Food Environment Concepts

RegLab learning lab ‘Maten! En hävstång för regional utveckling’

Dr Christopher Turner

c.j.turner@greenwich.ac.uk

Innovative Methods and Metrics for Agriculture and Nutrition Actions

Food Environment WORKING GROUP

NRI FaNSI

UNIVERSITY OF GREENWICH

Natural Resources Institute

Vad är en matmiljö?

Matmiljön – platsen där vi möter maten, såsom butiken, restaurangen, skolan eller digitala miljöer – är en nyckel till vilka val som görs. Vi tänker på matmiljön som matsystemets skyltfönster, och är övertygade om att fönstret behöver designas, stylas och kanske till och med möbleras om för att stärka folkhälsa, ekonomi och hållbar produktion.


KIOSK
KÖT!
KÖP TVÅ PAKET TILL PRISET AV EN
BENSIN
BESTÄLL MAT
SOMMARENS NYA GLASS
BURGARE
PIZZA


Gate
Gates C2
LAGKAGEHUSET


MAXI
ICA STORMARKNAD


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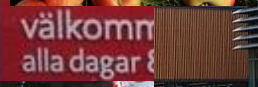
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alla dagar


Boarding
On time
On time


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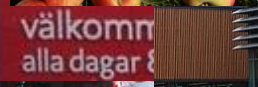
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Boarding
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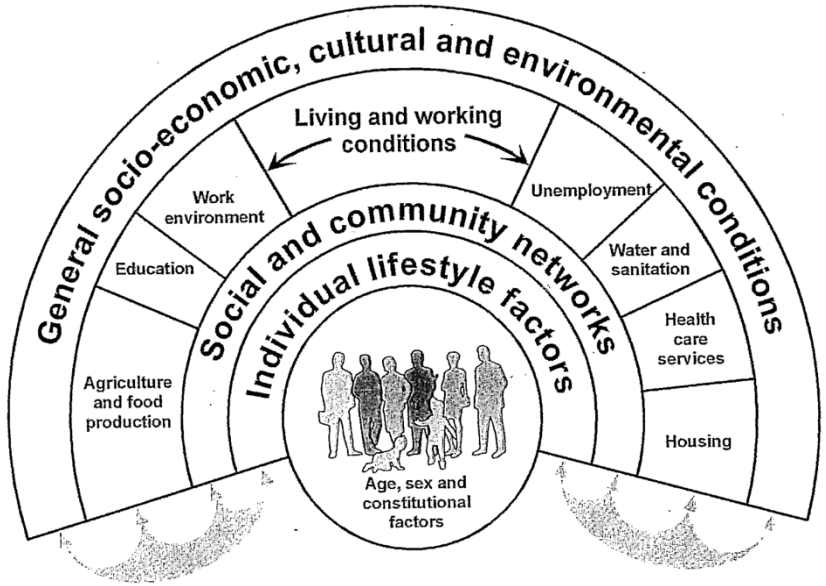

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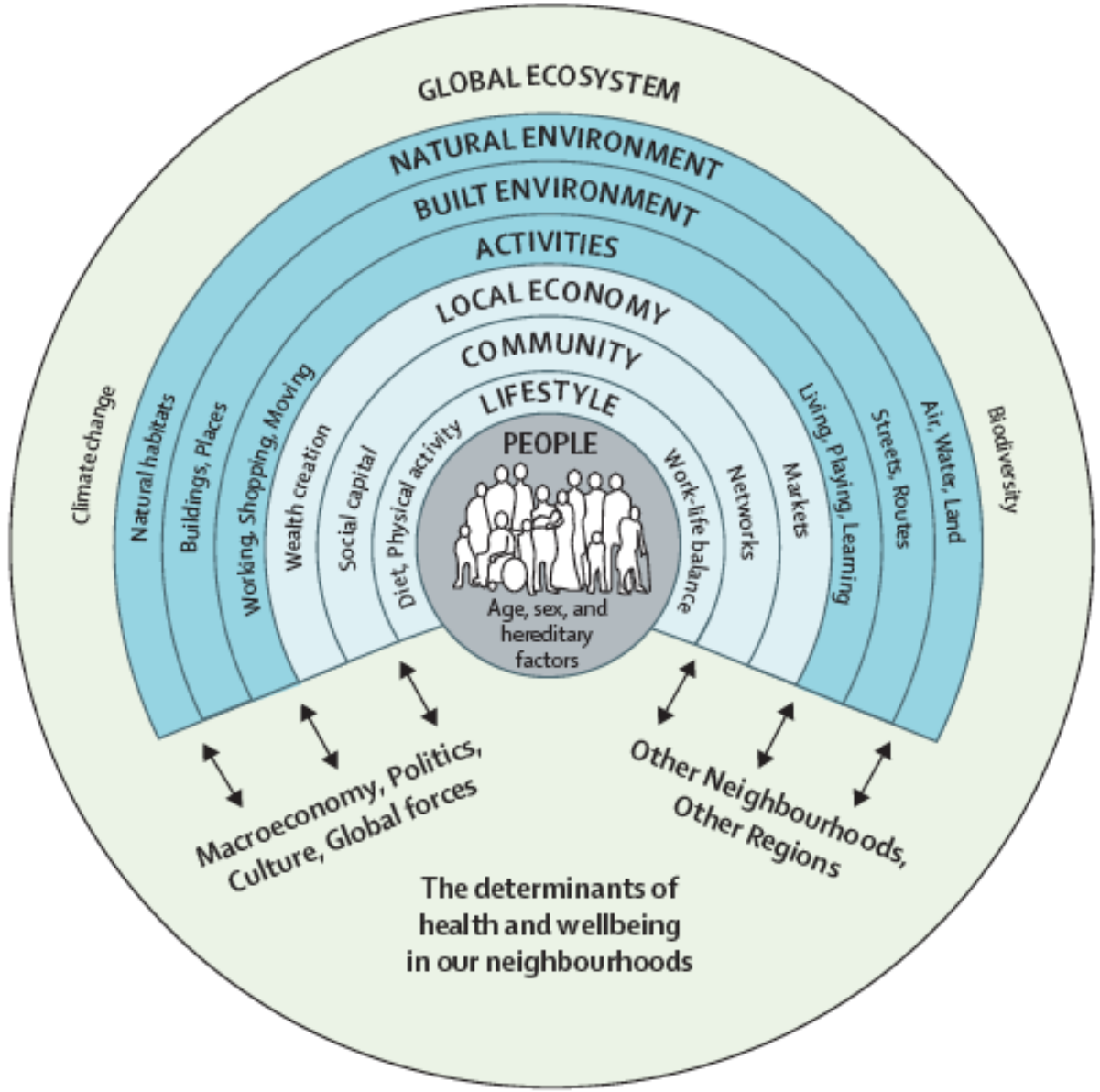
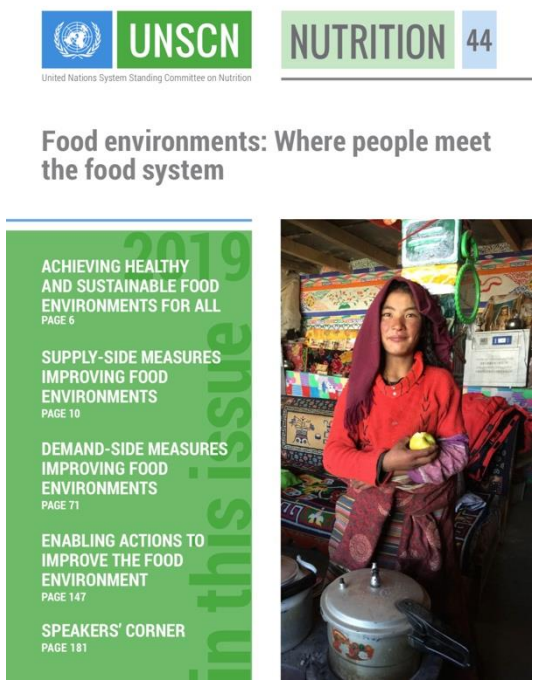
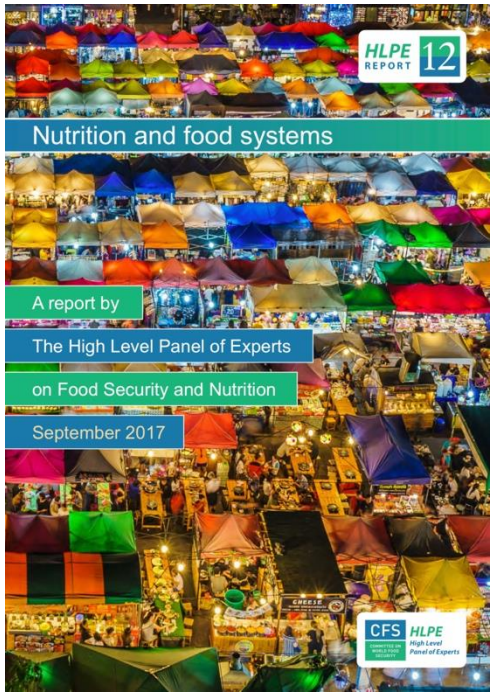
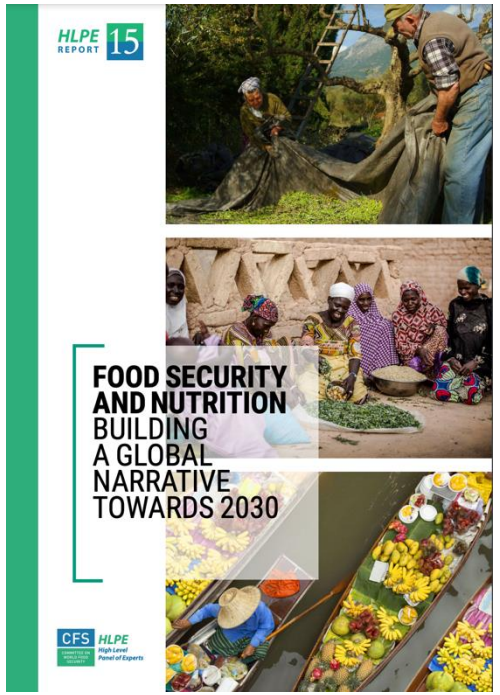


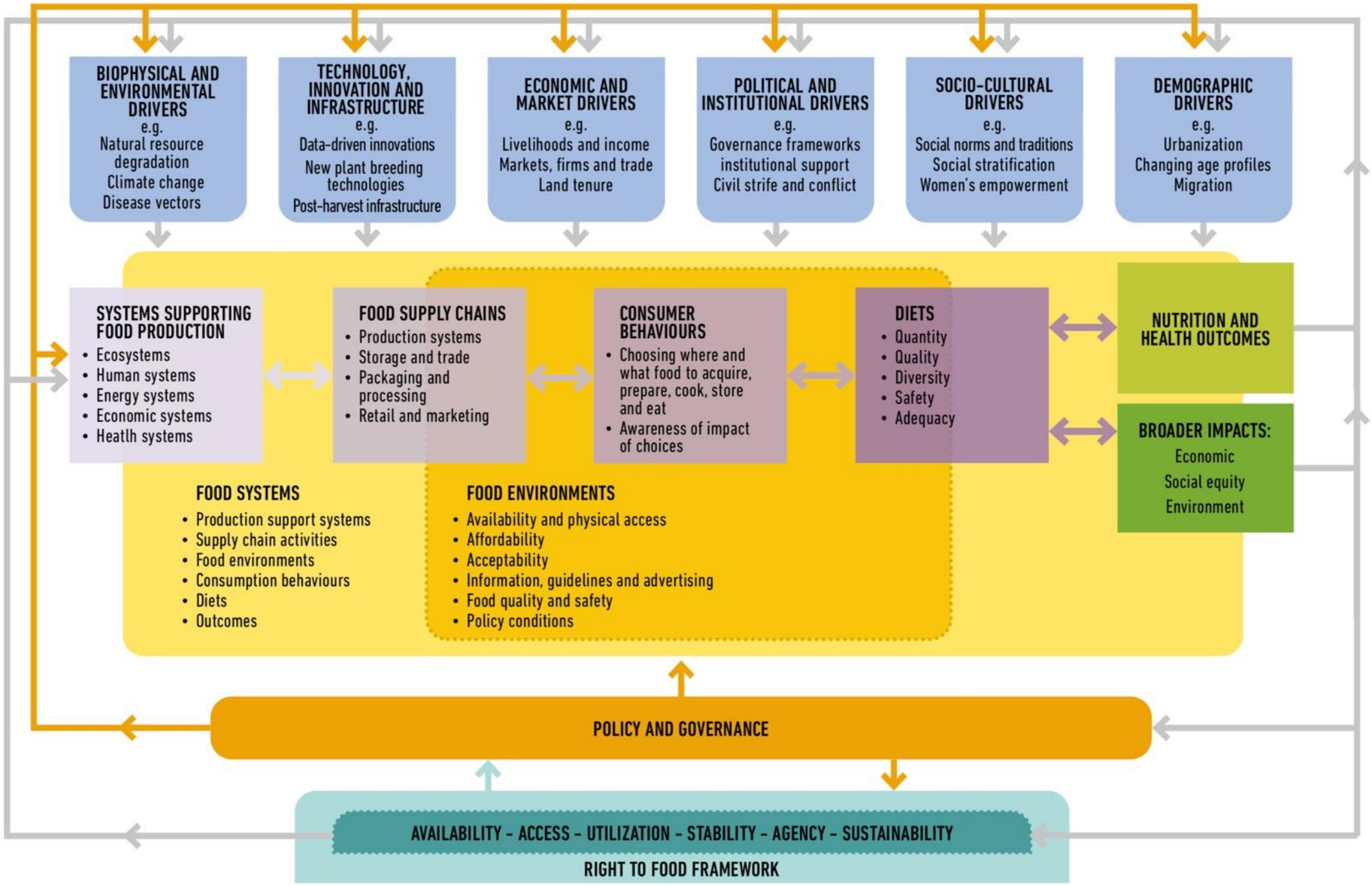
Rao M, Prasad S, Adshead F, Tissera H. The built environment and health. Lancet. 2007;370(9593):1111-3.

Growing global interest in food environments in response to the need to improve dietary, nutrition and health outcomes.

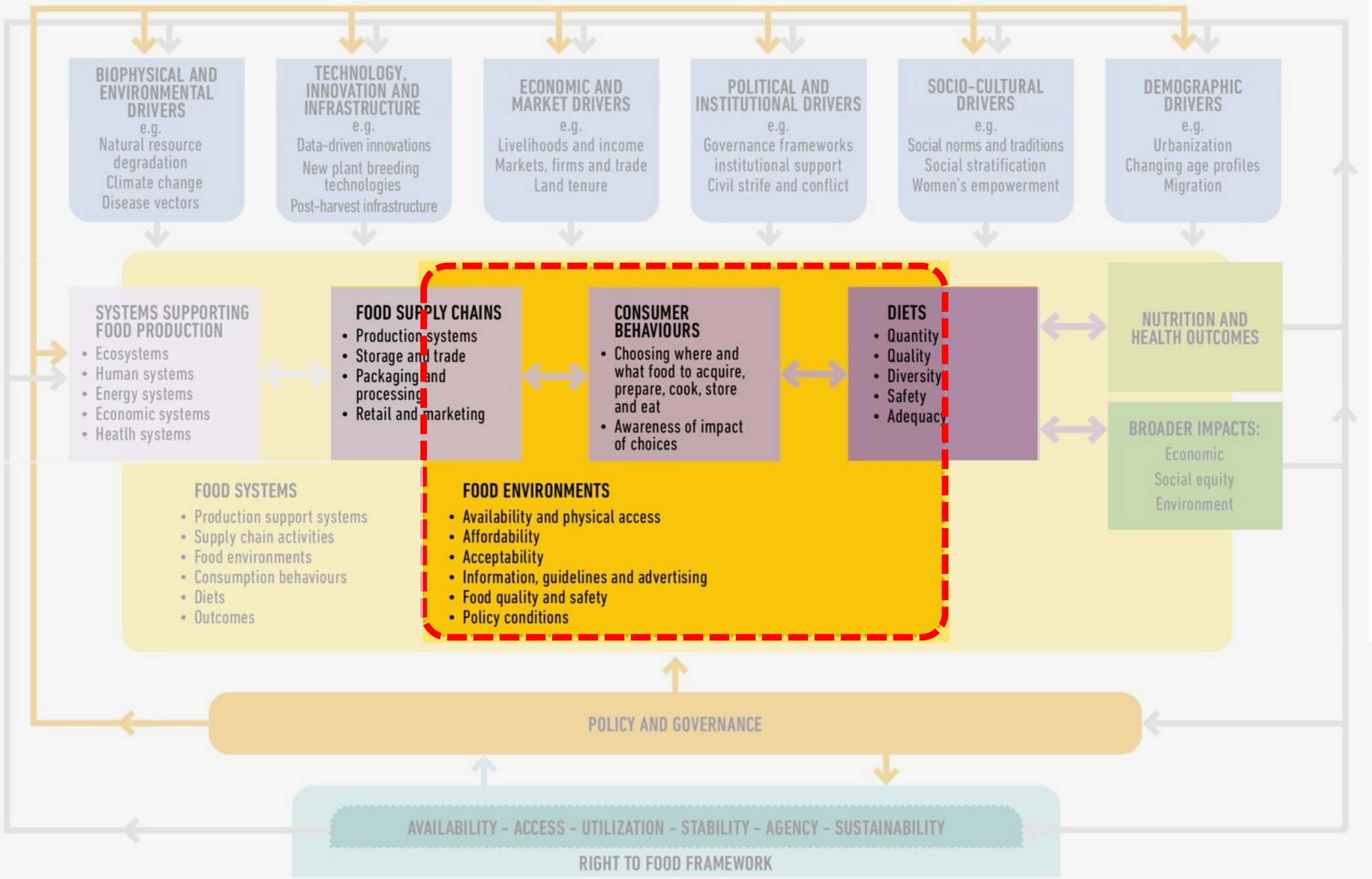







BIOPHYSICAL AND ENVIRONMENTAL DRIVERS
e.g.
Natural resource degradation
Climate change
Disease vectors
TECHNOLOGY, INNOVATION AND INFRASTRUCTURE
e.g.
Data-driven innovations
New plant breeding technologies
Post-harvest infrastructure
ECONOMIC AND MARKET DRIVERS
e.g.
Livelihoods and income
Markets, firms and trade
Land tenure
POLITICAL AND INSTITUTIONAL DRIVERS
e.g.
Governance frameworks
institutional support
Civil strife and conflict
SOCIO-CULTURAL DRIVERS
e.g.
Social norms and traditions
Social stratification
Women's empowerment
DEMOGRAPHIC DRIVERS
e.g.
Urbanization
Changing age profiles
Migration
SYSTEMS SUPPORTING FOOD PRODUCTION
• Ecosystems
• Human systems
• Energy systems
• Economic systems
• Heatlh systems
FOOD SUPPLY CHAINS
• Production systems
• Storage and trade
• Packaging and processing
• Retail and marketing
CONSUMER BEHAVIOURS
• Choosing where and what food to acquire, prepare, cook, store and eat
• Awareness of impact of choices
DIETS
• Quantity
• Quality
• Diversity
• Safety
• Adequacy
NUTRITION AND HEALTH OUTCOMES
BROADER IMPACTS:
Economic
Social equity
Environment
FOOD SYSTEMS
• Production support systems
• Supply chain activities
• Food environments
• Consumption behaviours
• Diets
• Outcomes
FOOD ENVIRONMENTS
• Availability and physical access
• Affordability
• Acceptability
• Information, guidelines and advertising
• Food quality and safety
• Policy conditions
POLICY AND GOVERNANCE
AVAILABILITY – ACCESS – UTILIZATION – STABILITY – AGENCY – SUSTAINABILITY
RIGHT TO FOOD FRAMEWORK

HLPE (2020)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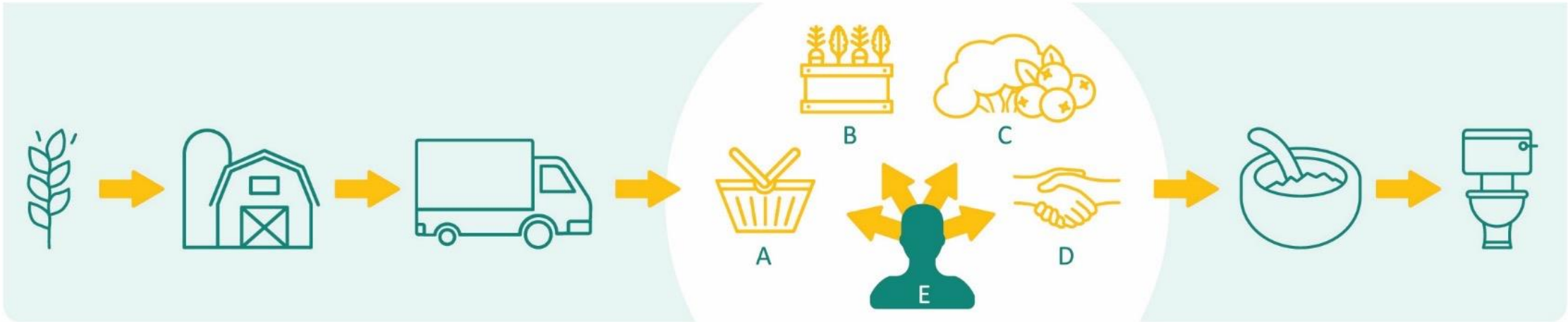
POLICY AND GOVERNANCE
AVAILABILITY - ACCESS - UTILIZATION - STABILITY - AGENCY - SUSTAINABILITY
RIGHT TO FOOD FRAMEWORK

HLPE (2020)

- Increasing consensus around the food environment as an interface within the wider food system (FAO, 2016; HLPE, 2017; Turner et al., 2018; HLPE, 2020).
- Increasing recognition that the food environment is comprised of diverse food sources (Turner et al., 2018; Downs et al., 2020):
  A. Market based (formal and informal)
  B. Own production (rural, peri-urban, urban)
  C. Wild food harvesting
  D. Transfers or gifts



Turner et al. (2018) Concepts and critical perspectives for food environment research: a global framework with implications for action in low- and middle-income countries. Global Food Security;18:93–101

https://anh-academy.org/food-environment-working-group-fewg-0

Food Environment

WORKING GROUP: TECHNICAL BRIEF

Concepts and methods for food environment research in low and middle income countries

ANH Academy
Agriculture, Nutrition & Health Academy

Turner, C., Kadiyala, S., Aggarwal, A., Coates, J., Drewnowski, A., Hawkes, C., Herforth, A., Kalamatianou, S., Walls, H. (2017). Concepts and methods for food environment research in Low- and Middle-Income Countries, Technical Brief: Agriculture, Nutrition and Health Academy Food Environments Working Group (ANH-FEWG), IMMANA programme. London, UK.

Global Food Security 18 (2018) 93–101

Contents lists available at ScienceDirect

Global Food Security

journal homepage: www.elsevier.com/locate/gfs

Concepts and critical perspectives for food environment research: A global framework with implications for action in low- and middle-income countries

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ARTICLE INFO

Keywords:
Food environments
Low- and middle-income countries
Food security
Food acquisition
Double burden of malnutrition
Non-communicable diseases

ABSTRACT

Malnutrition in all its forms currently affects one in three people globally and is considered one of the greatest public health challenges of our time. Low- and middle-income countries (LMICs) are increasingly facing a double burden of malnutrition that includes undernutrition, as well as increasing overweight, obesity and diet related non-communicable diseases. The role of food environments in shaping transitioning diets and the double burden of malnutrition in LMICs is increasingly gaining policy attention. However, food environment research to date has predominantly been undertaken in response to obesity and associated diet-related non-communicable diseases in high-income countries (HICs). Empirical research in LMICs is in its infancy. There is a need to create a cohesive research agenda to facilitate food environment research and inform action across the globe, particularly with regard to LMICs. In this paper, we address three fundamental questions: First, how can the food environment be defined and conceptualised in a way that captures the key dimensions that shape food acquisition and consumption globally? Second, how can existing knowledge and evidence from HICs be leveraged to accelerate food environment research in LMICs? Third, what are the main challenges and opportunities in doing so? We conduct a brief synthesis of the food environment literature in order to frame our critical perspectives, and introduce a new definition and conceptual framework that includes external and personal domains and dimensions within the wider food environment construct. We conclude with a discussion on the implications for future research in LMICs.

FOOD SYSTEM

FOOD ENVIRONMENT

External Domain

Personal domain

PRODUCTION, STORAGE, TRANSFORMATION, TRANSPORTATION

AVAILABILITY
Presence of food sources or products

PRICES
Monetary value of food products

VENDOR AND PRODUCT PROPERTIES
Vendor properties (typology, opening hours, services) and product properties (food quality, composition, safety, level of processing, shelf-life, packaging)

MARKETING AND REGULATION
Promotional information, branding, advertising, sponsorship, labelling, policies

ACCESSIBILITY
Physical distance, time, space and place, individual activity spaces, daily mobility, mode of transport

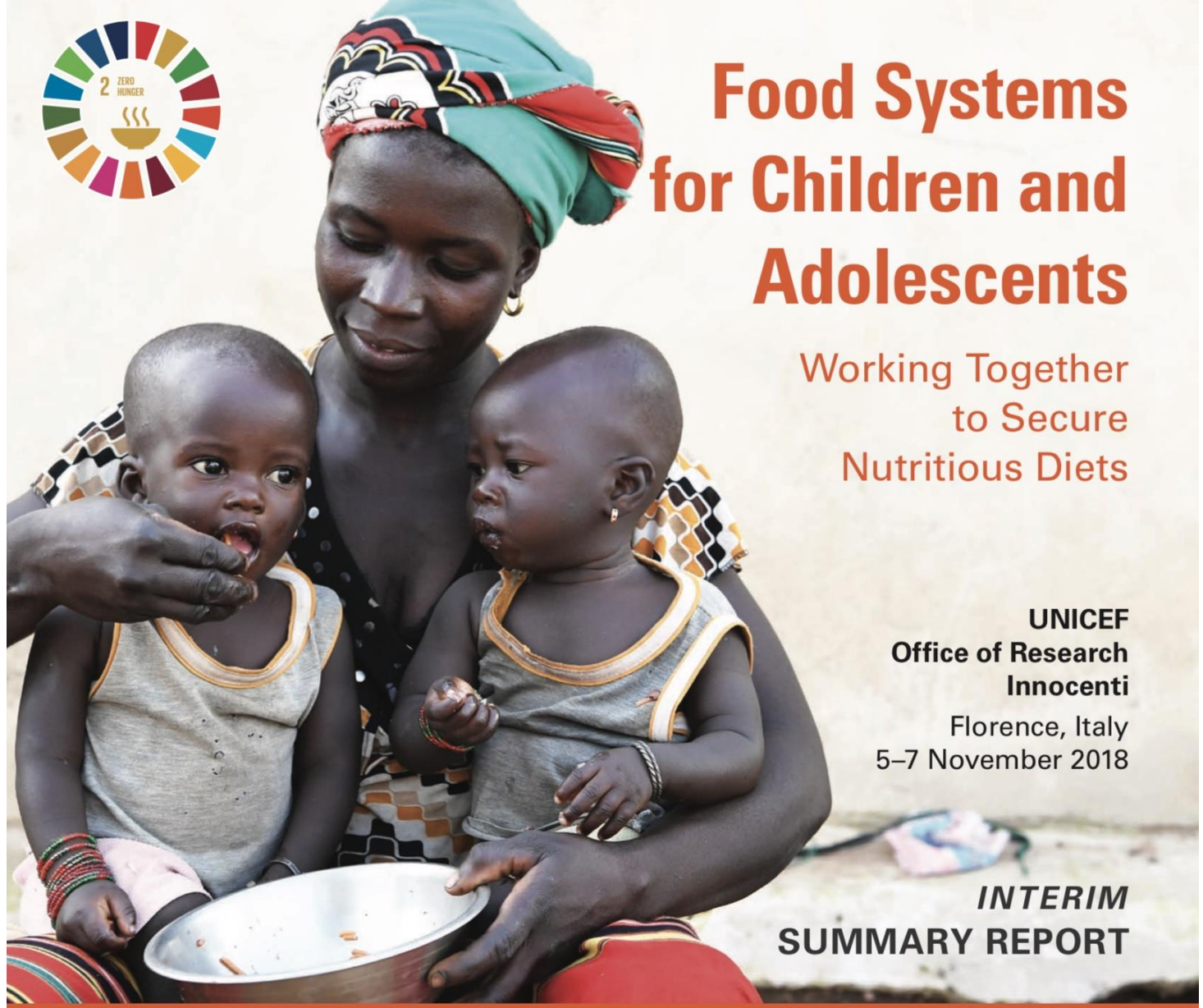
AFFORDABILITY
Purchasing power

CONVENIENCE
Relative time and effort of preparing, cooking and consuming food product, time allocation

DESIRABILITY
Preferences, acceptability, tastes, desires, attitudes, culture, knowledge and skills

ACQUISITION AND CONSUMPTION

HEALTH AND NUTRITION OUTCOMES



Food Systems for Children and Adolescents

Working Together to Secure Nutritious Diets

UNICEF
Office of Research
Innocenti

Florence, Italy
5–7 November 2018

INTERIM
SUMMARY REPORT

A GLOBAL CONSULTATION CO-HOSTED BY:

unicef

With the support of the Ministry of Foreign Affairs of the Kingdom of the Netherlands

gain
Global Alliance for Improved Nutrition

Global Food Security 27 (2020) 100436

Contents lists available at ScienceDirect

Global Food Security

journal homepage: www.elsevier.com/locate/gfs

Conceptual framework of food systems for children and adolescents

Ahmed Raza [a,*], Elizabeth L. Fox [b,c,d], Saul S. Morris [e], Roland Kupka [f], Arnold Timmer [e,g], Nita Dalmiya [f], Jessica Fanzo [b,h,i]

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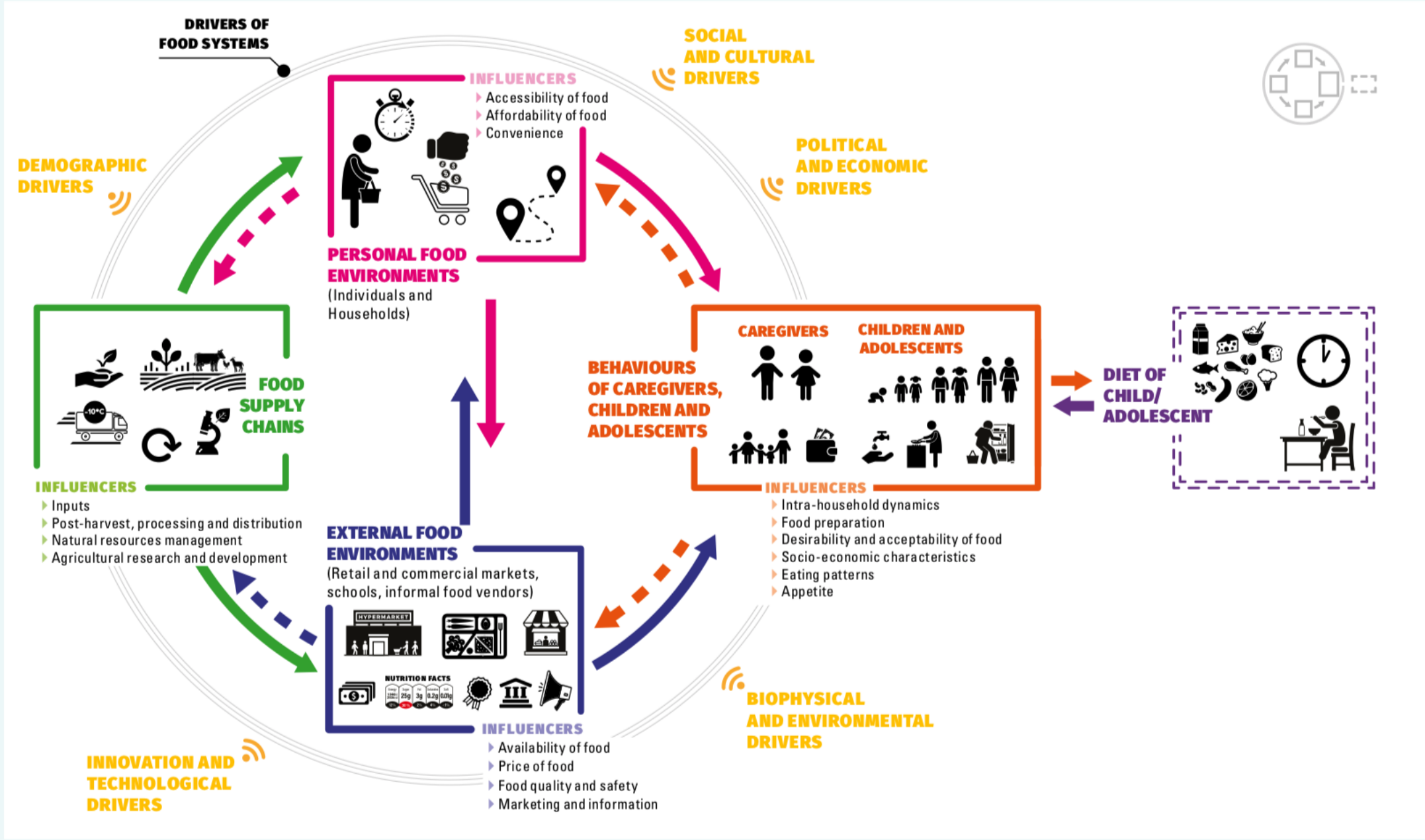
ARTICLE INFO

Keywords:
Food systems
Nutrition
Diets
Children
Adolescents
Conceptual framework

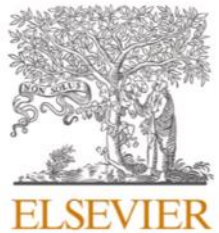
ABSTRACT

Transforming food systems is essential to ensuring nutritious, safe, affordable, and sustainable diets for all, including children and adolescents. This paper proposes a new conceptual framework (the '*Innocenti* Framework') to better articulate how the diets of children and adolescents are shaped by food systems. The framework is comprised of a set of food system drivers, determinants (namely, food supply chains, external food environments, personal food environments, and behaviors of caregivers, children and adolescents), influencers, and interactions, which together determine children's and adolescents' diets. The conceptual framework conceptualizes the dynamic linkages between the elements of food systems, and highlights the importance of continuously shaping food systems to deliver nutritious, safe, affordable, and sustainable diets to children and adolescents.



UNICEF and GAIN (2019); Raza et al., (2020)

Global Food Security 32 (2022) 100594



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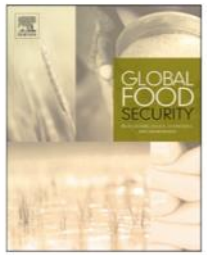


Research article

Consumer experiences of food environments during the Covid-19 pandemic: Global insights from a rapid online survey of individuals from 119 countries

Lydia O'Meara [a,**], Christopher Turner [a,*], Denise Costa Coitinho [b], Stineke Oenema [b]

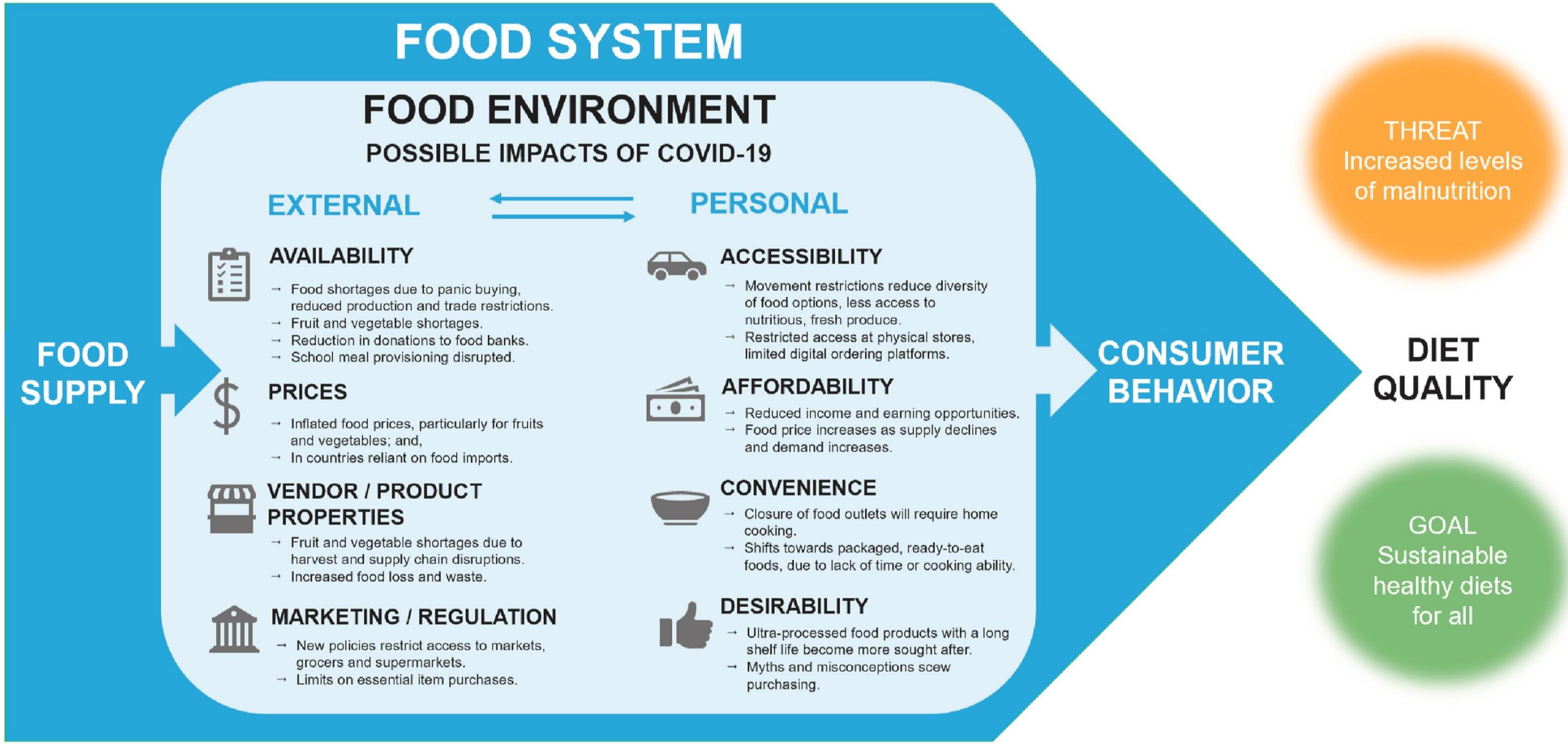
[a] Natural Resources Institute, University of Greenwich, UK
[b] United Nations Nutrition, Italy

ARTICLE INFO

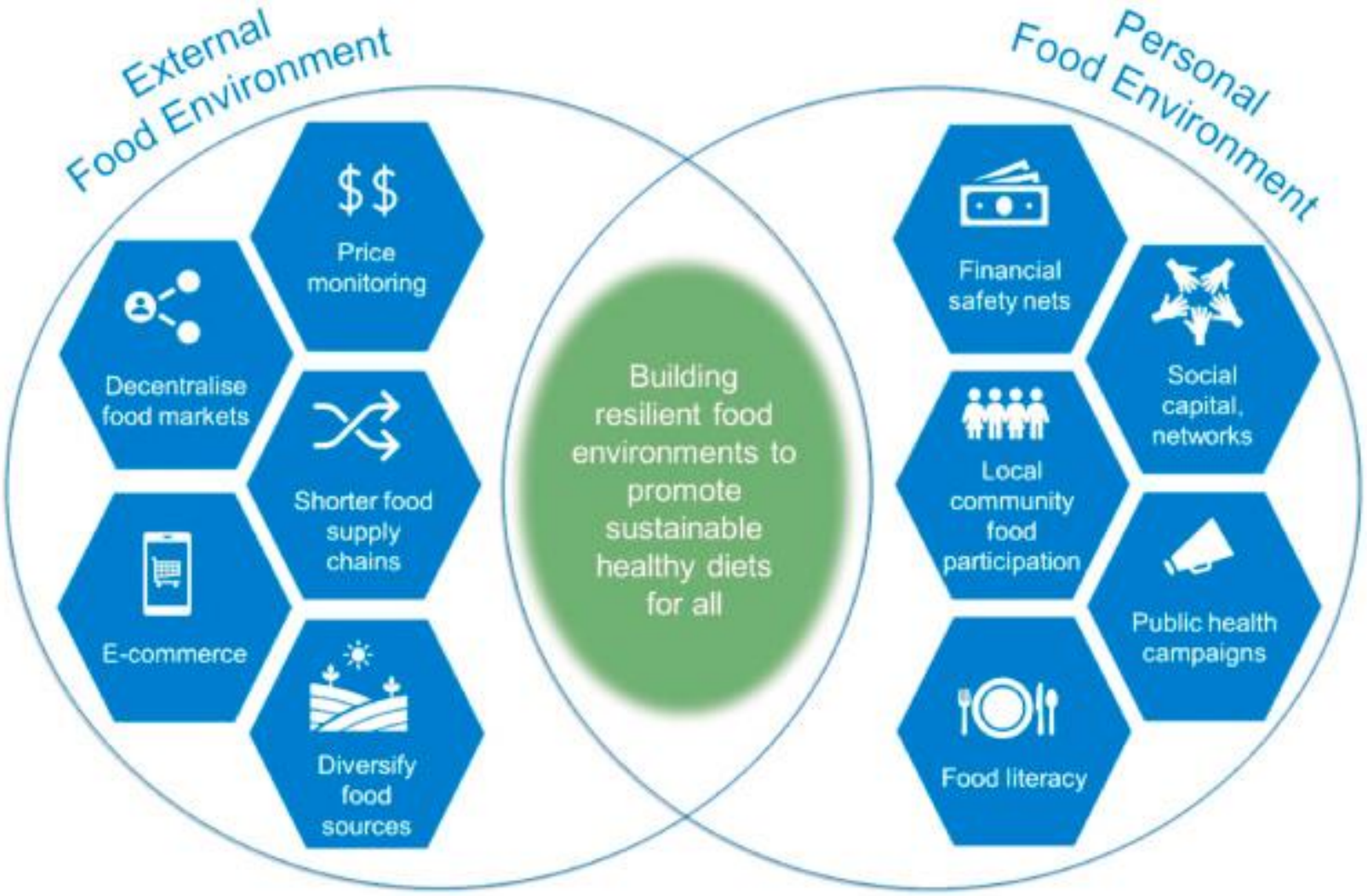
Keywords:
Covid-19
Food environments
Food systems
Food security
Resilience
Sustainable healthy diets

ABSTRACT

This study investigates consumer experiences of food environments and food acquisition practices during the Covid-19 pandemic. Our rapid assessment online survey featured a convenience sample of 2015 individuals from 119 countries, spanning Western Europe, North America, Latin America, Asia-Pacific, and Africa. Data collection took place in April 2020 during the second month of the pandemic. Participants were recruited via existing networks of the United Nations System Standing Committee on Nutrition, through social media, and by snowballing. The majority of participants were female (71.9%), from low- and middle-income countries (51.0%), and working in nutrition or healthcare (39.3%). Qualitative thematic analysis and descriptive statistics reveal a series of common global experiences related to food availability and accessibility, food prices and affordability, food acquisition practices, and food preparation and consumption. The importance of community food participation, food sharing, and resource allocation are highlighted, along with increasing awareness of healthy diets and food waste. We identify ten synergistic policy entry points to: 1) build resilient and equitable food environments resistant to stresses and shocks; 2) harness positive dietary-related behaviors manifested during the pandemic; and, 3) mitigate the projected nutrition crisis and promote sustainable healthy diets for all.



O'Meara et al., (2021) Consumer experiences of food environments during the Covid-19 pandemic: global insights from a rapid online survey of individuals from 119 countries, *Global Food Security,* 32



Ten policy entry points to build more resilient food environments and harness positive dietary-related behaviors manifested through the Covid-19 pandemic

O'Meara et al., (2021) Consumer experiences of food environments during the Covid-19 pandemic: global insights from a rapid online survey of individuals from 119 countries, *Global Food Security,* 32

The Lancet Planetary Health
Open access
35.7 CiteScore
21.6 Impact Factor

Conceptual framework of women's food environments and determinants of food acquisition and dietary intake in low- and middle-income countries: a scoping review

Lydia O'Meara, Julia de Bruyn, Tammy Hope, Marta Fajó-Pascual, Rachel Hodge, Christopher Turner, Mina Stoynova, Kate Wellard, Elaine Ferguson, Paula Dominguez-Salas

https://doi.org/10.1016/ j.lanplh.2025.06.004

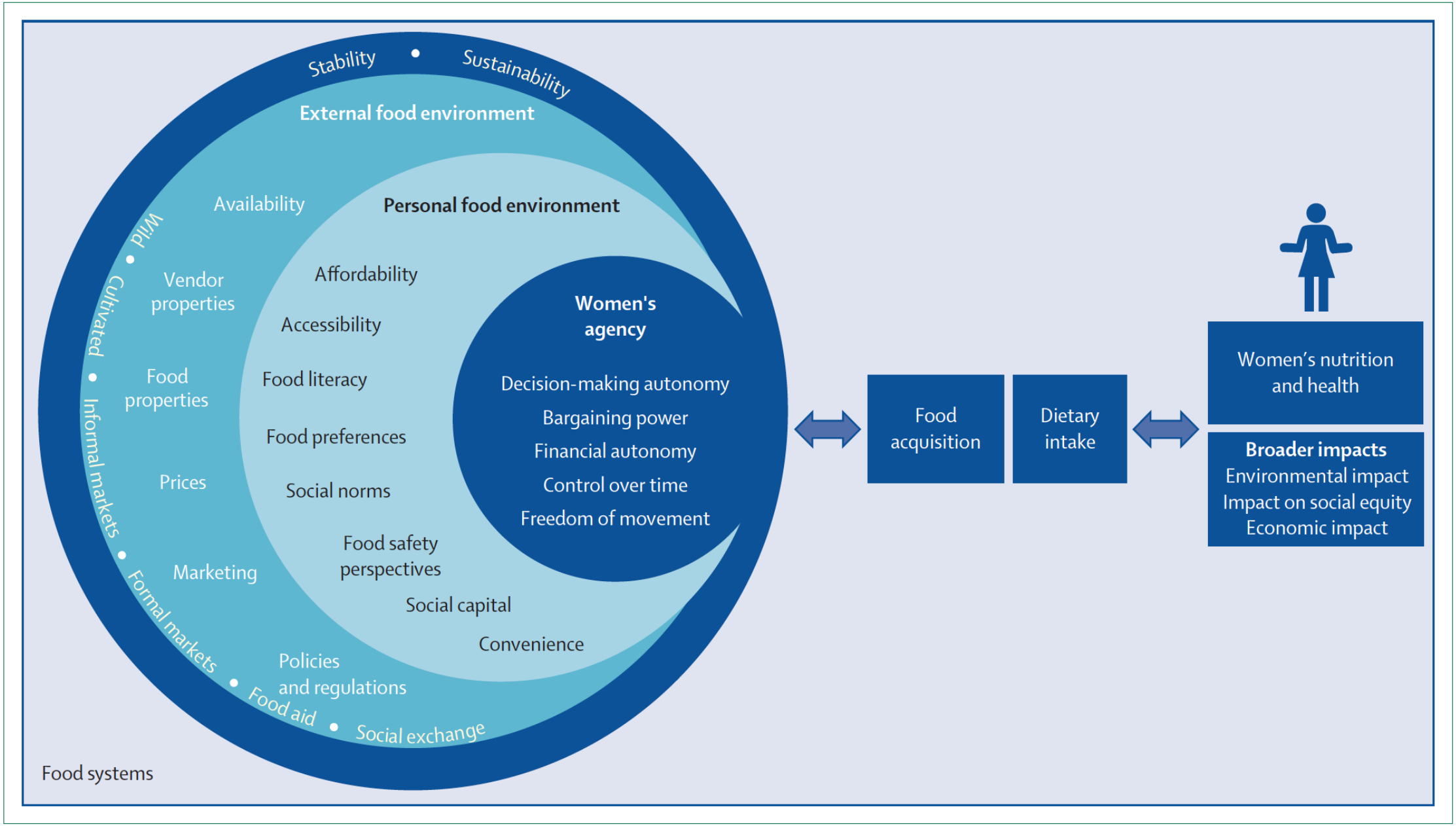


Figure 3: **Conceptual framework of women's food environments, presenting key determinants of food acquisition practices and dietary intakes among women in LMICs, derived from 143 themes identified from the literature**

https://doi.org/10.1016/ j.lanplh.2025.06.004

Matmiljö i Sverige – En kartläggande litteraturöversikt

Publicerad: 30 augusti 2023
Uppdaterad: -
Artikelnummer: 23186

ANH2023

8th Annual Agriculture, Nutrition and Health Academy Week

19-30 June 2023

ONLINE AND IN MALAWI

19 - 21 June 2023
Learning Labs (online only)

26 June 2023
Learning Labs (in-person, in Malawi only)

27 - 30 June 2023
Research Conference (in-person, in Malawi and online)

Third Africa Food Environment Research Network Meeting.

#FERN2023.**THEME**: Facilitating the identification, collation, and valorisation of food environment research, policy, and practice in Africa.

01 to 03 November 2023 ONLINE
Every day from 12:00 pm GMT+0

Food Environment Research

Current developments and future directions

Insights from the ANH Academy Food Environment Working Group and IMMANA grantees (and you!)
16:40-18:10


Giacomo Zanello
University of Reading (UK)


Christopher Turner
University of Greenwich / NRI (UK)


Shauna Downs
Rutgers University (US)


Nilupa Gunaratna
Purdue University (US)


Fiorella Picchioni
University of Bristol (UK)


Richmond Aryeetey
University of Ghana (Ghana)


Mark Spires
University of Greenwich / NRI (UK)

ANH2025 ONLINE AND IN TANZANIA

#ANH2025 ANH-Academy.org/ANH2025

Food Environment

WORKING GROUP: TECHNICAL BRIEF

Re-visiting key concepts for food environment research – a revised globally applicable framework for research, policy and practice

Turner, C., Ambikapathi, R., Battersby, J., Blake, C. E., Coates, J., Daivadanam, M., Delobelle, P., Downs, S., Drewnowski, A., Hawkes, C., Holdsworth, M., Laar, A., Leroy, J., Nugent Zgambo, O., O'Meara, L., Salm, L., Spires, M., Talsma, E.F., Wairimu, S., Walls, H., Kadiyala, S. (2025)

ANH Academy Science-Policy Platform

Development of the 2018 framework

The Working Group set out to develop a globally applicable food environment framework, informed by a literature review and consultation held at ANH 2017. The final version of the framework was published by Turner et al., (2018) in a journal article outlining key concepts for food environment research. The framework took a socio-ecological approach – focusing on interactions between people and their environment – and applied this framing to present the food environment as a key interface within the wider food system (Figure 1).

The conceptual framework (Figure 2) delineated the external and personal food environment domains, each with a series of dimensions collectively considered to shape food acquisition and consumption practices. In doing so, this framework sought to provide a theoretical underpinning to food environment research, and together with other wider food systems frameworks at the time (e.g. HLPE, 2017), helped to situate the food environment within the broader food systems research agenda.

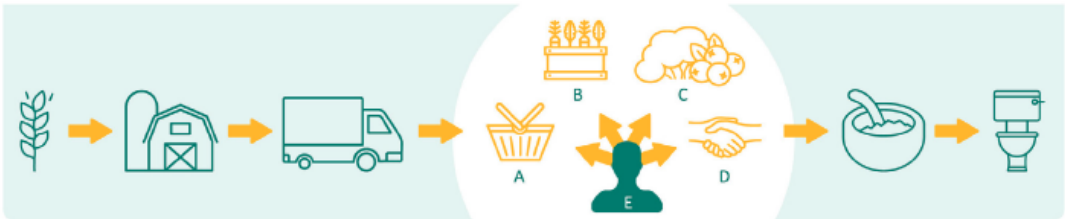


Figure 1: The food environment interface concept published in Turner et al., (2018), outlining key food sources including; (A) market-based, (B) own production, (C) wild food harvesting, and (D) transfers/gifts.

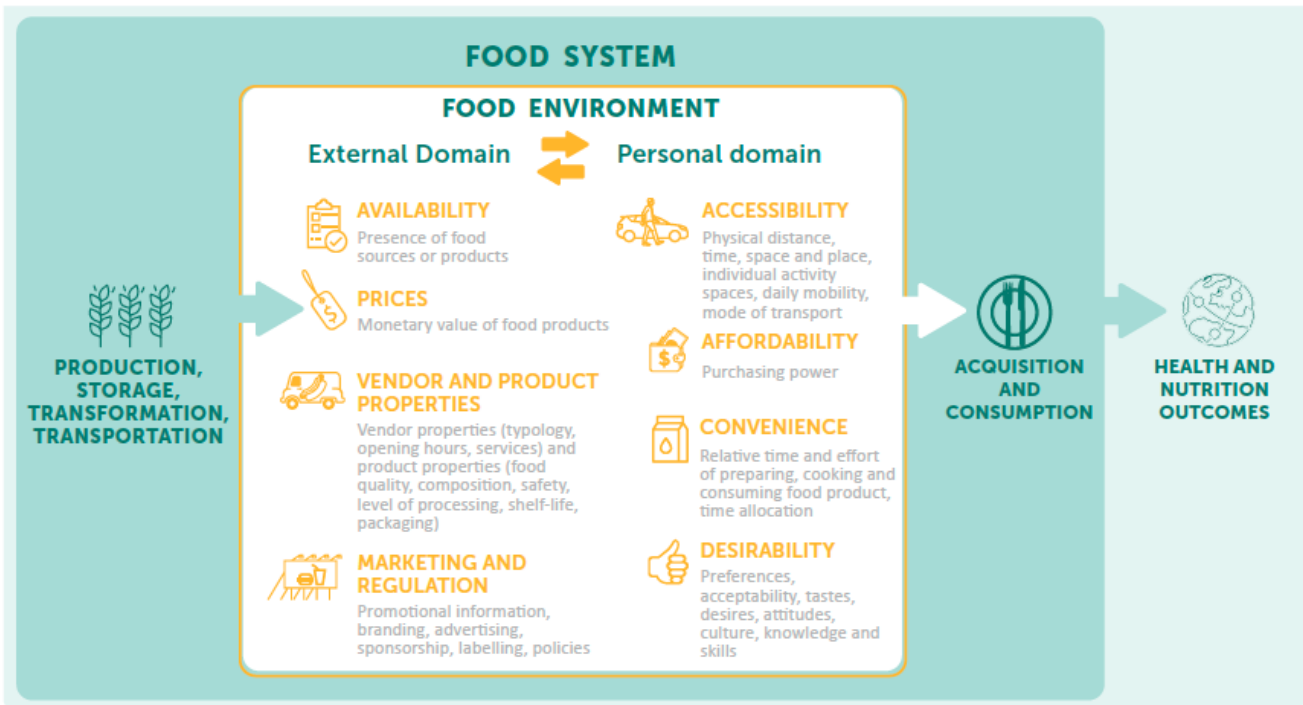


Figure 2: The globally applicable food environment framework (Turner et al., 2018).

Application of the 2018 framework and consultation process

Since the publication of the Turner et al., (2018) article, the conceptual framework has been influential in shaping the global research agenda, programming, policy and practice (IMMANA Impact Case Study[1]). During this time, the field of food environment research has continued to grow and evolve, as has been documented in several systematic reviews of the literature (e.g. Turner et al., 2019; Osei-Kwasi et al., 2020; Granheim et al., 2021; Westbury et al., 2021; Gupta et al., 2023) – several of which have been explicitly informed by the framework.

More recently, several studies have published critical appraisals and insights on the Turner et al., (2018) framework, grounded in the application and interrogation of the framework (Constantinides et al., (2021); Turner et al., (2022)), as well as systematic reviews of the literature (Ambikapathi et al., 2024; O'Meara et al., 2025).

In 2023, the Working Group was reconvened with a broadened membership with a view to revisiting the key concepts and revising the Turner et al., (2018) framework based on the learnings from its application across diverse settings, as well as critical insights and a stakeholder consultation process (Box 1). The reconvened Working Group features an interdisciplinary team of 21 members, including 17 internationally recognized food environment researchers from across the globe, and four PhD students.

Box 1: Consultation process

2023

ANH Academy Week in Malawi, hybrid in-person and online side event consultation (~90 attendees).

Online consultation survey launched at the Africa Food Environment Research Network (FERN) in November 2023 (28 respondents)

2024

Working group consultation meetings 2023-2024 – 7 meetings to collectively review existing food environment frameworks as well as the review of stakeholder feedback from two consultations.

2025

Iterative development of draft framework

[1] https://www.anh-academy.org/anh-academy/working-groups/food-environments-working-group

Revised framework for 2025
(a work-in-progress)

A revised 'work-in-progress' version of the conceptual framework is presented in Figure 3 below. The fundamental foundational concepts from the Turner et al., (2018) framework have been retained, including the framing of the food environment as a key interface within the wider food system, and the external and personal domains that shape food acquisition and consumption.

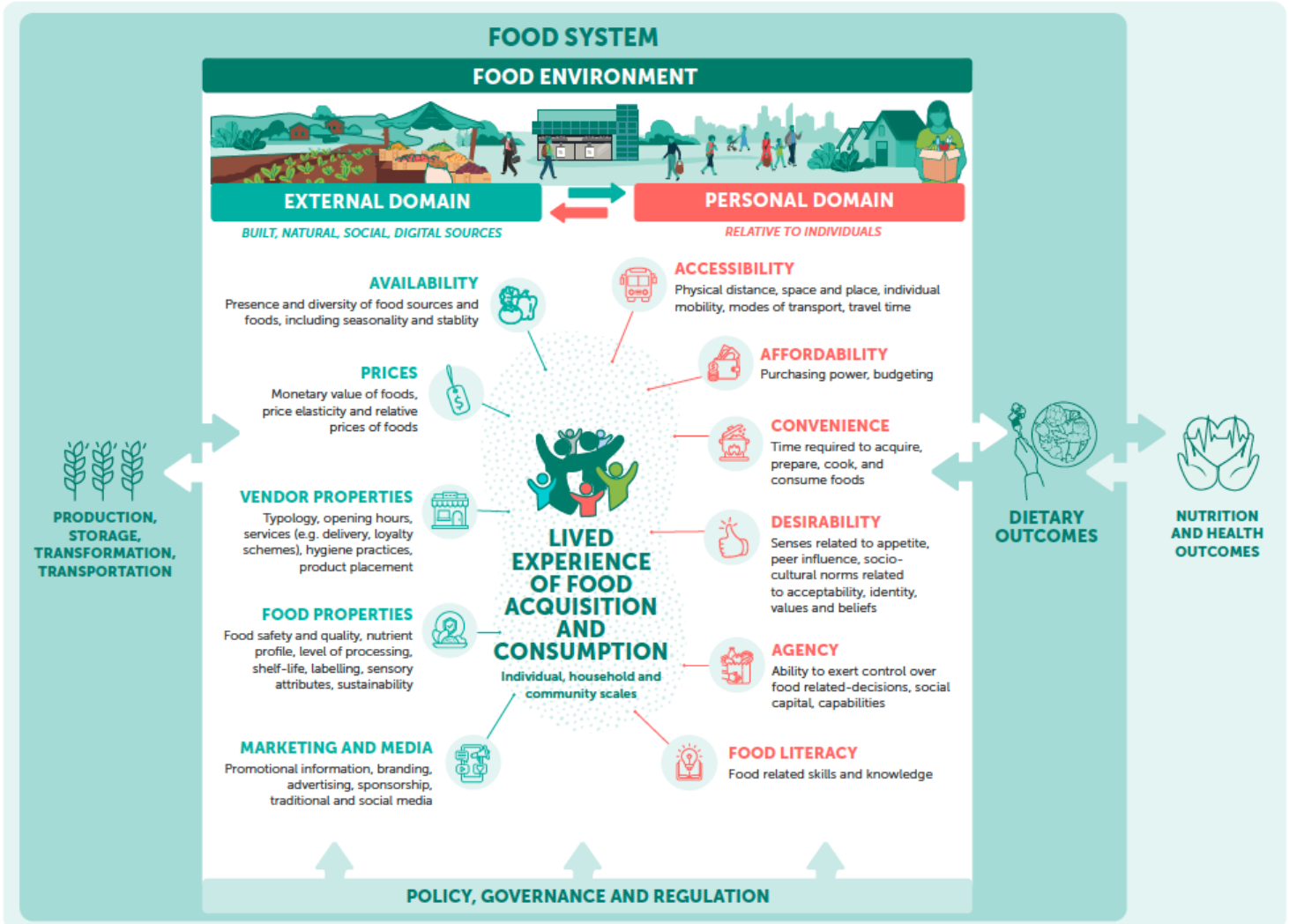
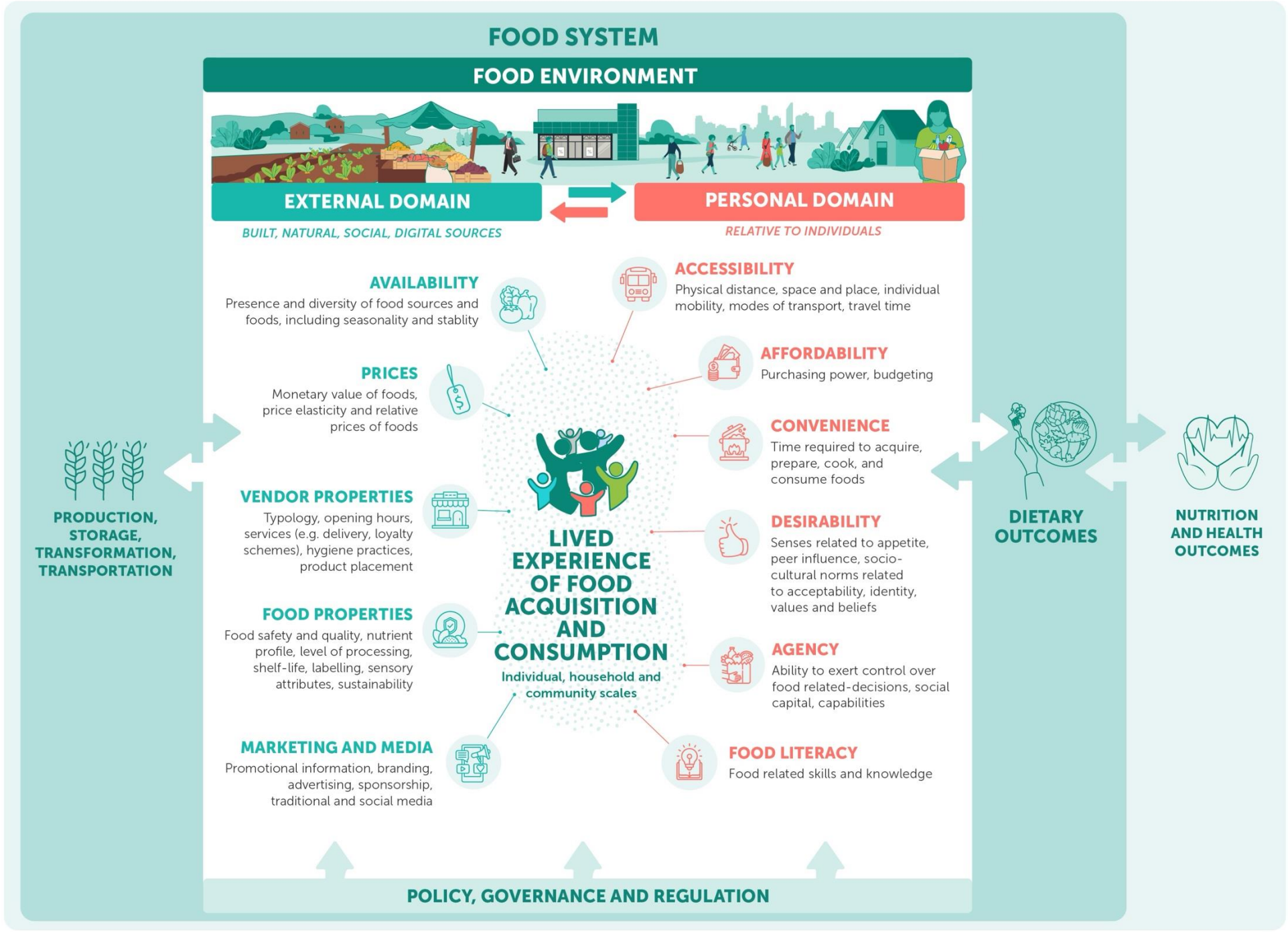
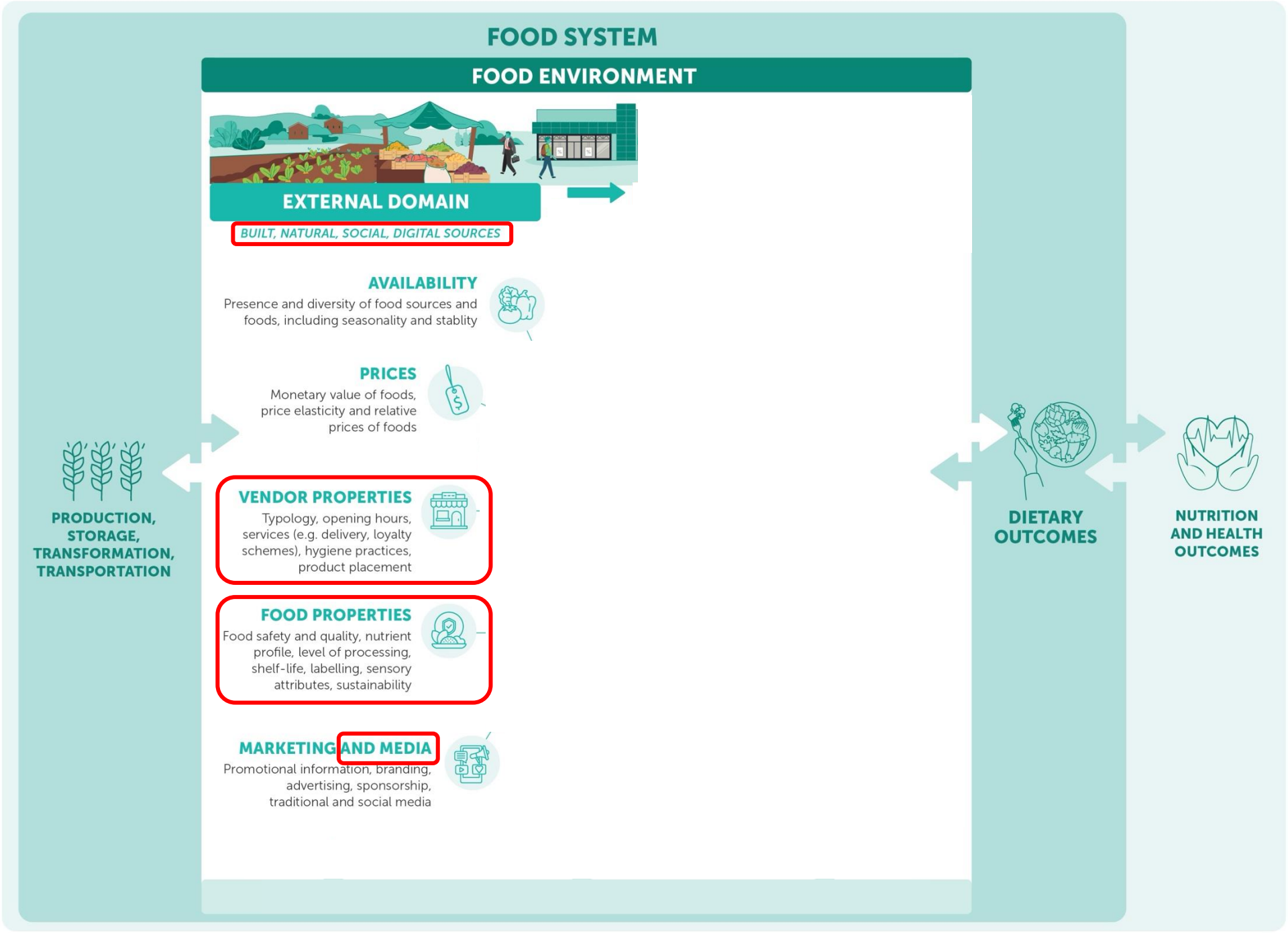


Figure 3: A revised globally applicable framework for food environment research, policy and practice.



Turner et al., (2025)

Turner et al., (2025)

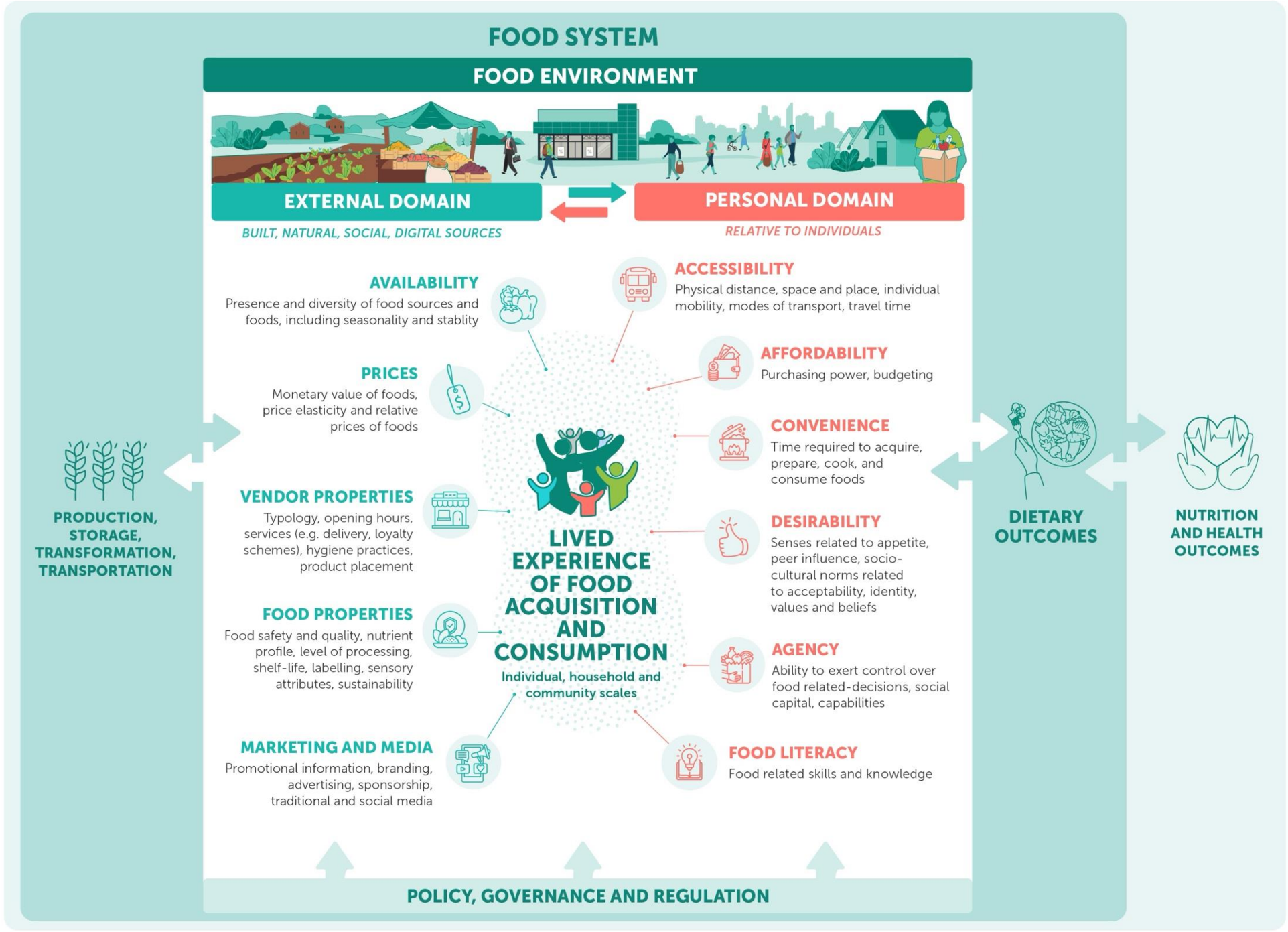


Turner et al., (2025)

Turner et al., (2025)

Turner et al., (2025)

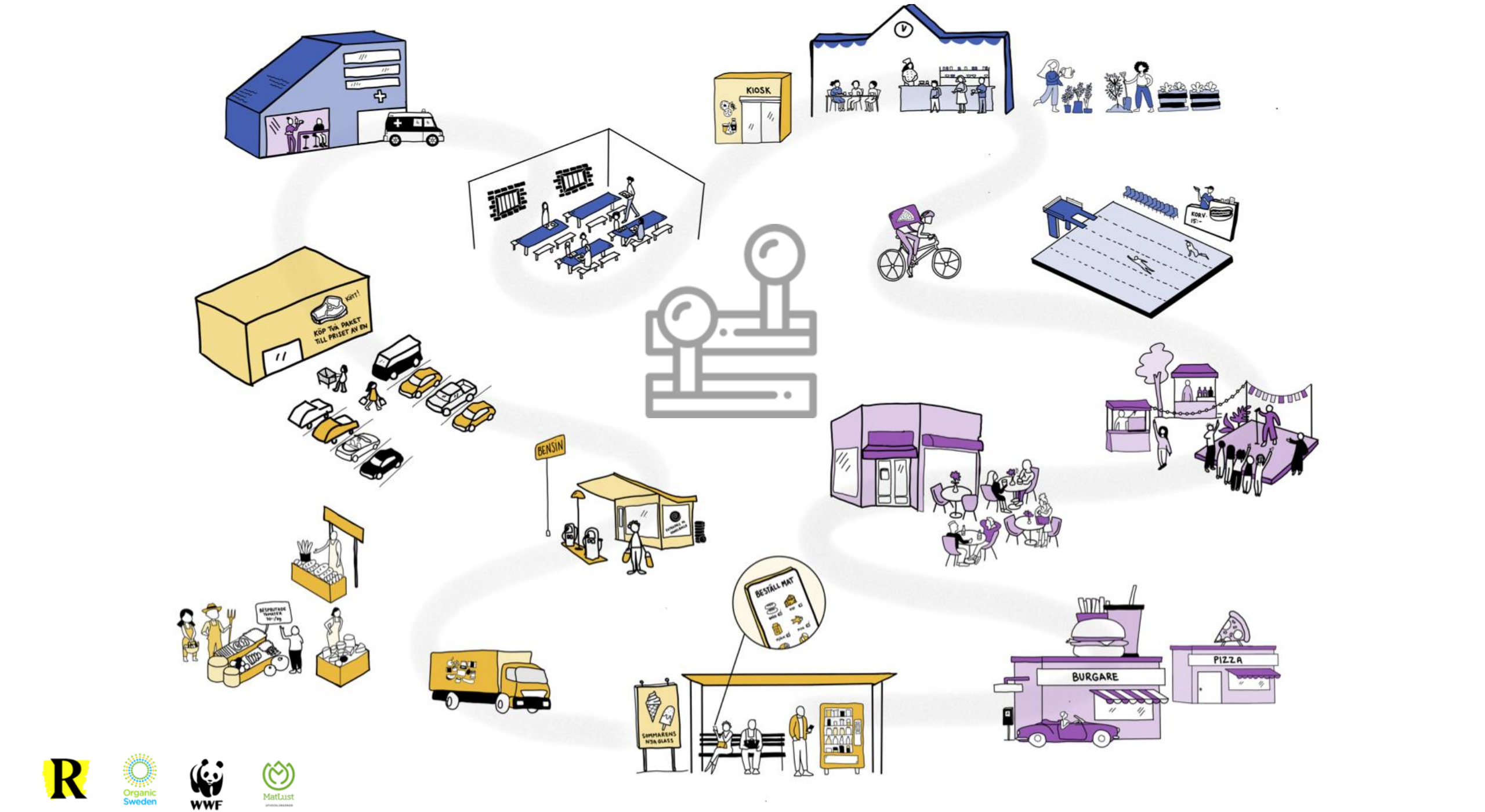
Turner et al., (2025)



Turner et al., (2025)

Cristopher Turner
Forskare
University of Greenwich

“Matmiljöer är platser i vardagen där vi möter, köper och konsumerar mat. Vad skulle kunna vara en bättre punkt att fokusera våra ansträngningar på för att förbättra kost, näring och hälsa? För att uppnå detta måste vi engagera samhällen och intressenter i forskningen, förstå levda erfarenheter och tillsammans utforma platsbaserade lösningar.”


KIOSK
KÖT!
KÖP TVÅ PAKET TILL PRISET AV EN
BENSIN
BESTÄLL MAT
SOMMARENS NYA GLASS
BURGARE
PIZZA

Fiscal

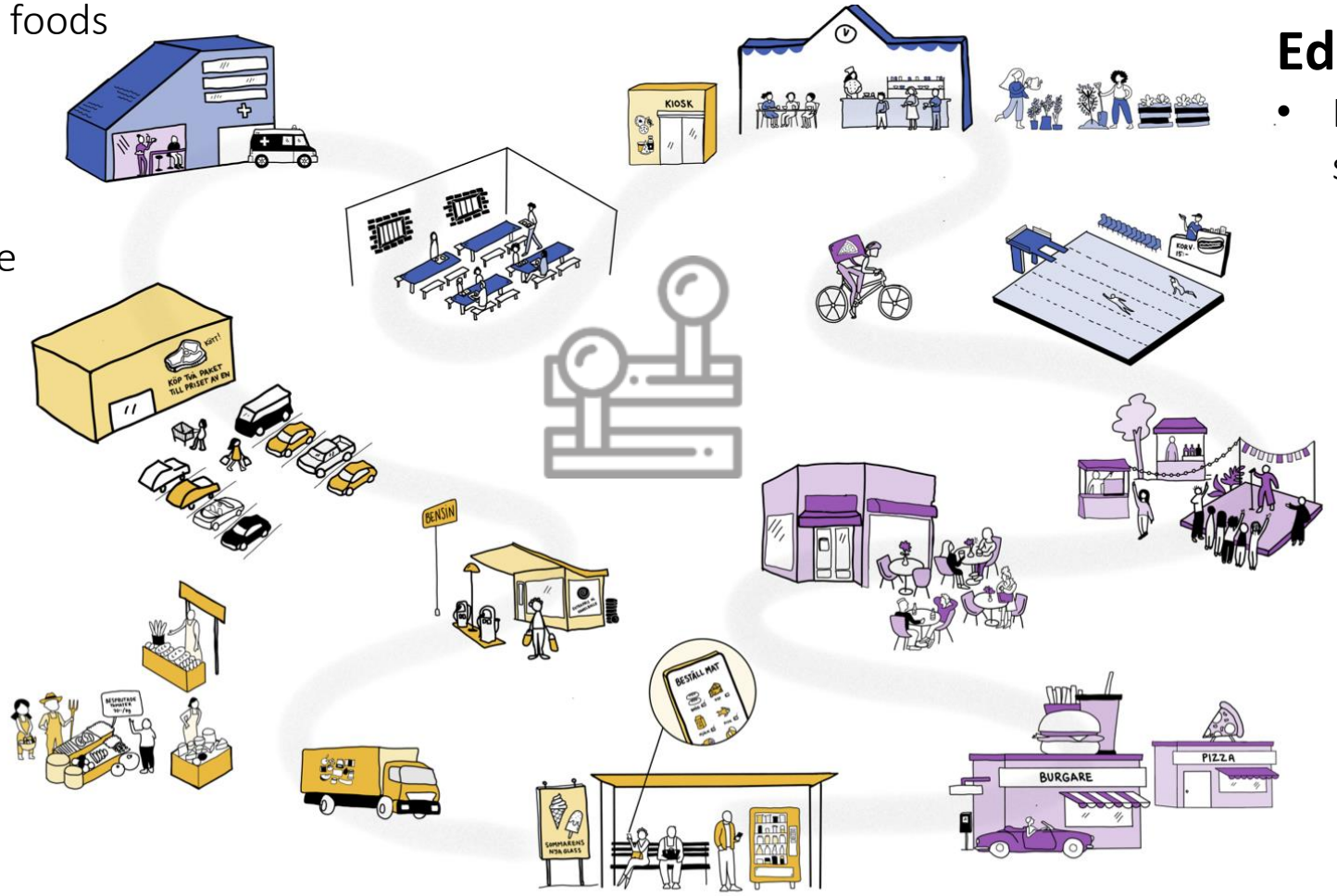
- Taxation of unhealthy foods
- Subsidies for healthy foods

Environmental

- Restriction of the sale of unhealthy foods
- Public procurement and services policies

Informational

- Food based dietary guidelines
- Front of pack nutrition labelling
- Restrictions on marketing and media (physical, digital, social)



Educational

- Improving food literacy, skills and knowledge

Engagement

- Community co-design of place-based interventions and solutions – e.g. regional, city scale, etc.!

Thank you!
Q&A

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Innovative Methods and Metrics for Agriculture and Nutrition Actions

Food Environment
WORKING GROUP

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