



Reduction of animal-product consumption to counter environmental degradation and food insecurity in the tropics

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Relevance: Ecological and social consequences of animal-product consumption in the tropics

Human animal-product consumption is linked to resource depletion and food insecurity in the tropics. This can be traced back to the enormous energy loss during the process of animal-based food production (Fig. 1a), making large areas of land for growing animal feed as well as intensive agriculture necessary. Several causal connections can be identified. Contributory factors include greenhouse gas emissions and deforestation of tropical rainforest (Fig. 1b) causing displacement of small scale farmers as well as biodiversity loss. As a result, this may lead to, inter alia, an increased vulnerability to climate influences, and thus to food insecurity. **Consequently we argue that if more crops were produced for direct human consumption rather than for feeding livestock, food security and environmental conservation wouldn't be contradictory.**

Furthermore, high subsidies supporting animal production cause an overproduction of meat in countries of the Global North, leading to cheap exports and thereby the destruction of local markets in less developed countries of the tropics in Sub-Saharan Africa, South America and South-East Asia.



Figure 1: a Cattle feeding (© DALIBRI, CC BY-SA 3.0 Wikimedia Commons) b Deforestation of the rainforest (© Greenpeace/Alberto César)

Research Methods

Our research is based on a review of scientific literature about effects of meat and dairy production on biodiversity loss and

food insecurity and a systematic meta-analysis of 139 papers about (psychological) determinants on consumption patterns.

Results: Socio-economic factors retarding the reduction of animal-product consumption

- Deep cultural integration of animal products
- Cognitive dissonance (i. e. the more or less unconscious effect of denying uncomfortable facts in order not to change habits or to admit grievances)

- Lack of knowledge
- Economic and political reasons and strong lobby influence

Conclusion: Instruments potentially changing the norm of consuming animal-products

- Interactive learning and mentoring
- Expanding the vegetarian infrastructure (Fig. 2a)
- Role models appealing for a plant-based diet (Fig. 2b)
- Politico-economic measures: Increasing prices by removing damaging subsidies and internalizing external costs

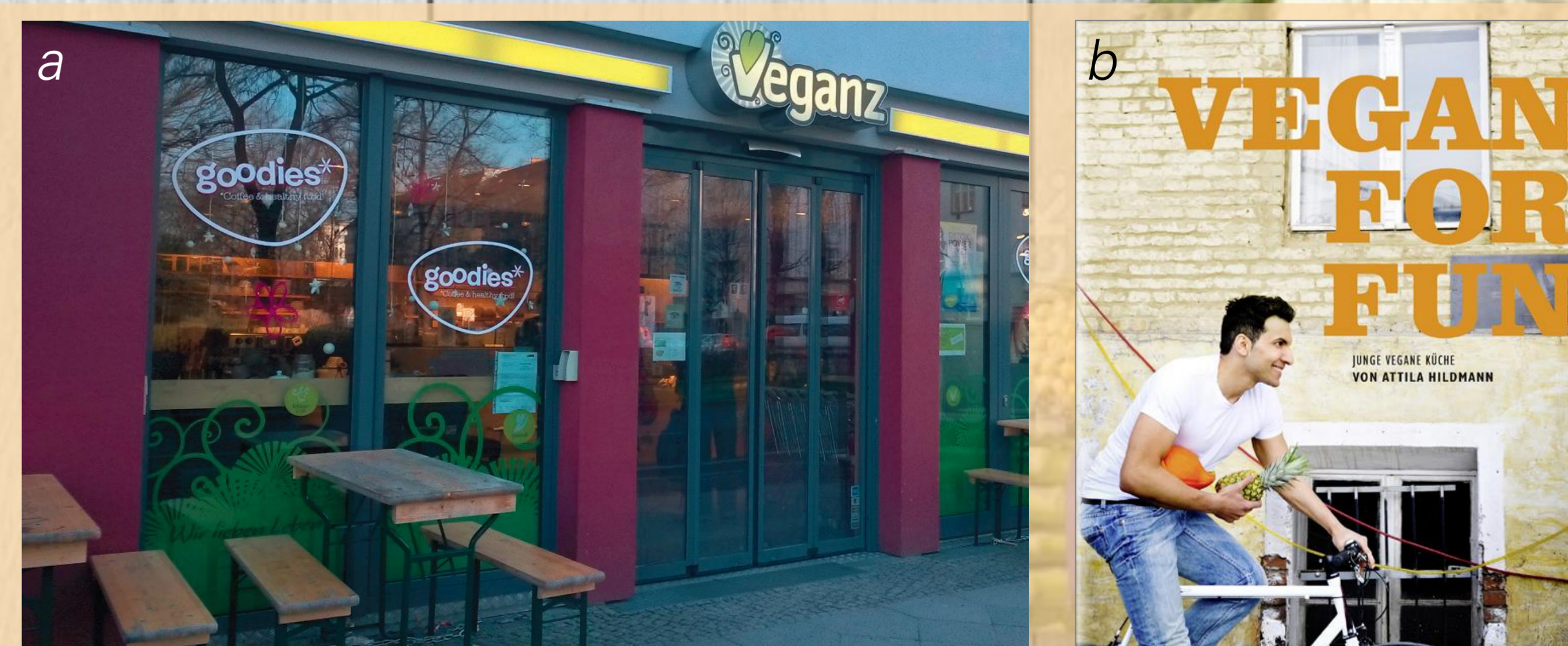


Figure 2: a Expanding the vegetarian infrastructure e.g. by offering more plant-based products (© Stoll-Kleemann) b Attila Hildmann on one of his cooking books

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See also:

Stoll-Kleemann S, O'Riordan T (2015) The sustainability challenges of our meat and dairy diets. *Environment* 57(3), 34-48.
O'Riordan T, Stoll-Kleemann S (2015) The challenges of changing behavior toward more sustainable consumption. *Environment* 57 (5), 4-13.