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Wholesome Nutrition: an example for a sustainable diet

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Münchener Umweltpreis
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Auszeichnung der
Landeshauptstadt München



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Nutrition and health throughout life-cycle –
Science for the European consumer

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www.fensberlin2015.org



Conflict of interest regarding this presentation:

I have no conflict of interest to report in relation to
this presentation.

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Wholesome Nutrition: an example for a sustainable diet

- I. Introduction: What is “Sustainable Nutrition“?
- II. Global challenges in the field of nutrition
- III. Principles of a Sustainable Nutrition
- IV. Conclusions



“Wholesome Nutrition” – “Vollwert-Ernährung“: a concept of sustainable nutrition in the 1980s

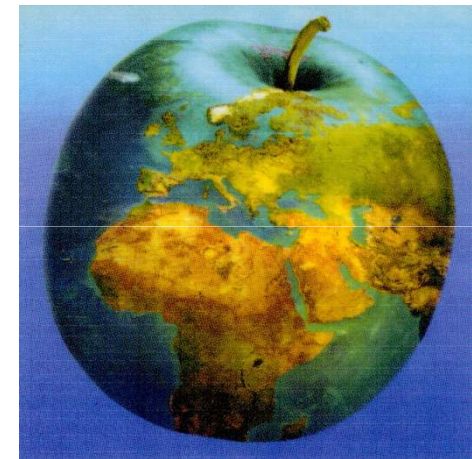
Definition

Wholesome Nutrition is a mainly plant-based diet, where minimally processed foods are preferred.

The mainly consumed food groups comprise vegetables and fruits, whole-grain products, potatoes, legumes and dairy products.

Berries, nuts and herbs are important.

Small amounts of meat, fish and eggs can be consumed.



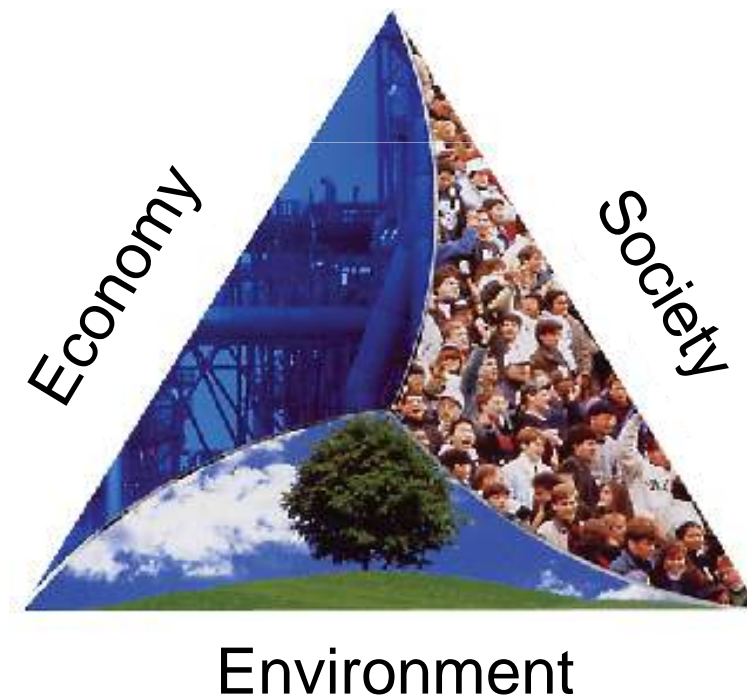
Included aspects

health, ecologic, economic, social aspects



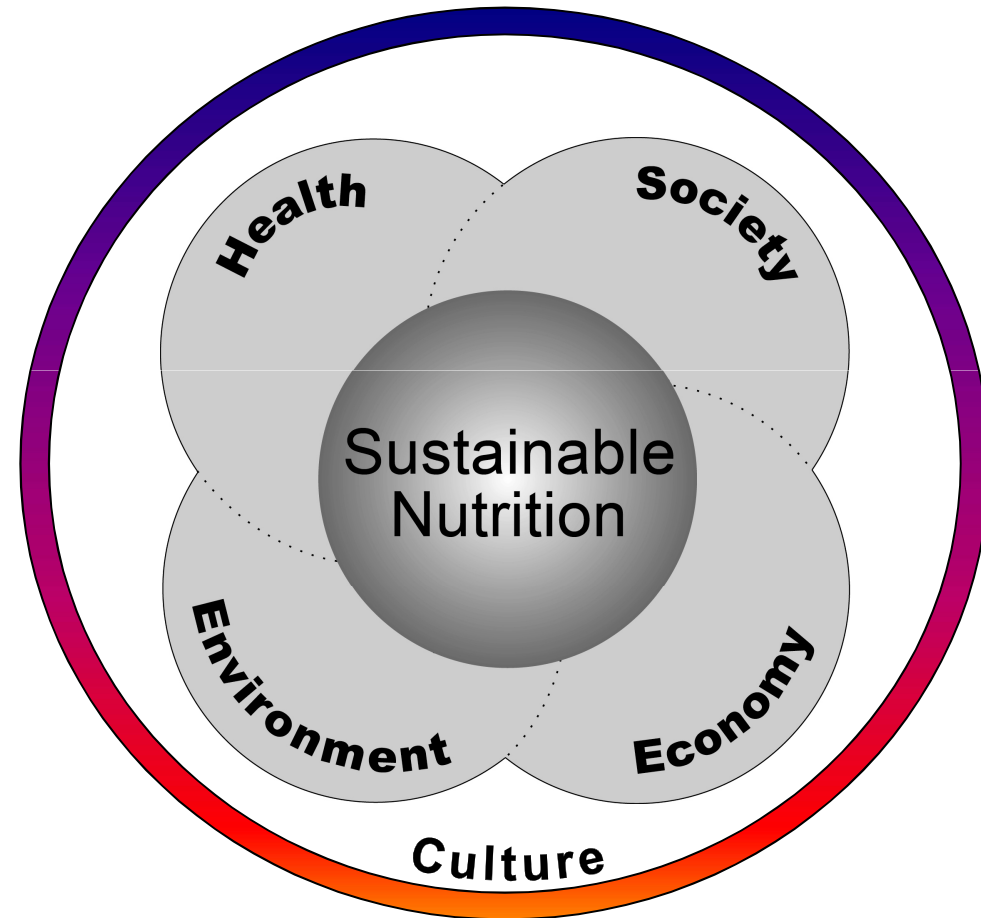
Sustainable development as a guiding concept of society – UN conference in Rio 1992

“Classical model” - three dimensions of sustainability





Dimensions of a Sustainable Nutrition



Source: v. Koerber,
Männle, Leitzmann:
Vollwert-Ernährung –
Konzeption einer zeitgemäßen
und nachhaltigen Ernährung.
11. Aufl., Haug-Verlag,
Stuttgart, 2012 (modified)



Stages of the food supply chain



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Input production



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Agricultural production



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Food processing



Waste disposal



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Preparation



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Global challenges in the field of nutrition

- energy availability – increasing prices
- climate change
- poverty – world hunger
- water scarcity
- soil degradation
- loss of biodiversity
- problems due to livestock breeding and feeding
- economic and financial crises



Global climate change – necessary actions

- renewable instead of fossil energy sources
- increase of energy efficiency
- climate-friendly, sustainable lifestyle (including nutrition)



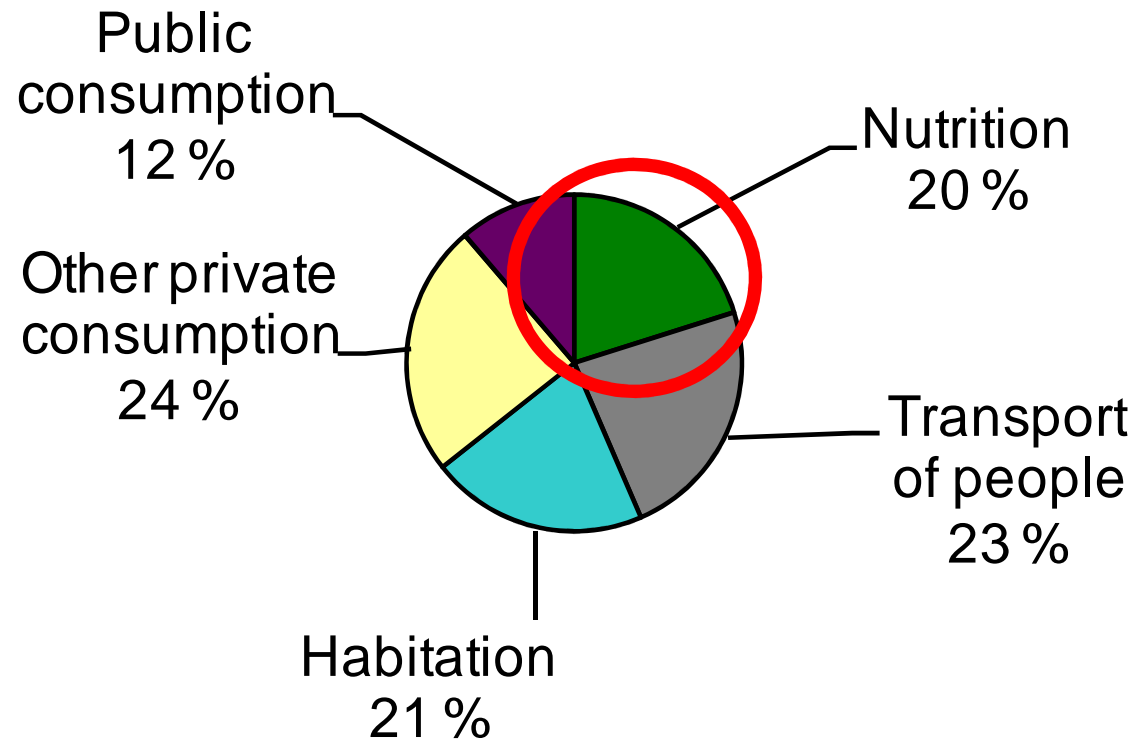
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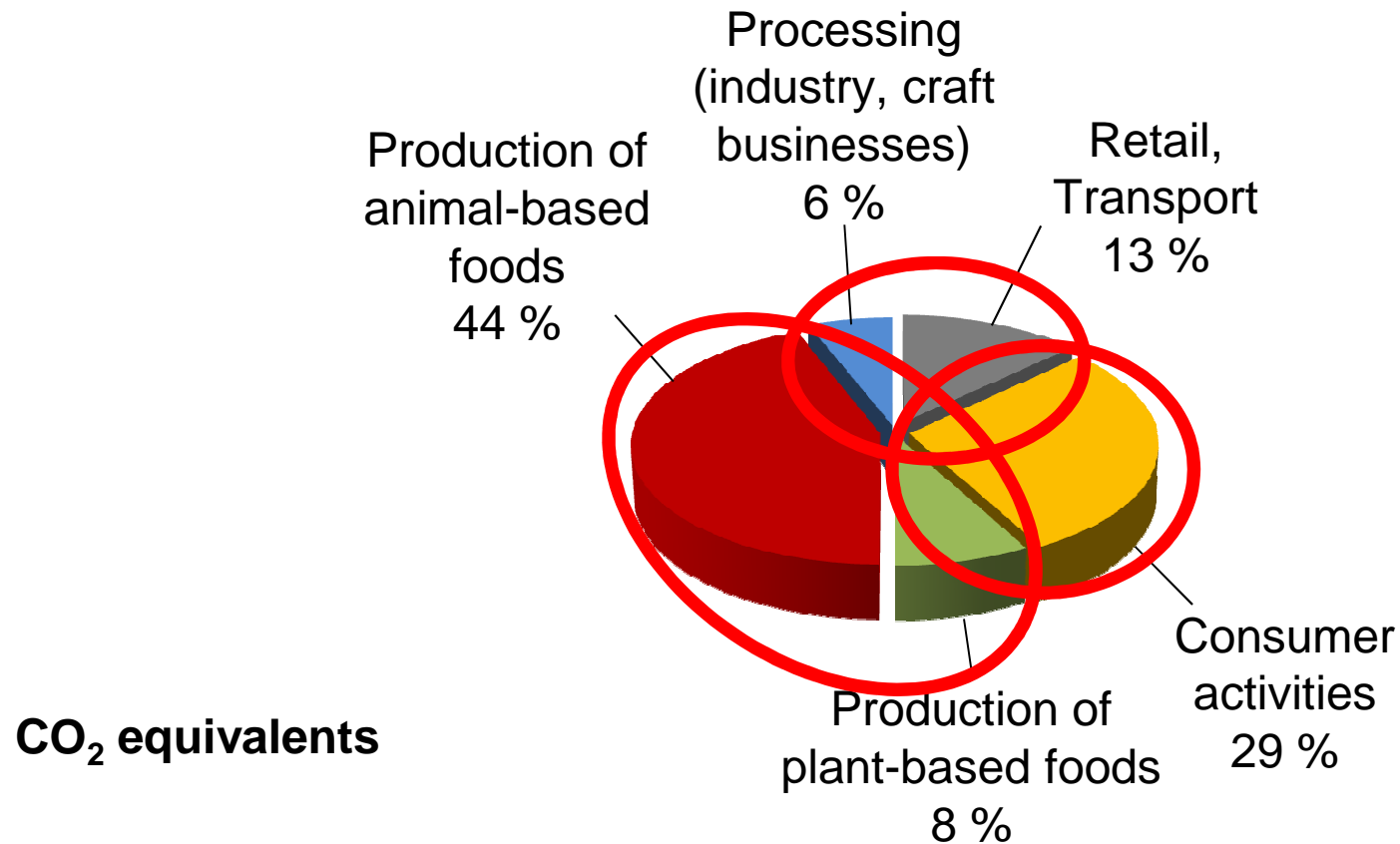
Greenhouse gas emissions by sector in Germany

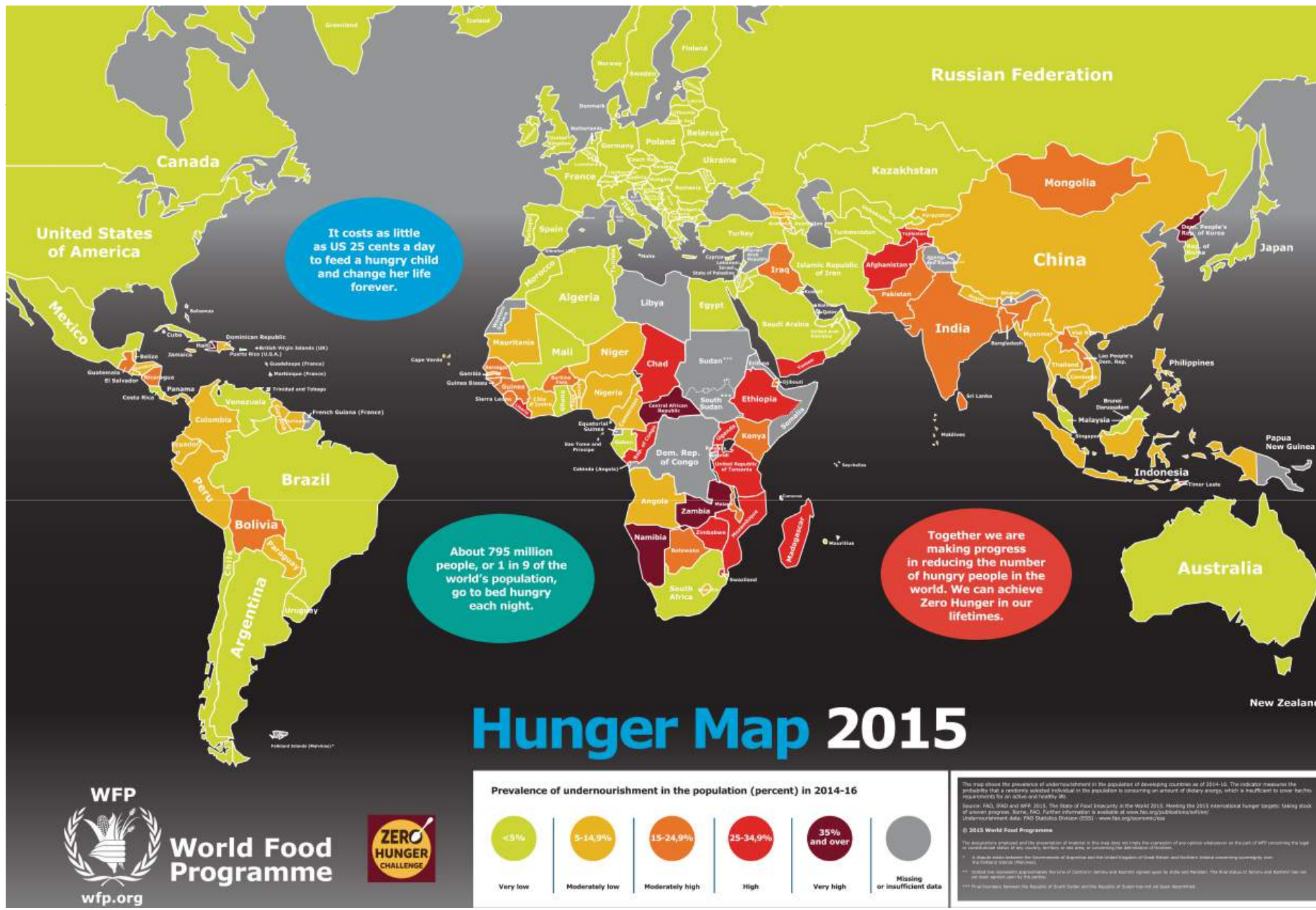


CO₂ equivalents



Sectors of nutrition contributing to the greenhouse gas emissions in Germany (in % of total emissions caused by nutrition)



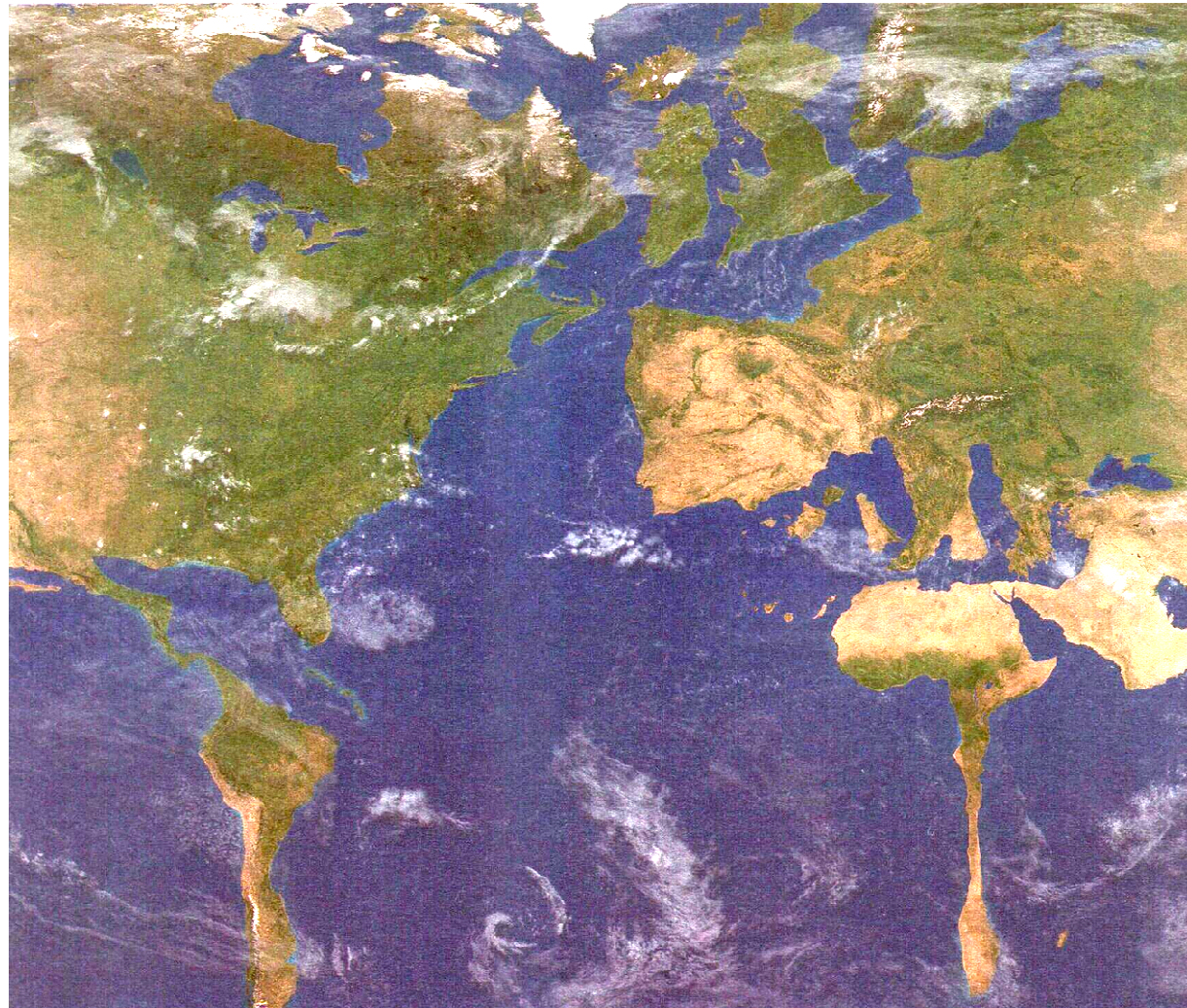


Source: World Food Programme 2015



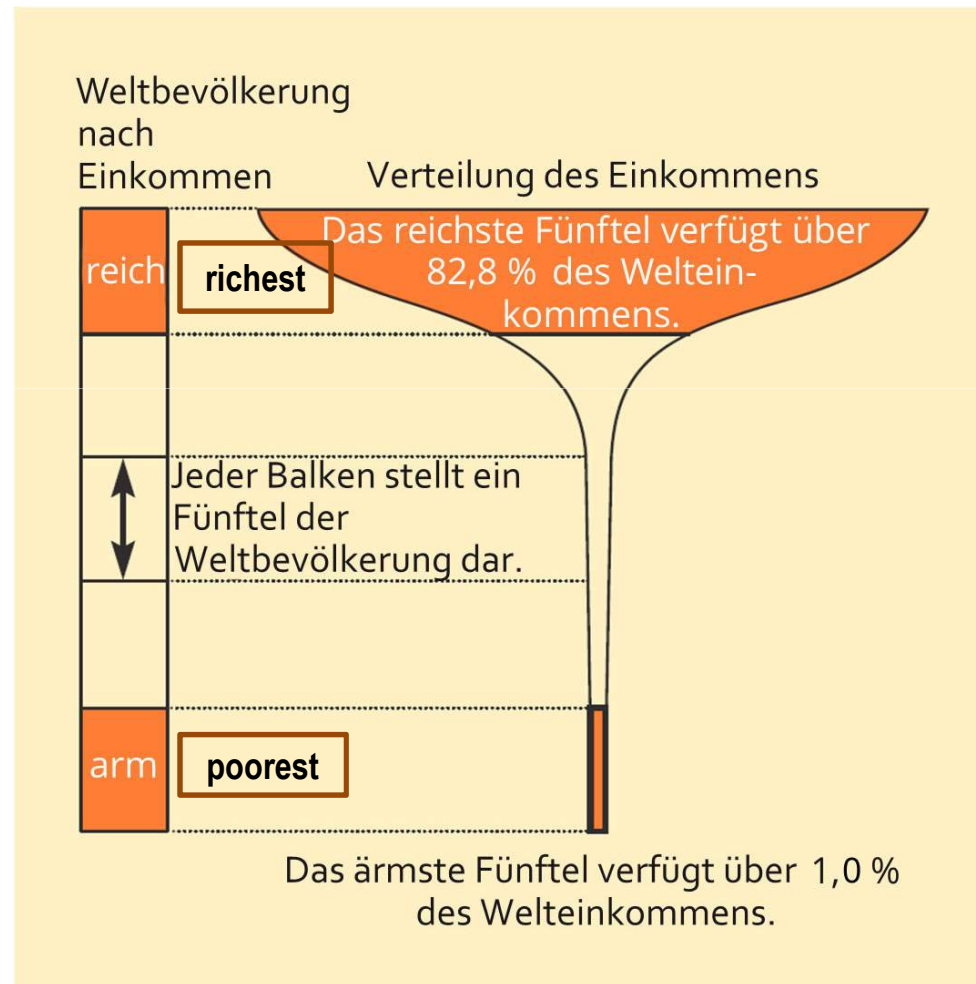
What the world actually looks like

Land use for
food production
per person in
each continent





Global income distribution of the world population (in quintiles)





Relation between diets and land use

- production of animal-based products requires much more land due to “food transformation losses“ (from plant-based feed to an animal product)
- but: *moderate* consumption of ruminant products like beef and dairy products makes sense due to “food transformation benefits“
⇒ important for global food security
- holds true only for extensive and sustainable livestock farming on permanent pasture



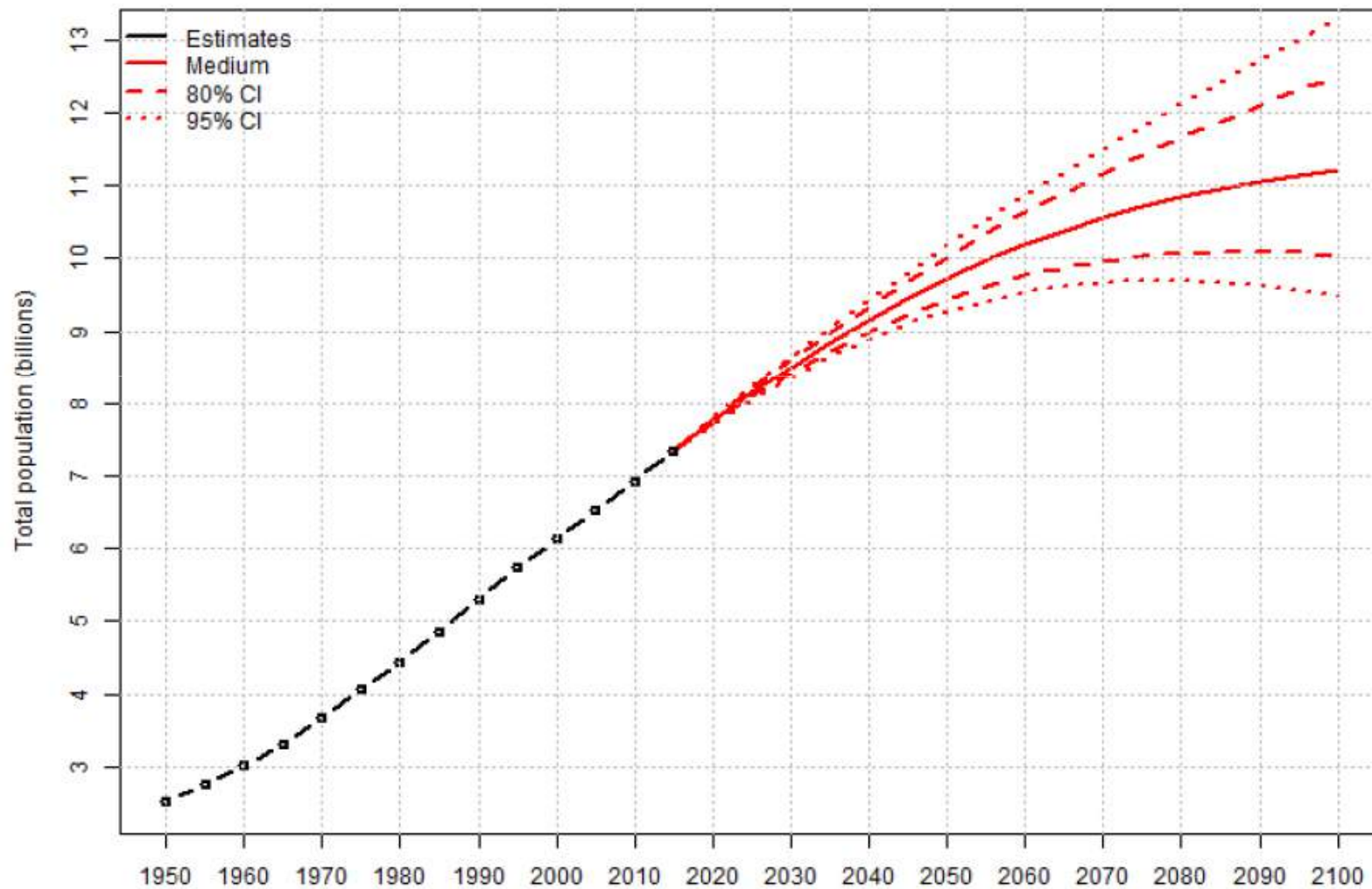
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World population prospects until 2100





Urbanization and nutrition trends

Until 2030: 60 % of the world population lives in **cities**

Urban dietary changes:

- animal-based products ↑
- fats and sugars ↑
- convenience foods ↑



Mumbai, India

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Nutrition Transition towards Western diet

- 2 - 3 times increase in land use in developing countries if Western diet is adapted
- trend towards a Western diet in many countries, e.g. China, Mexico, Brazil
- dietary changes are predicted to cause higher land use than population growth



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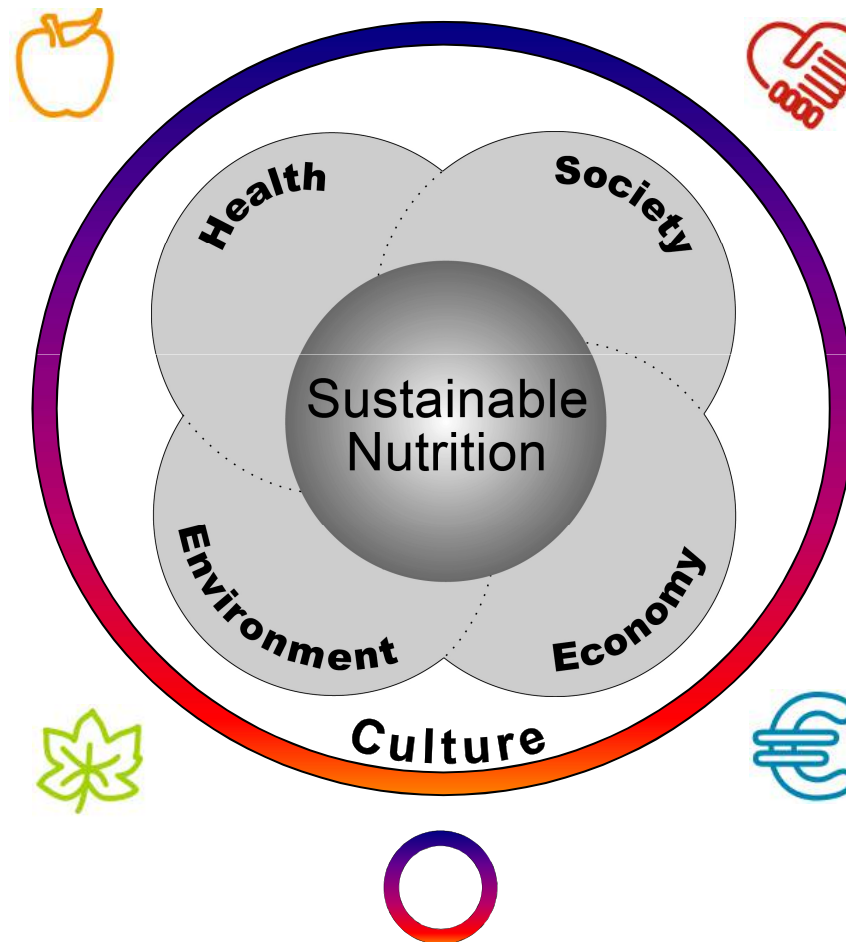


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Dimensions of a Sustainable Nutrition



Source: v. Koerber,
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Principles of a Sustainable Nutrition:

1. Preference of plant-based foods (I)

Ecological aspects

- greatest reduction of GHG emissions in the whole nutrition system
- virtual water consumption ↓



© Bader 2014

Social aspects

- “food transformation losses” ↓ – if less meat and milk products
- keeping of ruminants on permanent pastures: “food transformation benefits” ⇒ food security ↑
- feed + food import: conflicts for land use in developing countries
- deforestation for soy production or pasture lands problematic



Principles of a Sustainable Nutrition:

1. Preference of plant-based foods (II)

Health aspects 🍏

- complex carbohydrates ↑ – fat, saturated FA, cholest., purines ↓
- vitamins, minerals, dietary fiber, secondary plant metabolites ↑
- satiety ↑ (although food energy is equal or reduced)

Economical aspects 💶






- food costs ↓ – meat and milk products more expensive

Cultural aspects 🍷

- only 60 years ago, meat used to be something special
- men consume more meat products than women
- new taste experiences with creative vegetarian dishes



Principles of a Sustainable Nutrition: 2. Organically grown foods

-  • generally, greenhouse gas emissions ↓
• soil erosion ↓, biodiversity ↑
• animal-friendly husbandry
-  • generally, livelihood security ↑, jobs on farms ↑
• but: organically grown foods not as cheap as conventionally
-  • high standard: no feed imports from developing countries
-  • secondary plant metabolites ↑
• pesticides, nitrates, food additives ↓
-  • usually more intense taste
• transparency and trust ↑





Principles of a Sustainable Nutrition:

3. Regional and seasonal products

- transport emissions ↓, esp. CO₂
- train transport ↓ than truck – airplane ↑↑
- support of small + medium-sized businesses
- clear structures ⇒ transparency and trust ↑
- due to a prolonged ripening period ⇒ essential and health-promoting substances ↑ and tastier products
- appreciation of regional specialties ↑, biodiversity ↑
- more diverse foods due to seasonal variations





Principles of a Sustainable Nutrition:

4. Preference of minimally processed foods

- essential and health-promoting substances ↑
- convenience products: high amounts of fat, sugar + salt
- avoidance of food additives
- primary energy use and pollutant emissions ↓
- need of virtual water during production ↓
- appreciation of raw foods ↑
- staple foods generally cheaper
- cooking with natural products as a social event



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Principles of a Sustainable Nutrition:

5. Fair Trade products

- fair prices for producers in developing countries
- long term guaranteed purchase and prepayments
- allows higher expenses for food and education
- exclusion of the worst cases of child labour
- qualification of local producers ↑
- support of social projects (schools or hospitals)
- environmental requirements
(decreased use of chemicals, reforestation etc.)
- educational work in rich countries ⇒ sense of responsibility ↑





Principles of a Sustainable Nutrition

1. Preference of plant-based foods
2. Organically grown foods
3. Regional and seasonal products
4. Preference of minimally processed foods
5. Fair Trade products
6. Resource-saving housekeeping
7. Delicious meals



© Koerber 2008



Challenges of a sustainable behavior

- higher prices – lack of willingness to pay more
- pricing system, where the “true costs” are hidden
- convenience – more effort for food shopping and preparation
- old habits
- lack of availability of sustainable food products
- lack of information and transparency
- political and economical conditions
- economical interests – growth-led society and policy



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Approaches towards a Sustainable Nutrition






- producers: increase of sustainable products
- retailers: increase of availability and transparency
- political/economical instruments:
 - tax incentives
 - internalization of external costs/honest prices
 - "Greening" of direct investments (EU agricultural policy)
- Labeling – evaluation concepts





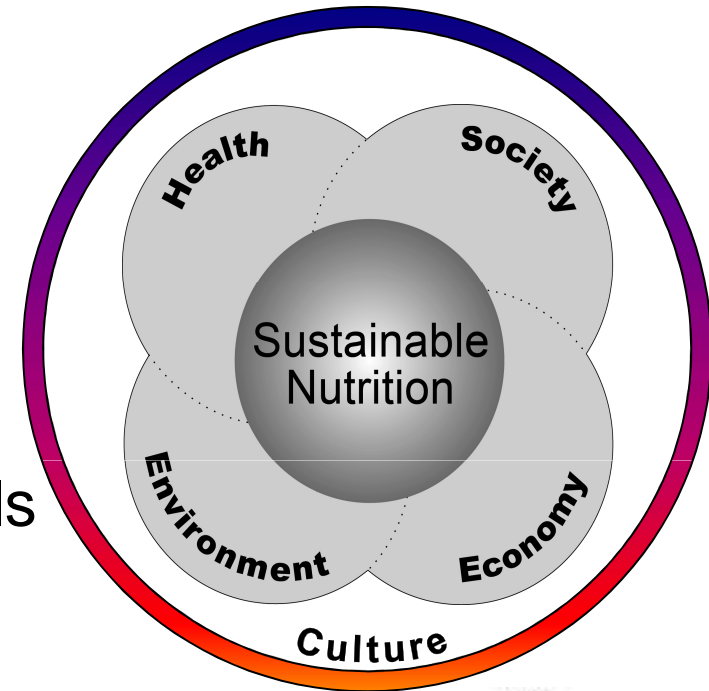
Conclusions

Sustainable Nutrition promotes:

-  • preventive health protection
-  • fair economic relationships
-  • social justice
-  • clean air and water, healthy soils
-  • enjoyable eating culture

- **special high quality** can't be for free
- increase appreciation of our food

⇒ **Education for Sustainable Development**





Thank you for your attention!

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K. v. Koerber, T. Männle, C. Leitzmann
Vollwert-Ernährung – Konzeption einer zeitgemäßen und nachhaltigen Ernährung
Haug-Verlag, Stuttgart, 11. Aufl., 2012

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Rezeptbuch für unsere Zukunft
TRIAS-Verlag, Stuttgart, 2012

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Thieme Verlag, Stuttgart, 2013

