System archetypes of the food environment: a systematic literature review to identify barriers and enablers of the transition to more plant-based diets

Christa Blokhuis, Wageningen University, Wageningen, The Netherlands, christa.blokhuis@wur.nl
Emely de Vet, Wageningen University, Wageningen, The Netherlands, christa.blokhuis@wur.nl
Gert Jan Hofstede, Wageningen University, Wageningen, The Netherlands, gertjan.hofstede@wur.nl
Marga Ocké, Dutch National Institute for Public Health and the Environment, Bilthoven, The Netherlands, marga.ocke@rivm.nl
Sofia Wolfswinkel, Wageningen University, Wageningen, The Netherlands, sofia.wolfswinkel@wur.nl
Presenter: Christa Blokhuis, christa.blokhuis@wur.nl (in person)

In western countries, increasing consumption of plant proteins and reducing animal protein intake is essential to improve public health and enable more sustainable food production. Many explanations for the consumption of either animal- or plant-based proteins as affected by the food environment have been reported in literature; yet underlying system structures of these interactions are poorly defined. This lack of understanding of the dynamics between the food environment and food practices hampers and hampers the transition to more plant-based diets. This systematic literature review aims to identify barriers and enablers of the transition to more plant-based diets by extracting variable relationships from literature and creating system archetypes of the food environment. System archetypes are dynamic phenomena expressed as causal loop diagrams (CLDs) that occur repeatedly in diverse settings. Examples include: a supply-and-demand archetype for supply of meat and consumption of meat; the drifting goals archetype for flexitarians trying to reduce meat intake but feeling pressured by meat-eating peers to continue meat consumption; the fixes that fail archetype about marketing for meat analogues that strengthens the focus on meat consumption.

While system archetypes have been used in various fields, methods for synthesizing current knowledge into systemic presentations are underdeveloped. As a second aim, this study seeks to address the knowledge gap in systemic synthesis from literature by exploring solutions to enhance transparency and reproducibility in the construction of CLDs.

The review follows a complex systematic review approach, incorporating mixed methods and considering multiple perspectives within the food environment. Selection of literature occurred in several stages using the PRISMA-P template for reporting results of a systematic review. Screening of titles and abstracts was performed in ASReview, a machine learning framework for efficient and transparent systematic reviewing. The systematic literature search identified a total of 68 articles meeting the eligibility criteria. These articles were assessed for methodological quality using predefined criteria for different study types. Labels used in coding the data are based on publication standards of a realist evaluation (RAMESES) and system vocabulary. Variables and their relationships were organized using a glossary of variables that was developed during another study (Blokhuis et al, in prep).

The identification of system archetypes and the characterization of variable relationships will serve as a valuable guide for future research aiming to understand the transition to more sustainable and healthier diets.