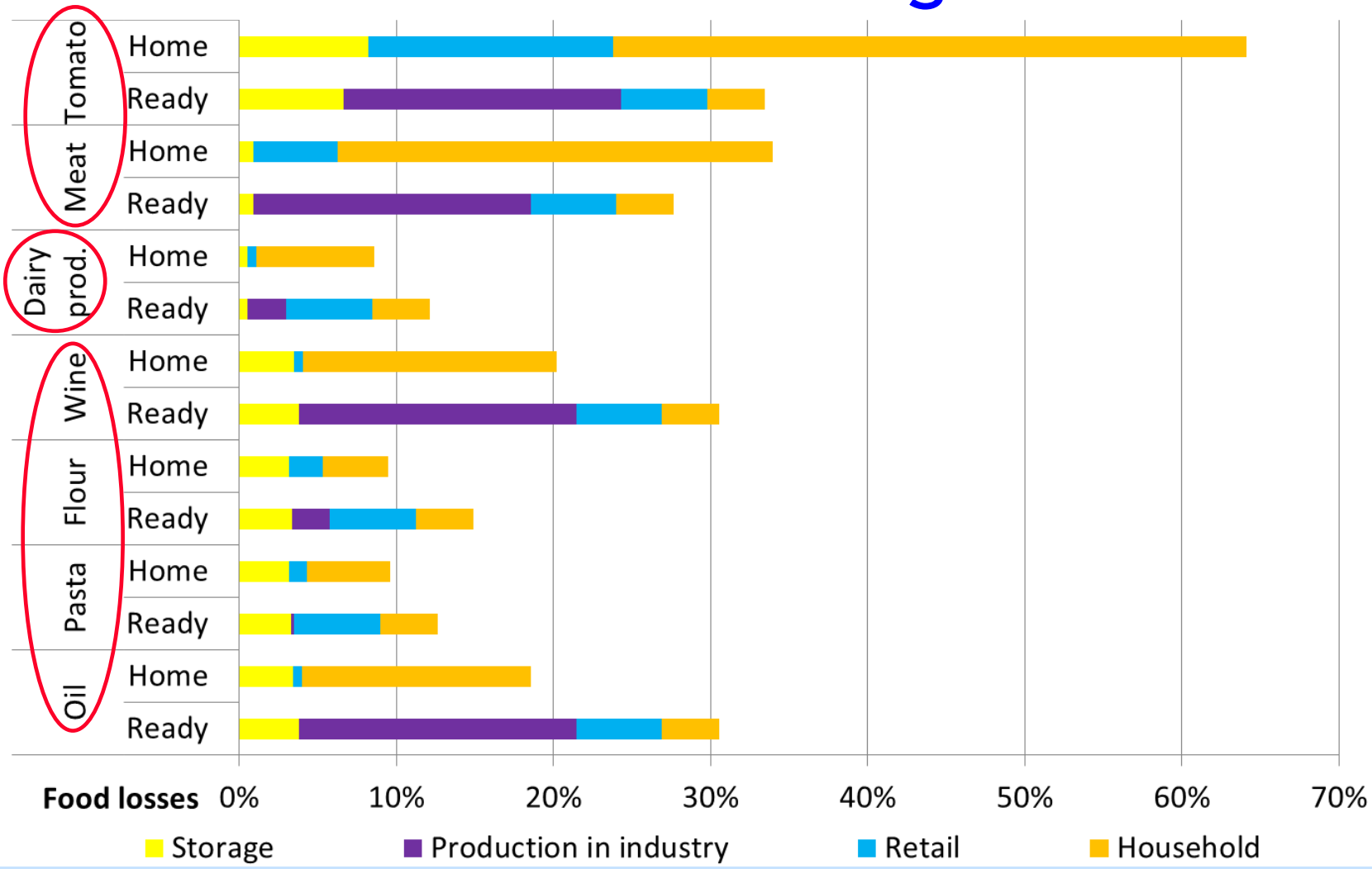
Challenges and points of discussion

- Is it possible to compare home-made and ready-made lasagne as they have different functions?

  →How can we generally deal with slightly different functions in LCA?

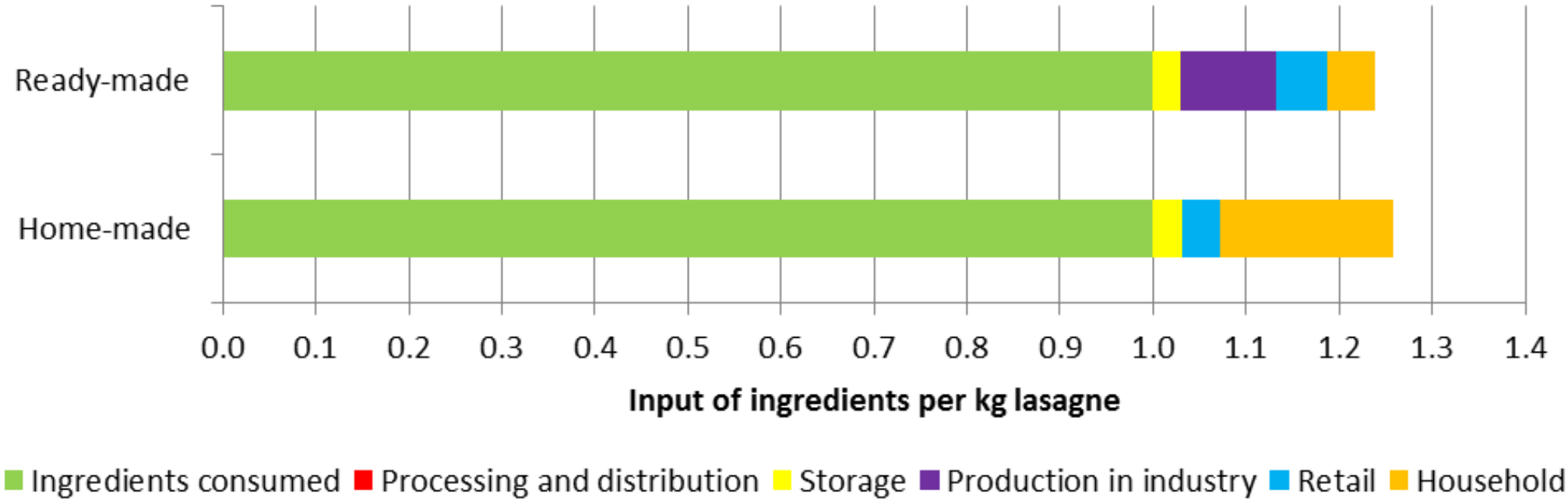
- How valid is a portion size of 400g for both products?
- Can it be assumed that the left overs on the plate are the same due to the same portion size?

Losses of selected ingredients



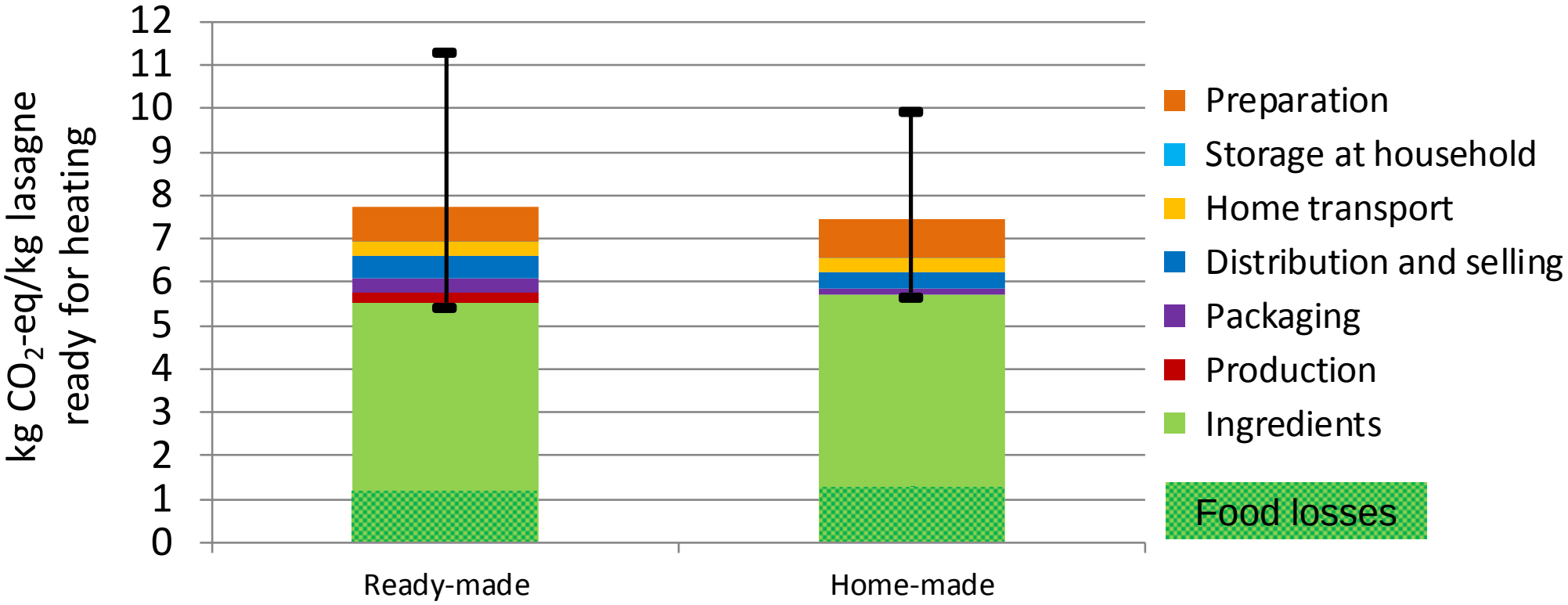
- Ready-made lasagne leads to more food losses for conservable ingredients

Food losses



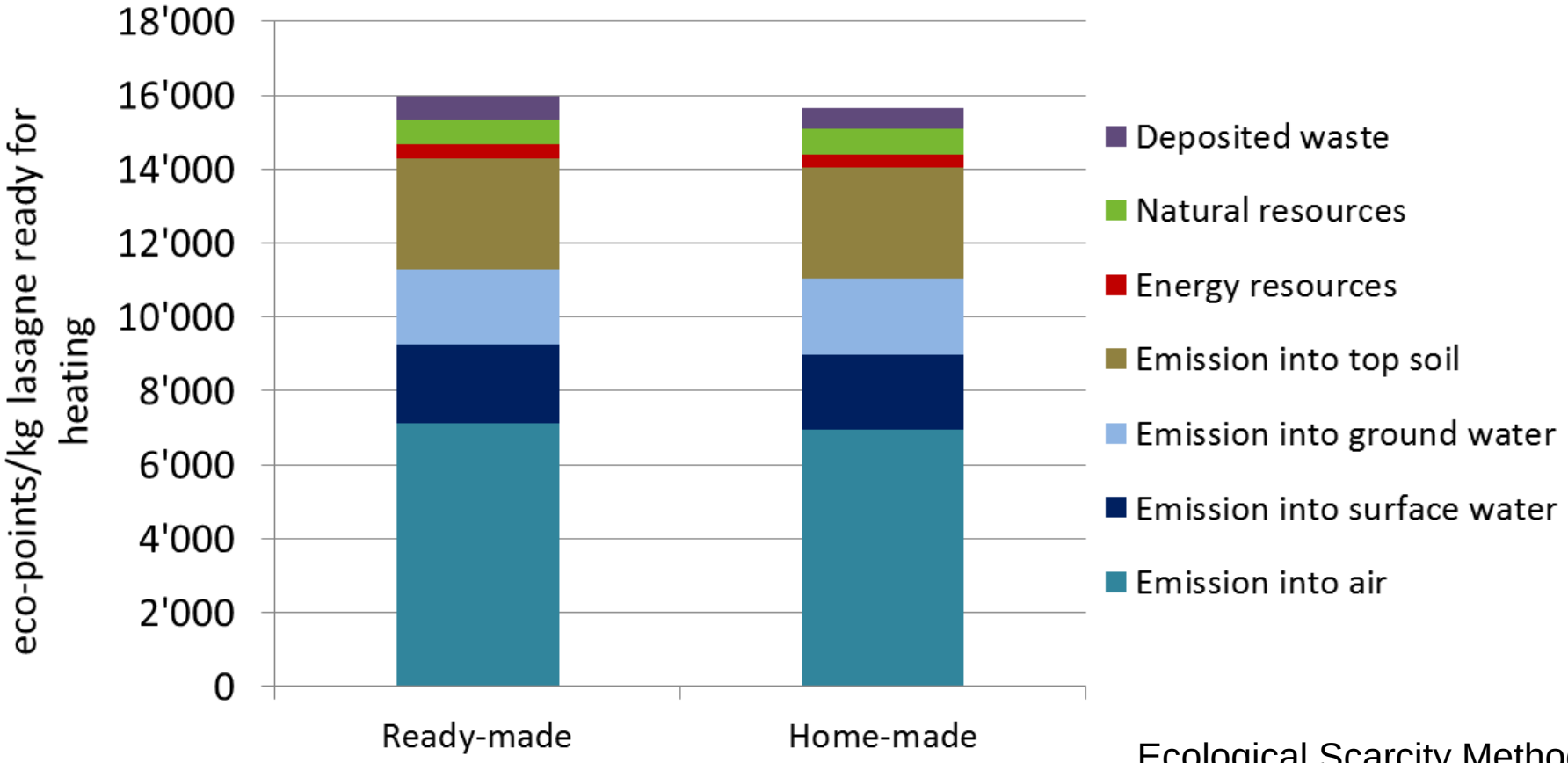
- Total about the same (24% to 26% losses from farm to oven)
- Differences in the life cycle stages

Greenhouse gas emissions



- Total GHG emissions about the same
- High uncertainties
- Main differences in distribution, production and preparation

Total environmental impacts



Ecological Scarcity Method 2006

- Total environmental impacts are comparable
- Ingredients production is most important

Summary

- No clear ranking of losses or impacts is possible
- Ready-made lasagne leads to more food losses for conservable ingredients than home-made lasagne
- Differences not based on the food losses but on energy consumption for preparation and storage, packaging etc.
- Ingredients are most important

- Best case assumption for fresh ingredients → greenhouse production or ingredients from abroad worse impacts
- Function of both products is slightly different

General conclusions

- Food losses are important when considering environmental impacts of food consumption
- More and better data is needed in order to make detailed comparisons
- Avoidance of food losses can reduce costs and environmental impacts

Thank you very much for your attention

Executive summary :

www.esu-services.ch/projects/lcafood/waste/

Further information:

flury@esu-services.ch

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