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Bayreuth Center of Ecology  
and Environmental Research

# Can a regional diet be nutritionally healthy and environmentally friendly?

## A case study for Bavaria

**Alternet Conference, Gent, 16.06.2022**



<https://acurrie.me/wp-content/uploads/2014/11/eating-the-world.jpg>

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# How does this talk fit in ... the conference

<https://hamsterbacke-bayreuth.de/>



... relation to  
transformative  
change?



<https://wilderness-society.org/eu-agricultural-policy-cap-fails-to-protect-biodiversity/>



... relation to biodiversity?

How does this talk fit in ...



... with my PhD research?



<https://www.bchumanist.ca>



[https://ec.europa.eu/regional\\_policy/et/projects/austria/semi-natural-grassland-as-a-source-of-biodiversity-improvement](https://ec.europa.eu/regional_policy/et/projects/austria/semi-natural-grassland-as-a-source-of-biodiversity-improvement)

... the session topic: human-nature relations?



greenqueen.com.hk

**‘Doing food differently’: reconnecting biological and social relationships through care for food**

Dowler et al. (2009), *The Sociological Review*

## How does this talk fit in ...



*“The other things is that at the start of the summer – people see the sun early May, late April, and they think we’ve got salads down here, and we haven’t, we’ve got nothing [this is the hungry gap].”*

... the session topic: human-nature relations?

**BUT...**

**From where do we start?  
(in a “detached” context)**



**‘Doing food differently’: reconnecting biological and social relationships through care for food**

Dowler et al. (2009), *The Sociological Review*

Different diets (status quo vs. “ideal” ones)  
Globally vs. regionally sourced

Healthy Eating Index 2015  
(adapted, 10 indicators)



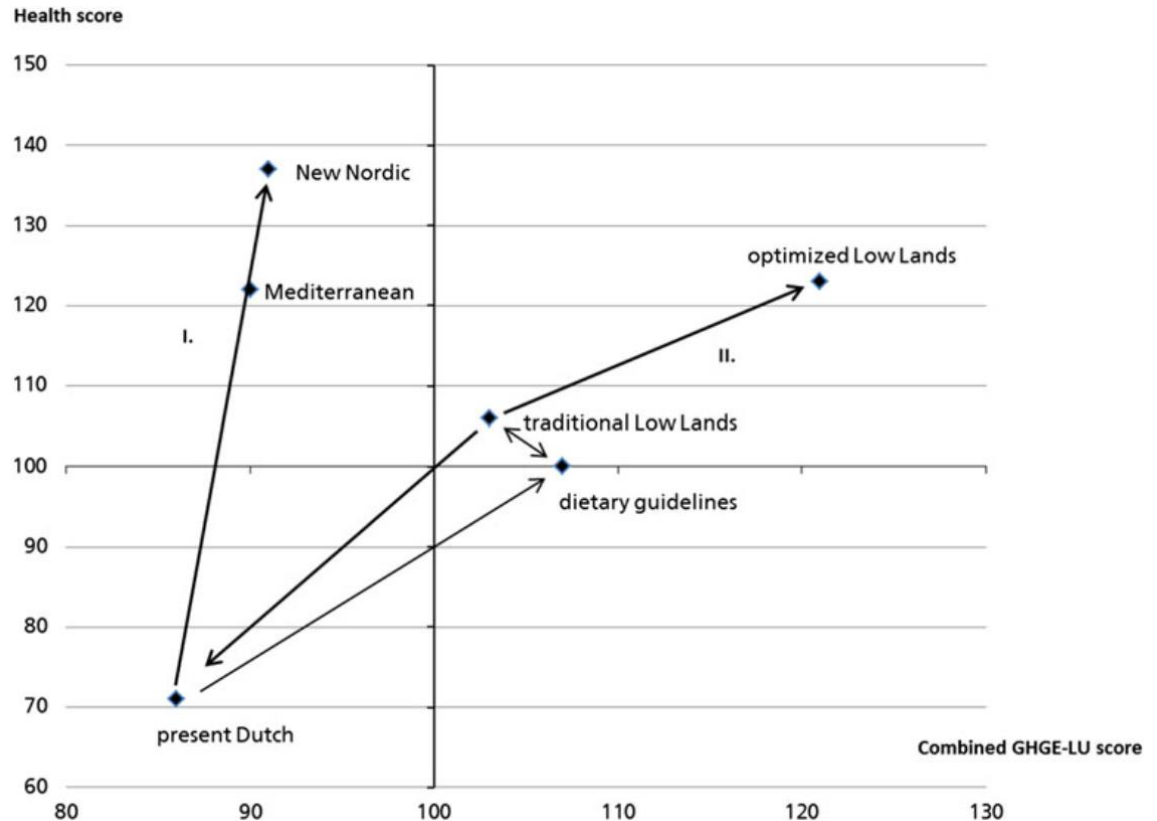
## **Can a regional diet be nutritionally healthy and environmentally friendly? - A case study for Bavaria**

Land use and GHG-emissions as  
indicator based on LCA studies  
(global / “regional”)

Bavaria as a “region”,  
largest state in Germany  
(~ 70 000 km<sup>2</sup> > 2x Belgium 😊)

# Building on previous work..

Most importantly:  
van Dooren et al., 2014  
van Dooren & Aiking, 2016



# Creating local diets with food items producible in Bavaria

Global Diet	Alternative Local Diet
Average Bavarian diet in 2002/2003 [1]	Bavarian-local
Diet according to DGE-guideline [2]	DGE-guideline-local
Semi-vegetarian(I) Bavarian diet with reduced meat intake to 200 g/week [1]	Semi-vegetarian(I)–local
Semi-vegetarian(II) Diet according to DGE-guideline with reduced meat intake to 200 g/week [2]	Semi-vegetarian(II)–local
Vegetarian diet [2,3]	Vegetarian-local

[1] Himmerich et al. 2004 [2] Deutsche Gesellschaft für Ernährung [3] van Dooren et al. 2014

# Comparison of diet quality

Index score from 0-80

(slightly) higher diet quality of local diets:

- Different fatty acid profile (less saturated fatty acids (SFAs))
- Cocoa products contain lot's of SFAs
- Sea fish often contain more SFAs than freshwater fish

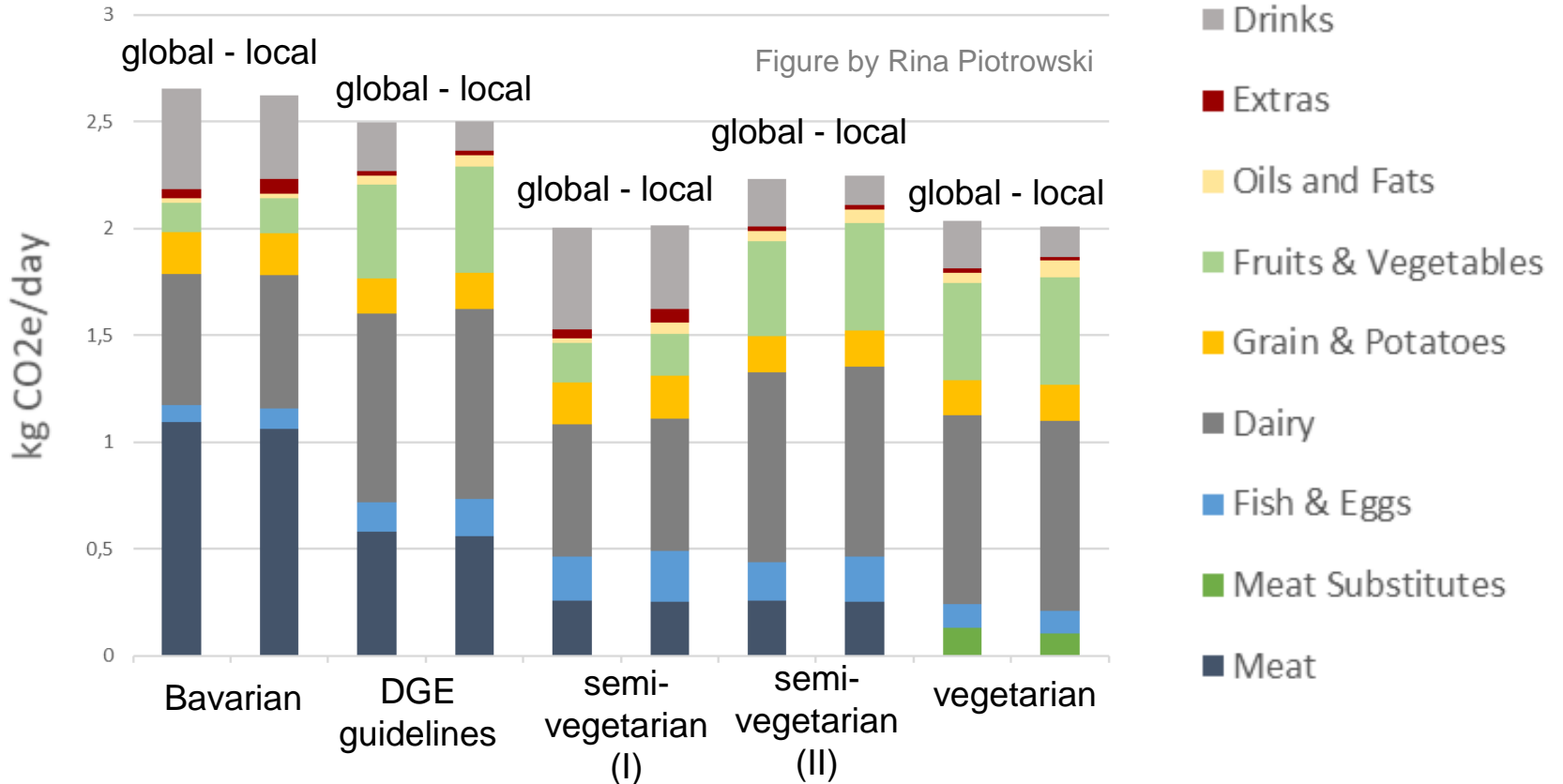
Figure by Rina Piotrowski

Diet	Score
Bavarian	52,67
Bavarian-local	54,57
DGE-guideline	59,97
DGE-guideline-local	60,46
Semi-vegetarian(I)	60,24
Semi-vegetarian(I)-local	63,23
Semi-vegetarian(II)	60,68
Semi-vegetarian(II)-local	61,78
Vegetarian	62,00
Vegetarian-local	63,97



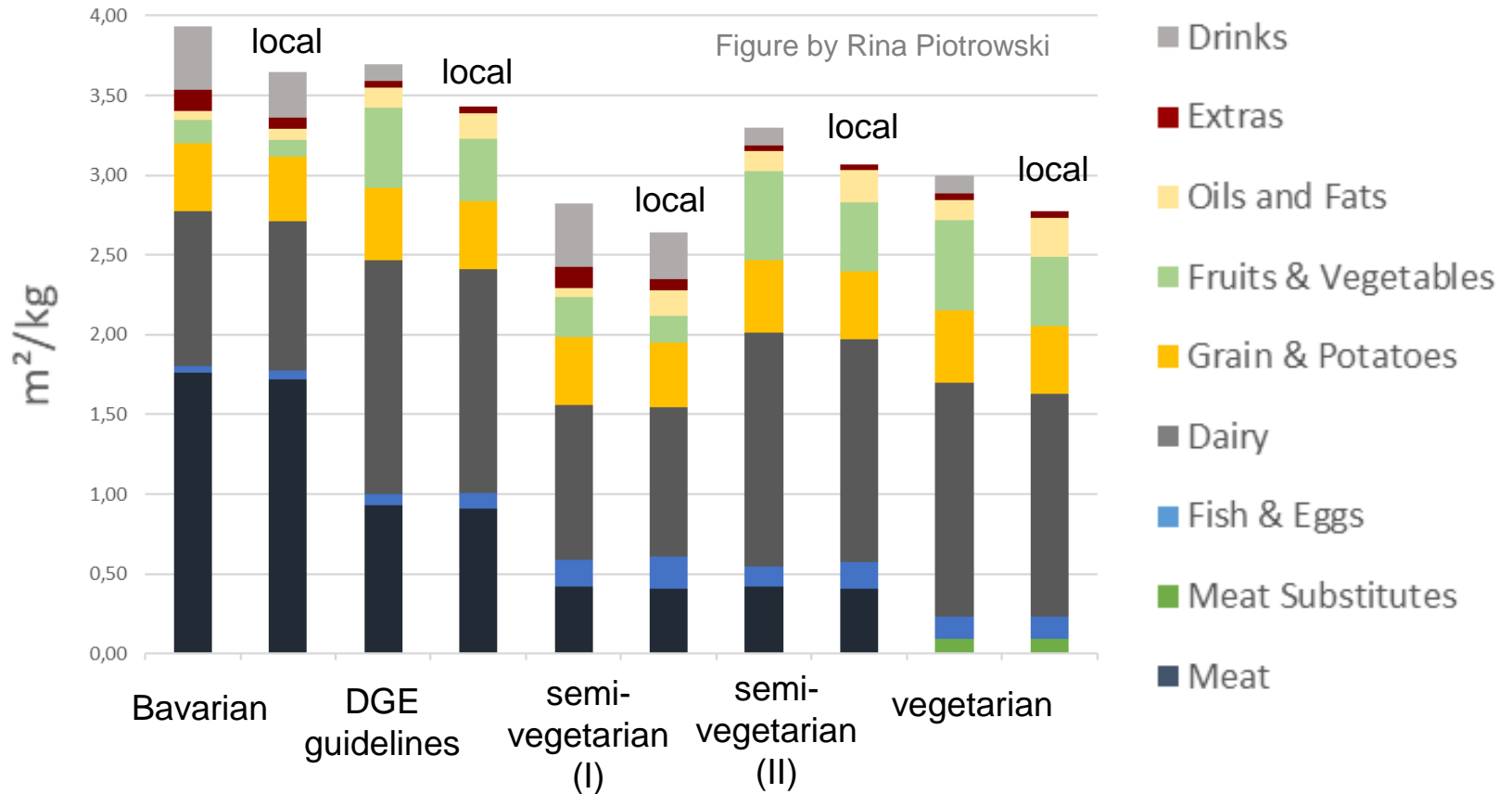
# GHG emissions per diet

plus ~5% GHG for transport (for global)  
plus GHG from land use conversion (?)

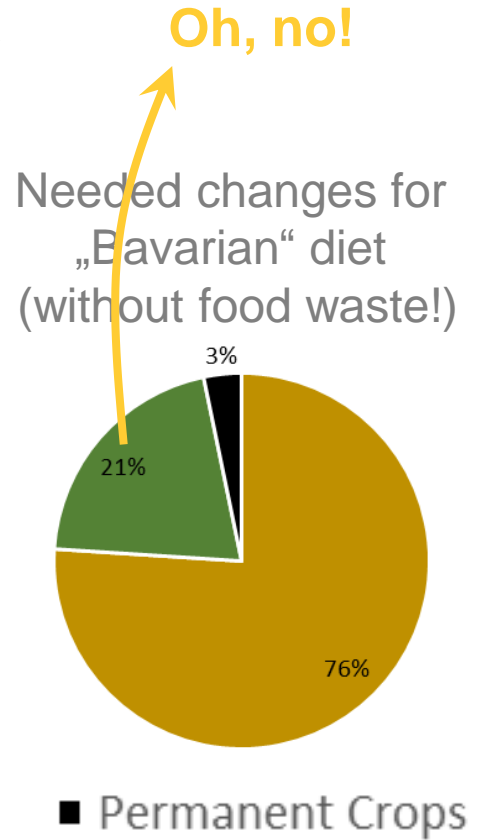
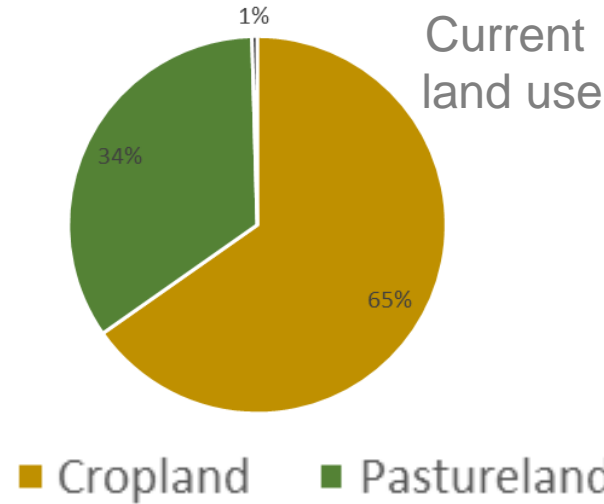
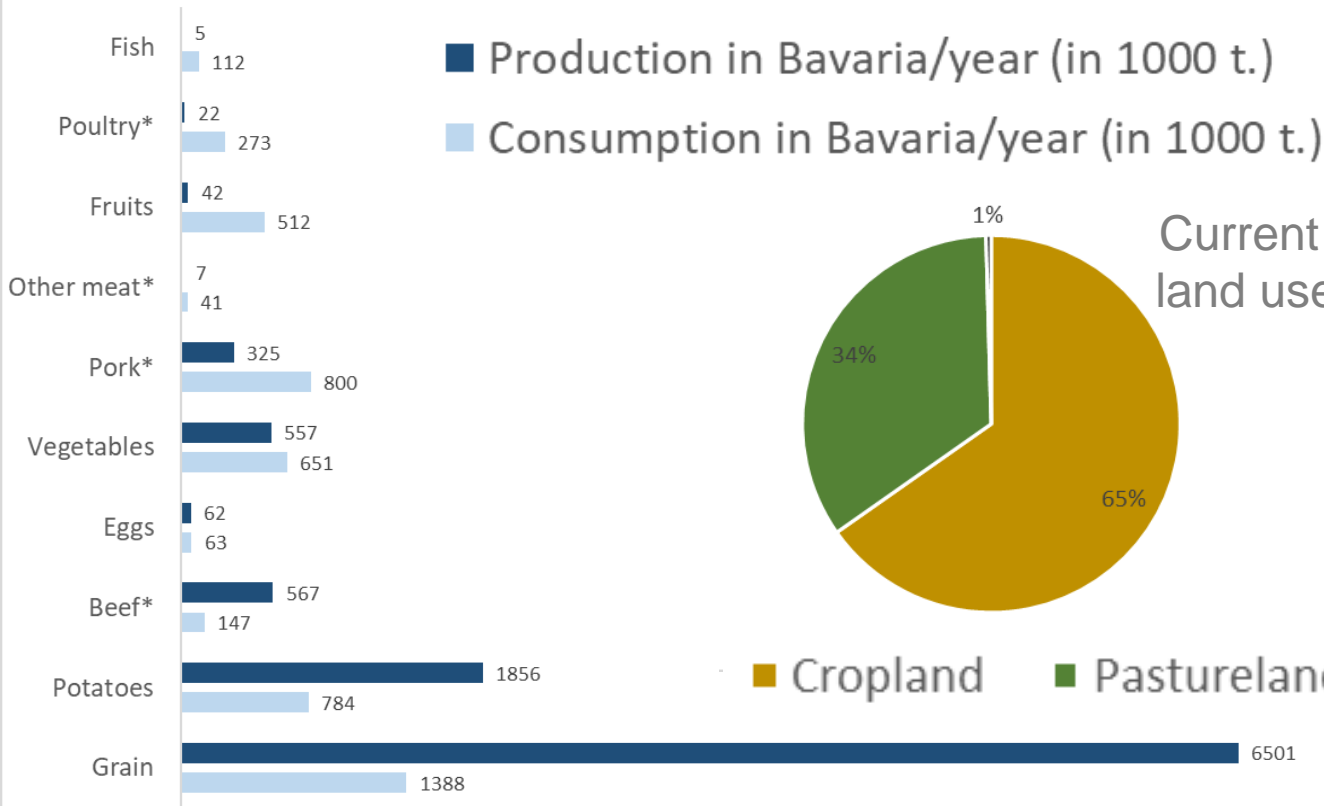


This can also imply more intense agriculture in an European vs. global context

## Land use per diet



# Is a Bavarian diet with local products realistic?



# Limitations of the approach

- Not considered: Micronutrients / health aspect of less travelled food?
  - Limitations of GHG indicator (system boundaries)
  - Other environmental indicators also important
- ⇒ what is “environmentally friendly”?
- No food waste considered
  - No organic farming considered



# Conclusion

- Regional diet nutritionally healthy & environmentally friendly?  
=> Well, at least not performing worse
- “Eating local” – not the biggest environmental lever  
=> change in diet composition much larger effect (25% GHG, 28% land)
- Strong synergies between health and reduced environmental impact!



**Still: Regionalizing food systems – a lever  
for reconnecting people and nature**