Abstract citation ID: ckad160.944
Systems dynamics for healthy and sustainable local food environments

Maartje Poelman

MP Poelman[1], T Wopereis[1], J Wierda[1], F Rongen[1], SC Dijkstra[2]
[1]Consumption and Healthy Lifestyles, Wageningen University and Research, Wageningen, Netherlands
[2]Health Science, Vrije Universiteit Amsterdam, Amsterdam, Netherlands
Contact: maartje.poelman@wur.nl

Background:
Current food environments steer unhealthy food choices, increasing the risk for diet-related non-communicable diseases. Changing food environments is complex and underlying system dynamics of local food environments are relatively unclear. This study aimed to identify factors and leverage points that shape local food environments and to develop systemic actions with local stakeholders to improve food environments.

Methods:
Two workshops (in 2022) were held in a Dutch municipality using a community-based system dynamics approach in which a variety of stakeholders (n = 13) participated (e.g., policy maker, retailers, health coach, citizens). Group model building exercises were used to identify factors shaping the local food environment and to develop a causal loop diagram. Subsequently, leverage points and actions to improve food environments were identified by the stakeholders.

Results:
Based on the first workshop, a total of 46 factors influencing the local food environment were identified and categorized into four subsystems including commercial-, political-, global- and societal factors. The leverage points included the anti-lobby from food industry, food industry's willingness to change, Government/consumer priority on healthy food, food policy, e-commerce and platform economy, demand for healthy food, time to prepare/consume meals. In correspondence, 20 actions to improve the local food environment were identified during the second workshop. Moreover, the exercises initiated dialogues and collaborations between the participating stakeholders to adapt their local food environment.

Conclusions:
This research yielded one of the first causal loop diagrams showing the multiple and varied factors influencing the local food environment. It underlines the importance of using a systems approach to adapt and improve food environments. More work is needed to implement the developed actions and to translate the system dynamics approach for use by non-academics.

Key messages:
- Food environments are complex adaptive systems, which require a systems dynamic approach to generate change.
- Food environments need to be adapted at multiple levels requiring multiple pathways and stakeholders to succeed, and thus move away from single component interventions.