

## **Sustainable use of natural resources in different out-of-home catering settings: Sustainability assessment of meals**

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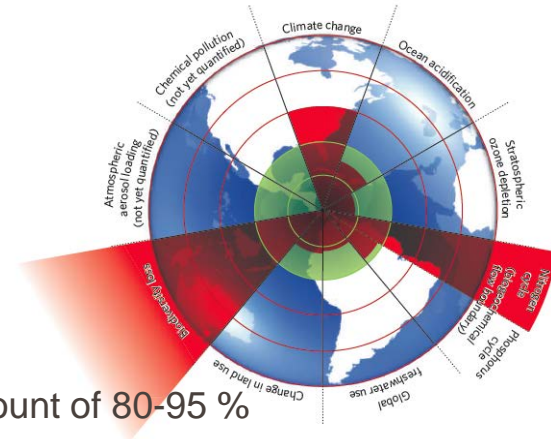


# Introduction

## Sustainable out-of-home-catering as part of sustainable development



- Exceedance of planetary boundaries and carrying capacities of social systems
  - → Global warming
  - → Loss of biodiversity
  - → Resource exhaustion
  - → Political, economic, and social problems
  - → ...
- Overarching, long-range targets
  - Two degrees Celsius goal: reduction of CO<sub>2</sub>eq in the amount of 80-95 %
  - Dematerialisation: reduction of resource use in the amount of 90 %
  - Sustainable Development Goals (SDGs)
  - ...



Source: Rockström et al.  
2009

## Method

NAHGAST indicator sets: for each indicator sustainable levels developed



**NAHGAST  
Meal-Basis**  
(Sustainability  
assessment of meals)

**Economy Health**

**Ecology Social**

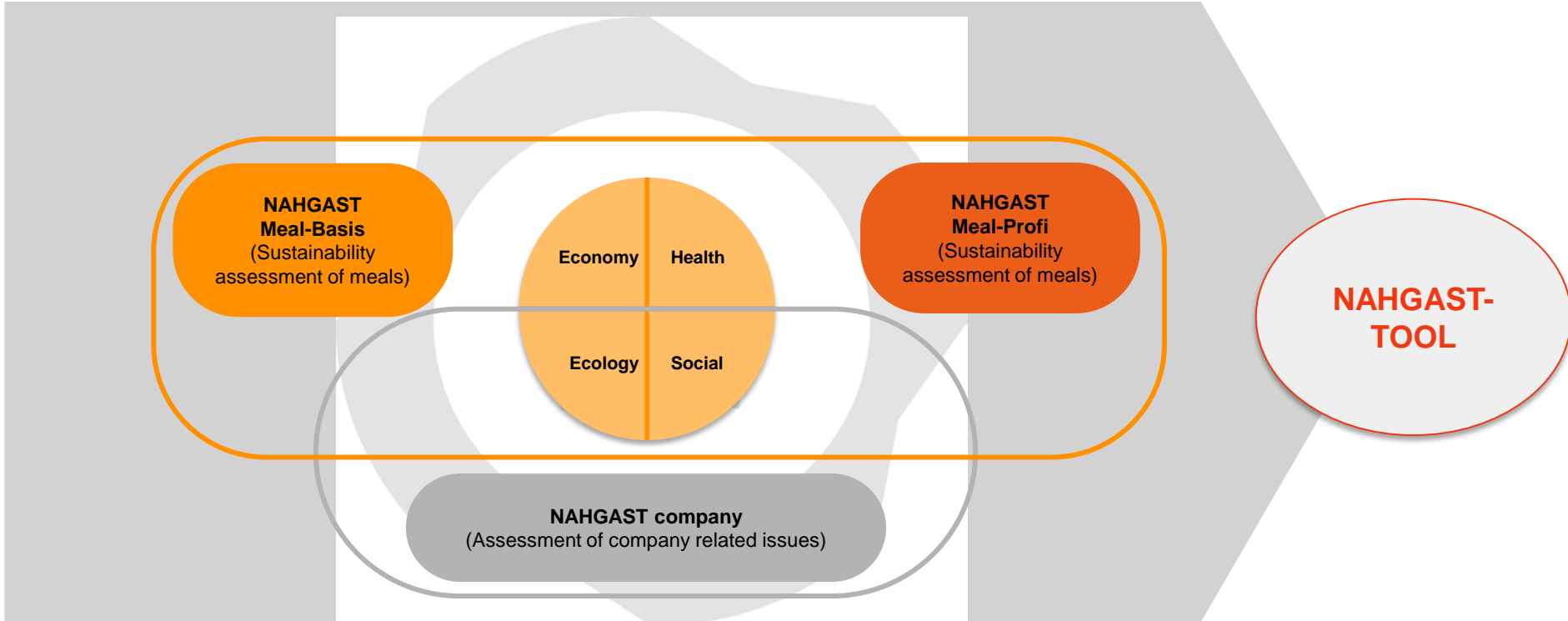
**NAHGAST  
Meal-Profi**  
(Sustainability  
assessment of meals)

**NAHGAST company**  
(Assessment of company related issues)

Speck et al. (2017): Entwicklung von integrierten Methoden zur Messung und Bewertung von Speisenangeboten in den Dimensionen Ökologie, Soziales, Ökonomie und Gesundheit. NAHGAST Arbeitspapier 2. Online: [www.nahgast.de](http://www.nahgast.de)

# Method

NAHGAST indicator sets: for each indicator sustainable levels developed



Speck et al. (2017): Entwicklung von integrierten Methoden zur Messung und Bewertung von Speisenangeboten in den Dimensionen Ökologie, Soziales, Ökonomie und Gesundheit. NAHGAST Arbeitspapier 2. Online: [www.nahgast.de](http://www.nahgast.de)

# Results

Example: fictional goulash dish



Indicators – NAHGAST Meal-Basis														
	Ecology							Social issues	Health			Economy		Weight of the ingredients (g)
	Share of animal products	Share of seasonal products ...	Share of regional products	Share of organic products	Share of GMO-free products	Share of sustainably caught fish	Share of avoidable food waste	Share of fairtrade products ...	Share of fruit and vegetables	Energy (kcal)	Fibre (g)	Popularity	Cost coverage	
	31%	0%	25%	0%	69%	0%	10%	13%	27%	605	5,9	level 2	level 2	487
<b>Sustainable level:</b>	< 30 %	> 90 %	> 50 %	> 40 %	100%	100% MSC or ASC or no fish	< 10 %	> 90%	> 40 %	< 670 kcal	> 8 g	level 3	level 3	
<b>Results (1, 2, 3):</b>	2	1	1	1	1	3	1	1	1	3	1	2	2	
<b>Results (recommendations):</b>	restrictively recommendable	not recommendable	not recommendable	not recommendable	not recommendable	recommendable	restrictively recommendable	not recommendable	not recommendable	recommendable	not recommendable	restrictively recommendable	restrictively recommendable	<b>total score 1.6</b>

Indicators – NAHGAST Meal-Pro															
	Ecology				Social issues		Health						Economy		Weight of the ingredients (g)
	Material Footprint (kg/meal)	Carbon Footprint (kg/meal)	Water demand (kg/meal)	Area required (m <sup>2</sup> *a/meal)	Fairtrade	Animal Welfare	Energy (kcal)	Fibre (g)	Fat (g)	Carbohydrates (g)	Thereof sugar (g)	Salt (g)	Popularity	Cost coverage	
	9,61	2,39	169,38	2,59	13%	0%	605	5,9	24,8	58,2	6,1	3,4	level 2	level 2	487
<b>Sustainable level:</b>	< 2,67 kg/meal	< 0,8 kg/meal	< 640 kg/meal	< 1,25 m <sup>2</sup> *a/meal	> 90%	> 60%	< 670 kcal	> 8 g	< 24 g	< 90 g	< 17 g	< 2 g	level 3	level 3	
<b>Results (1, 2, 3):</b>	2	1	1	1	1	1	3	1	2	1	3	1	2	2	
<b>Results (recommendations):</b>	restrictively recommendable	not recommendable	not recommendable	not recommendable	not recommendable	not recommendable	recommendable	not recommendable	restrictively recommendable	not recommendable	recommendable	not recommendable	restrictively recommendable	restrictively recommendable	<b>total score 1.8</b>

(source: own work)

# Results

Example: fictional goulash dish (NAHGAST Meal-Pro)



Indicators	Recommendations	Scores
Fairtrade products:	not recommendable	1
Animal welfare	not recommendable	1
Energy amount:	recommendable	3
Fibre amount:	not recommendable	1
Fat amount:	restrictively recommendable	2
Carbohydrates amount:	not recommendable	1
thereof sugar:	recommendable	3
Salt amount:	not recommendable	1
Material Footprint:	restrictively recommendable	2
Carbon Footprint:	not recommendable	1
Water demand	not recommendable	1
Area required	not recommendable	1
Popularity	restrictively recommendable	2
Cost coverage	restrictively recommendable	2
	<b>Recommendation</b>	<b>Score</b>
<b>Total result:</b>	restrictively recommendable	<b>1,8</b>
<b>Dimensions:</b>	<b>Recommendations</b>	<b>Scores</b>
Social dimension	not recommendable	1,0
Health	recommendable	1,8
Ecology	recommendable	1,3
Economy	restrictively recommendable	2,0

below 1,5:
not recommendable
1,5 to below 2,5:
restrictively recommendable
above 2,5:
recommendable

(source:  
own work)



- Measuring sustainability is always complicated and vulnerable!
- Nevertheless, the NAHGAST approach is a rather ambitious one to assess sustainability of dishes because it integrates
  - not only indicators from different sustainability dimensions,
  - but also qualitative and quantitative indicators
  - as well as sustainable levels.
- The availability and validity of data belong to the major challenges we have to deal with → need of further research!
- The assessment results are quite convincing, but still seen as preliminary!

## Many thanks for your attention!

For further questions, please contact:

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[www.nahgast.de](http://www.nahgast.de)

Development, testing and dissemination of concepts for sustainable production and consumption in the the field of out-of-home catering

