



# A food environment typology and transitions over time

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# Overview of talk

To describe a food  
environment typology

To describe the  
transitions in food  
environments over time

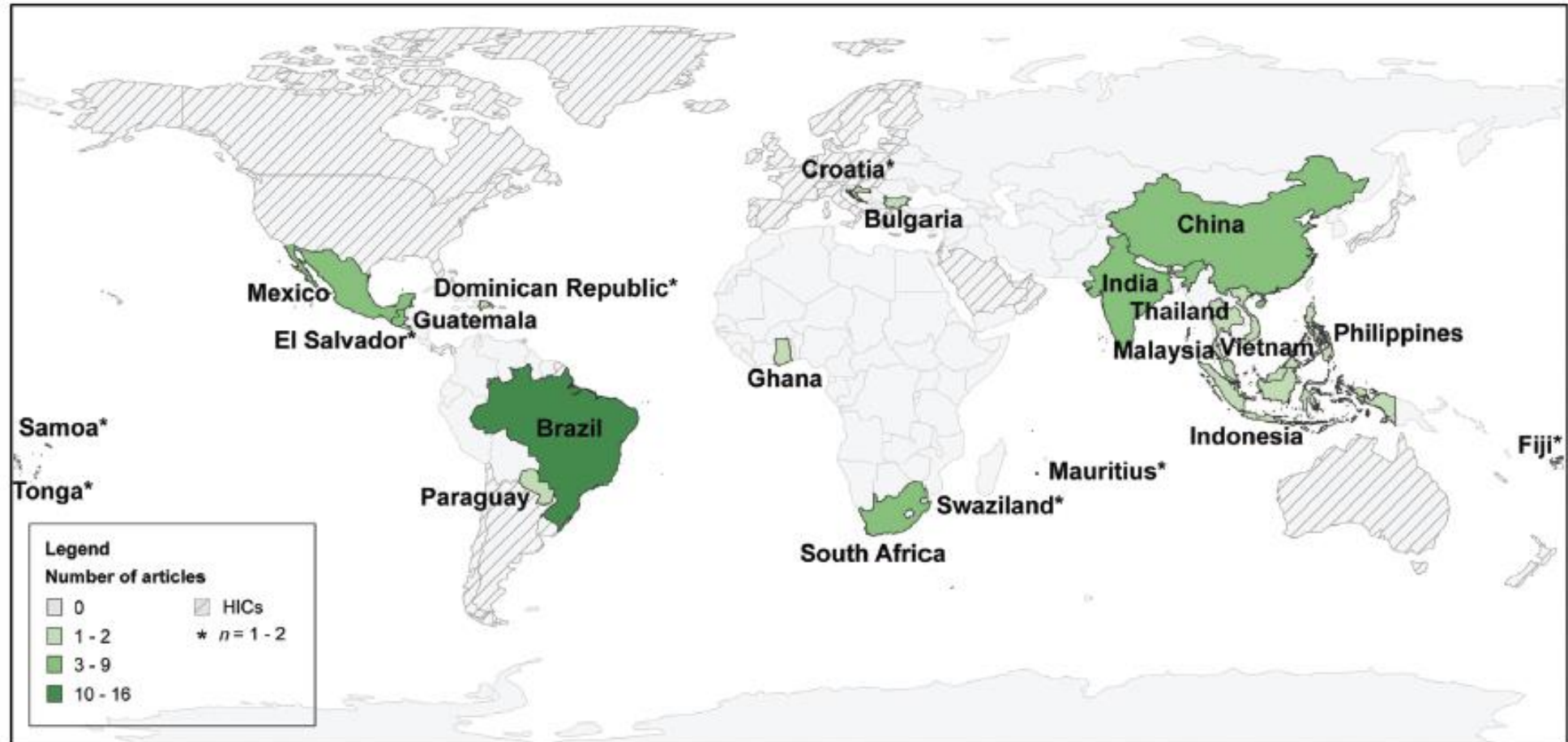
# Food environment types

- The food environment literature has been primarily focused on high-income countries
- The food environments that consumers interface with in low- and middle-income country contexts often have different characteristics
- There is a need to go beyond examining modern retail when examining food environments

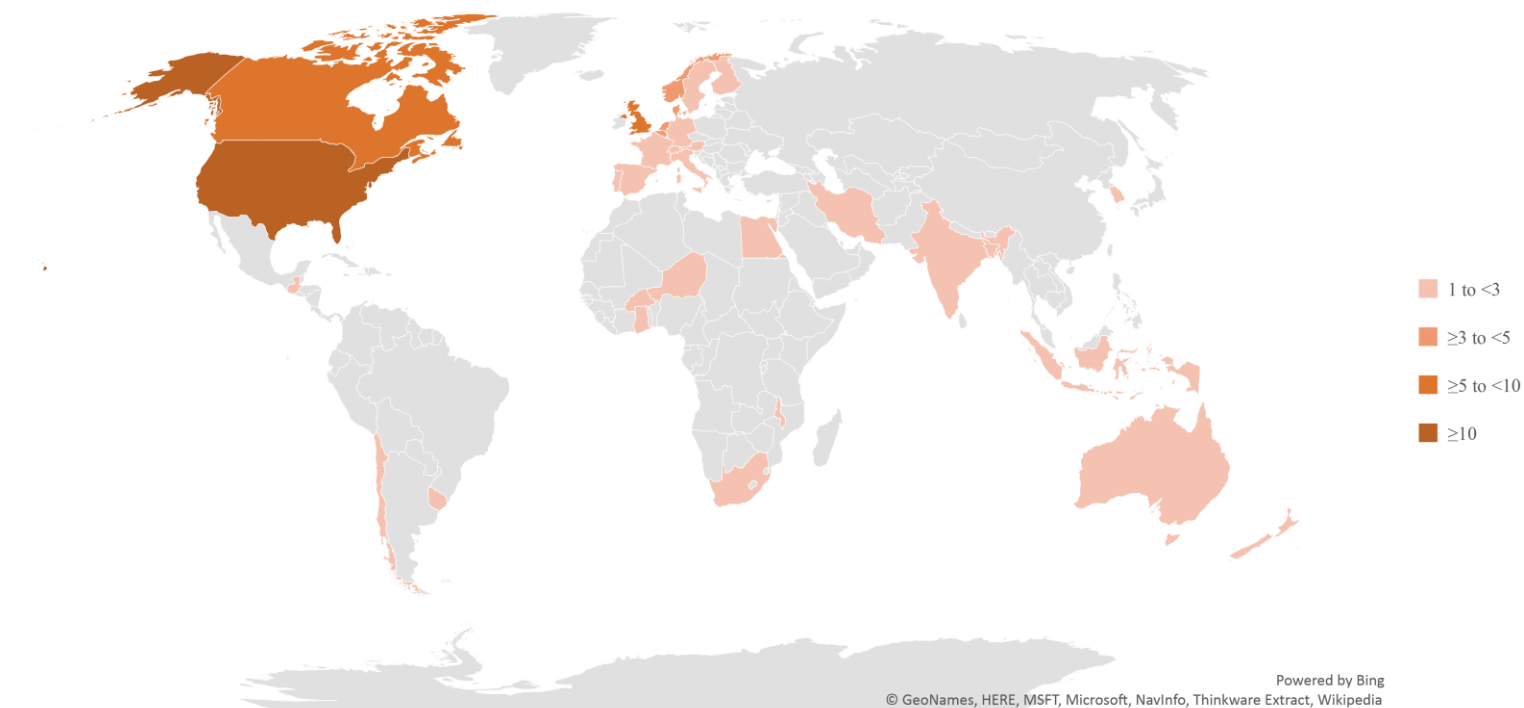




# Food environment research in LMICs



# Food environment interventions targeting children and adolescents



**There are major geographical gaps in the evidence base**

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### Missing Wild and Cultivated Environments in Food Environment Measures

By *Selena Ahmed and Anna Herforth*


From our field work and food environment assessments in rural and Indigenous communities around the world, we have come to recognize the critical role of wild and cultivated biodiversity and subsistence foods in supporting food security, dietary quality, and cultural identity. Yet, when reviewing the literature on food environments, we notice a major gap regarding the dietary contribution of wild and cultivated food environments (Figure 1) that include subsistence foods procured from forests, home gardens, fields, pasture, and other agricultural systems (Figure 2).

Figure 1



a. Wild food environment (forests and agro-forests)

Photo credit: Selena Ahmed



b. Cultivated food environment (home gardens)

Photo credit: Selena Ahmed

# Wild and cultivated environments

- Capturing the types of food environments that consumers interface with
- Moving beyond the built food environment

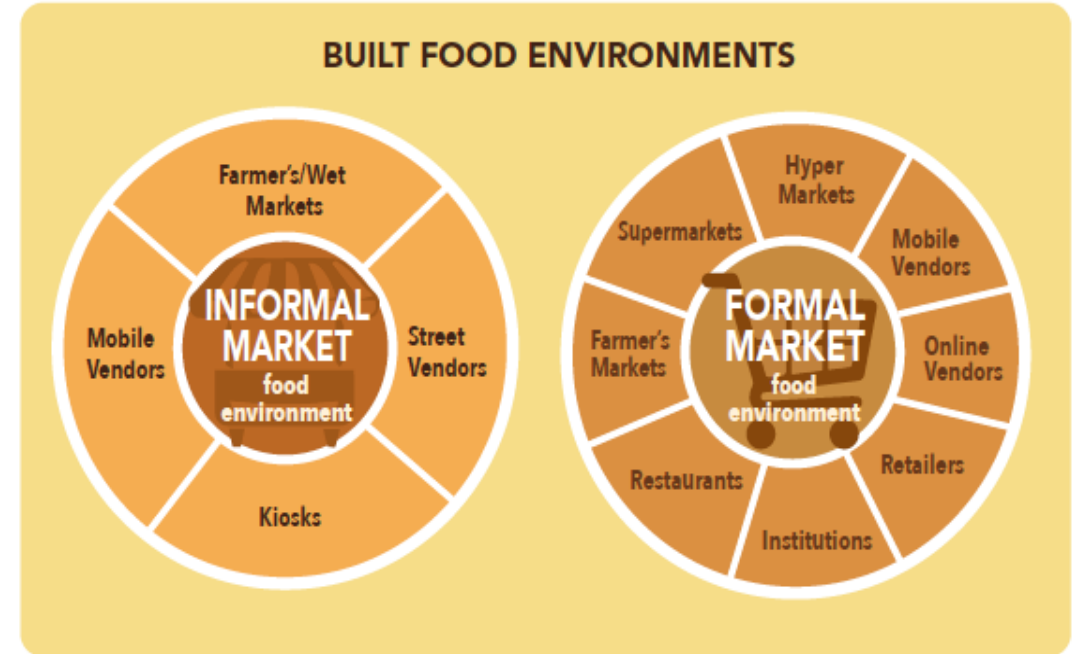
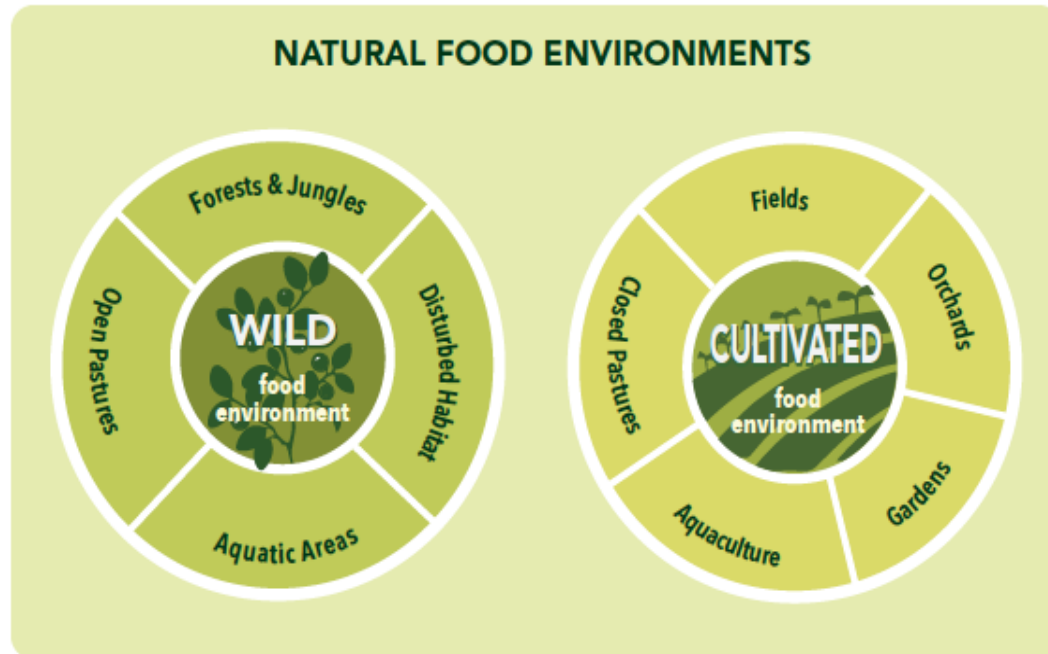
## Approach to developing food environment typology

- Building on existing food environment literature
- Informed through our research characterizing food environments in LMICs



# A food environment typology

## FOOD ENVIRONMENT TYPOLOGY





# Natural Food Environments



Cultivated



Wild





# Built Food Environments

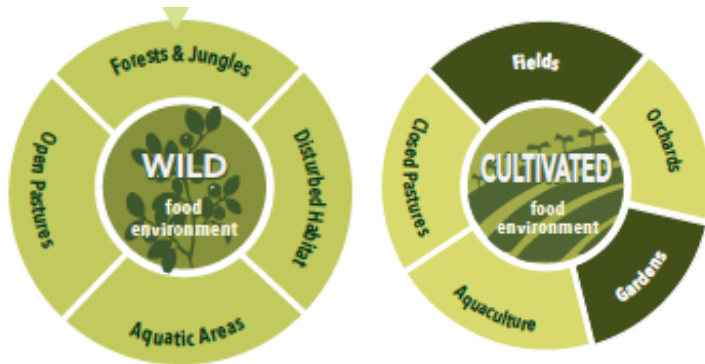




# Built Food Environments



# Parameters of food environment type



- Diversity dependent on region
- Seasonality



- Limited diversity in smaller food outlets
- Branded and unbranded processed food



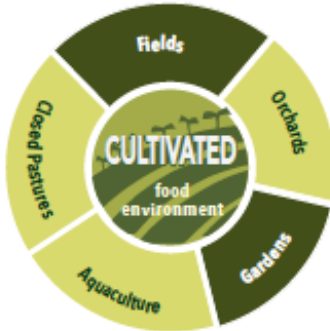
- Vast diversity of food available in all seasons
- Availability of foods may differ based on neighborhood SES
- High availability of processed foods



# Parameters of food environment type



- No monetary exchanges
- Trading of goods



- Staples relatively inexpensive
- Nutrient-rich foods (e.g., F&V & ASF) relatively expensive and/or price is highly seasonally variable
- Processed foods packaged in small packages to increase affordability



- Ultra-processed snack foods, ready meals, and fast foods are inexpensive
- Pay high premiums for specialty/niche foods and locally produced or organic foods

# Parameters of food environment type



- Can be labor and time intensive to hunt or gather
- In some situations can be highly convenient (e.g. when wild fruits are in season)

- Labor and time intensive during growing season
- Processing of staples and food preparation time sensitive

- Independent fast food and street vendors offer convenience foods such as ready to eat snacks and meals
- Distance to markets can be long and road access limited in rural areas

- Numerous convenience restaurants
- Improved infrastructure with cars and public transport increase market access
- Processing of ingredients, along with ready-to-eat and ready-to-heat foods reduces cooking time
- Increased use of online delivery

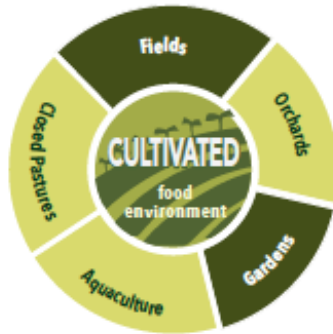
# Parameters of food environment type



Promotion & Quality



- Promotion and marketing of food non-existent
- Food is fresh by definition when wild harvested



- Marketing non-existent
- Promotion of food limited to farmer-targeted programs or extension services
- Food is fresh when harvested; crop quality is variable



- Branding and advertisements in print in newspapers, posters
- Signs in stores, markets, buildings
- Verbal promotion on radios
- Variable freshness/quality common due to lack of cold chains and unstable storage conditions

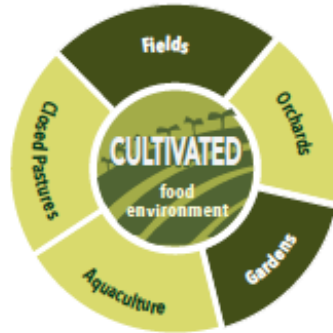


- High level of food promotion
- High amount of labeling
- Food safety standards generally ensure safe food
- Quality of perishable food is typically high due to intact cold chains

# Parameters of food environment type



Sustainability



- Low carbon footprint
- Sustainability dependent on abundance of supply in ways that don't deplete integrity of resource base

- Carbon and water footprint dependent on production practices
- Soil health dependent on production practices
- Food loss high in LMIC contexts
- Land tenure issues

- Relatively low levels of packaging
- Local and seasonal foods widely available
- Food system livelihood and equity issues
- High levels of food loss due to inadequate storage conditions

- High amounts of packaging
- High levels of food waste
- Food miles can be high
- High carbon and water footprint of some foods (e.g., beef)
- High-energy food storage of cold chain items



# Food environment transition over time

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## **Objectives of analysis**

To examine the food environments of countries at different stages of development as well as their changes over time

To examine the availability, affordability, convenience and quality of foods within countries at different stages of development

# Country groupings for analysis

- We examined historical and forecasted global trends on the basis of country development stage using socio-demographic index (SDI)
- SDI is a measure for classifying the development stage of countries using a composite average ranking of incomes per capita, average educational attainment, and fertility rates
  - Low SDI (e.g., Ethiopia, Bangladesh, Senegal)
  - Low-middle SDI (e.g., Dominican Republic, Egypt, India)
  - Middle SDI (e.g., Ecuador, Mexico, Albania)
  - High-middle SDI (e.g., Serbia, Ukraine, Argentina)
  - High SDI (e.g., United States, Italy, Norway)

# Data sources



Availability

- Food and Agriculture Organization (FAO STAT)
- Euromonitor International



Promotion & Quality

- Data gap



Convenience

- Euromonitor International



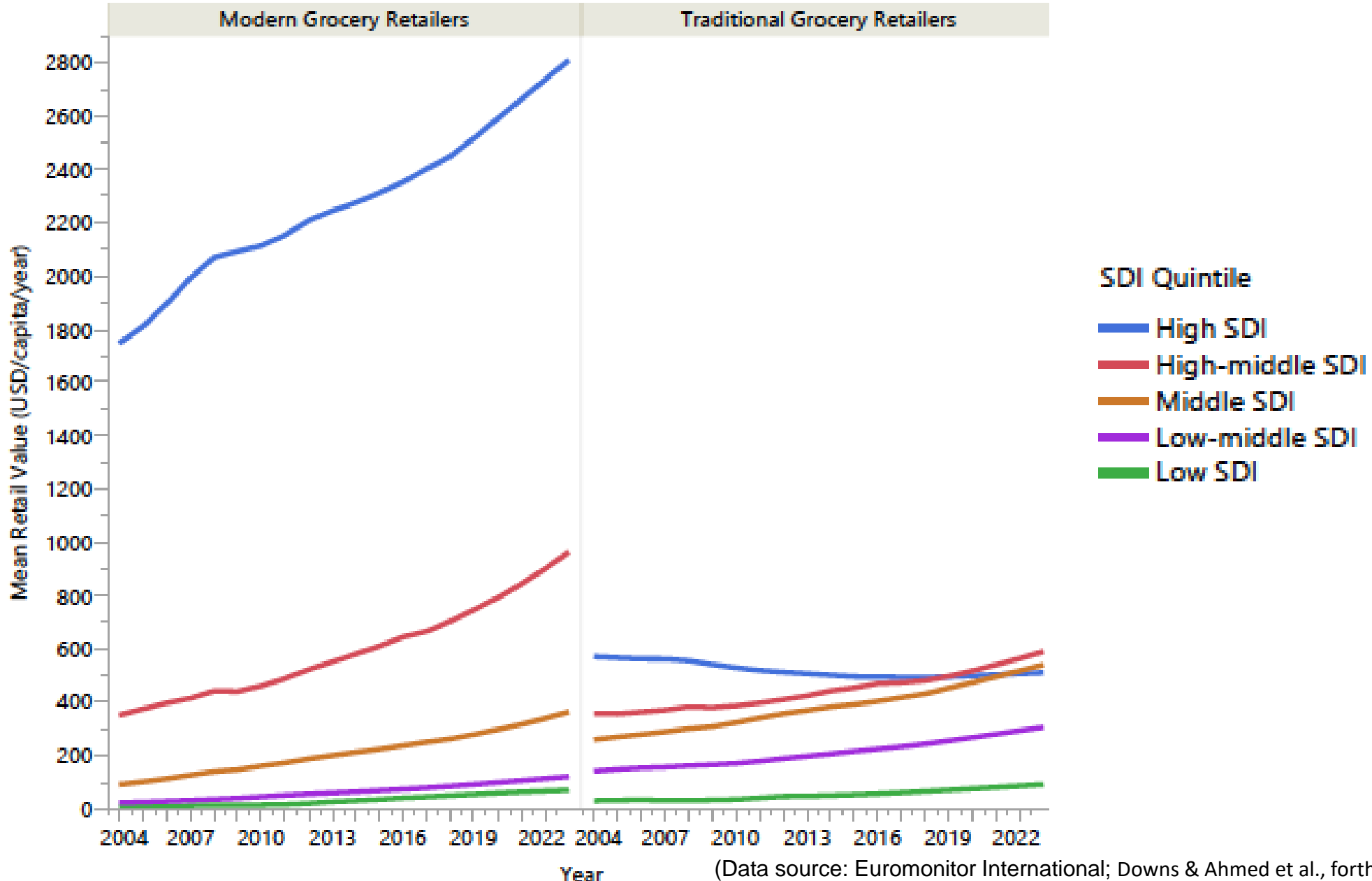
Affordability

- Data gap

**Different retailing and restaurant types: Euromonitor International**

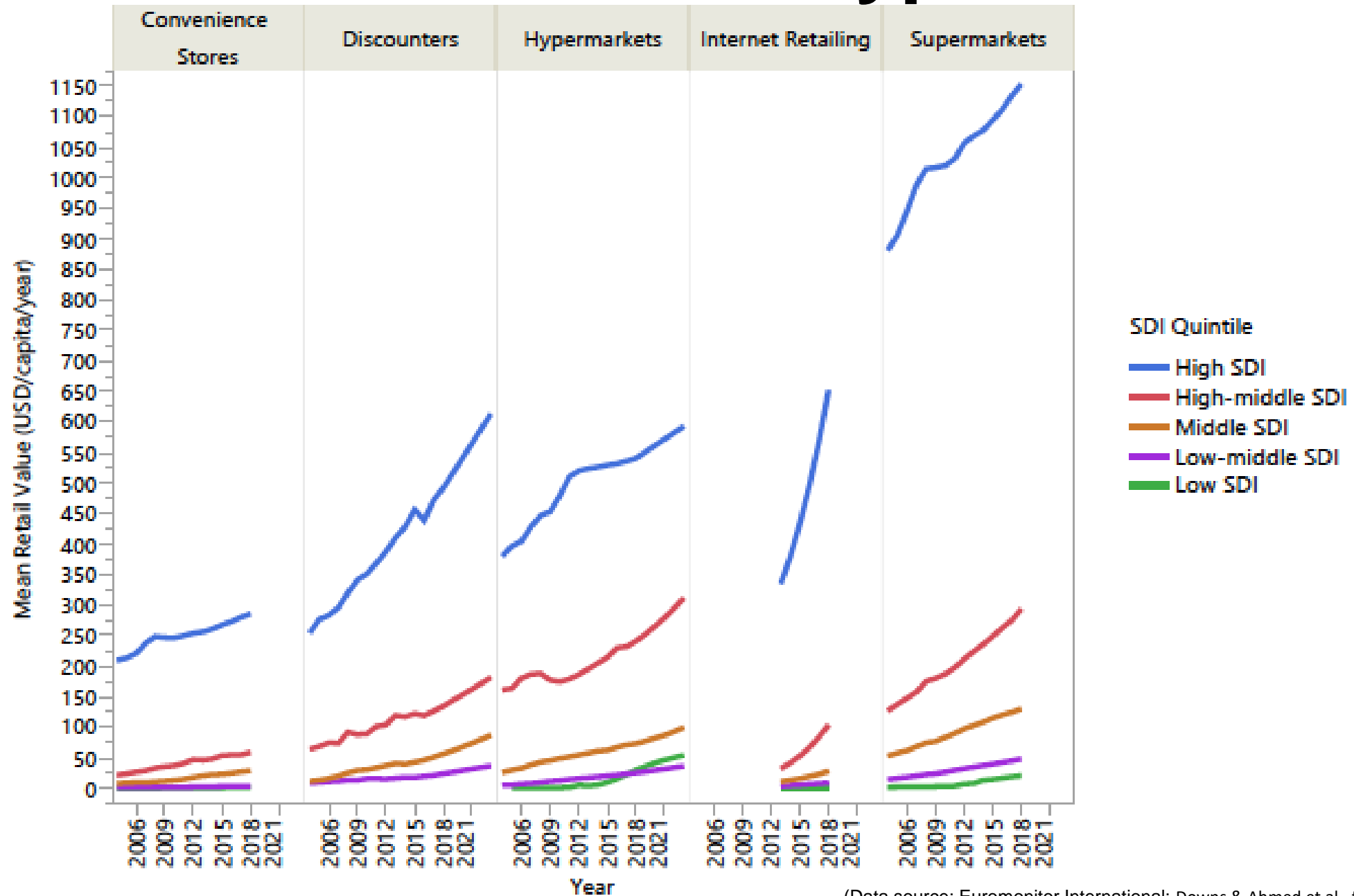


# Shifts from traditional to modern retailers



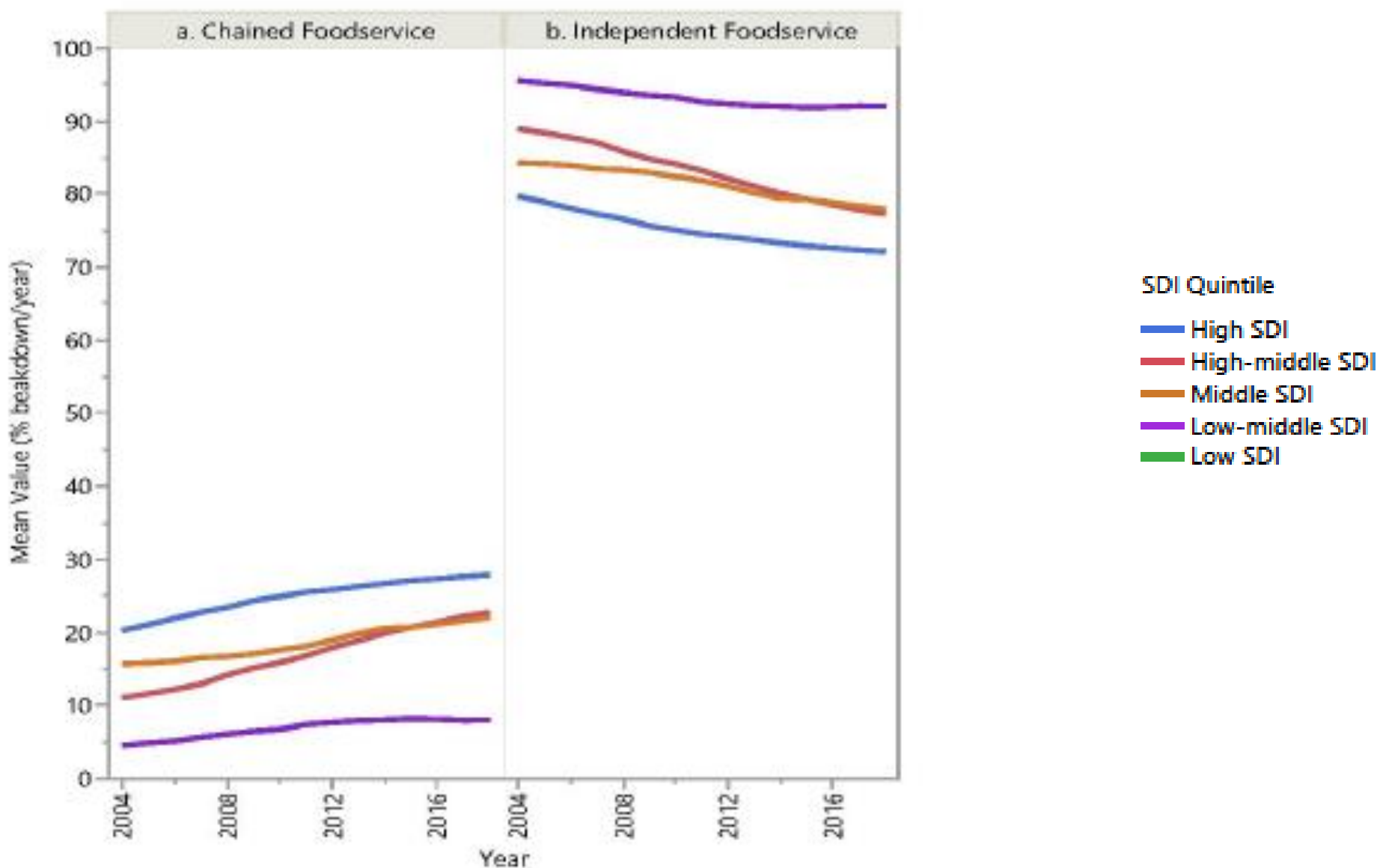
(Data source: Euromonitor International; Downs & Ahmed et al., forthcoming)

# Shifts in food outlet types

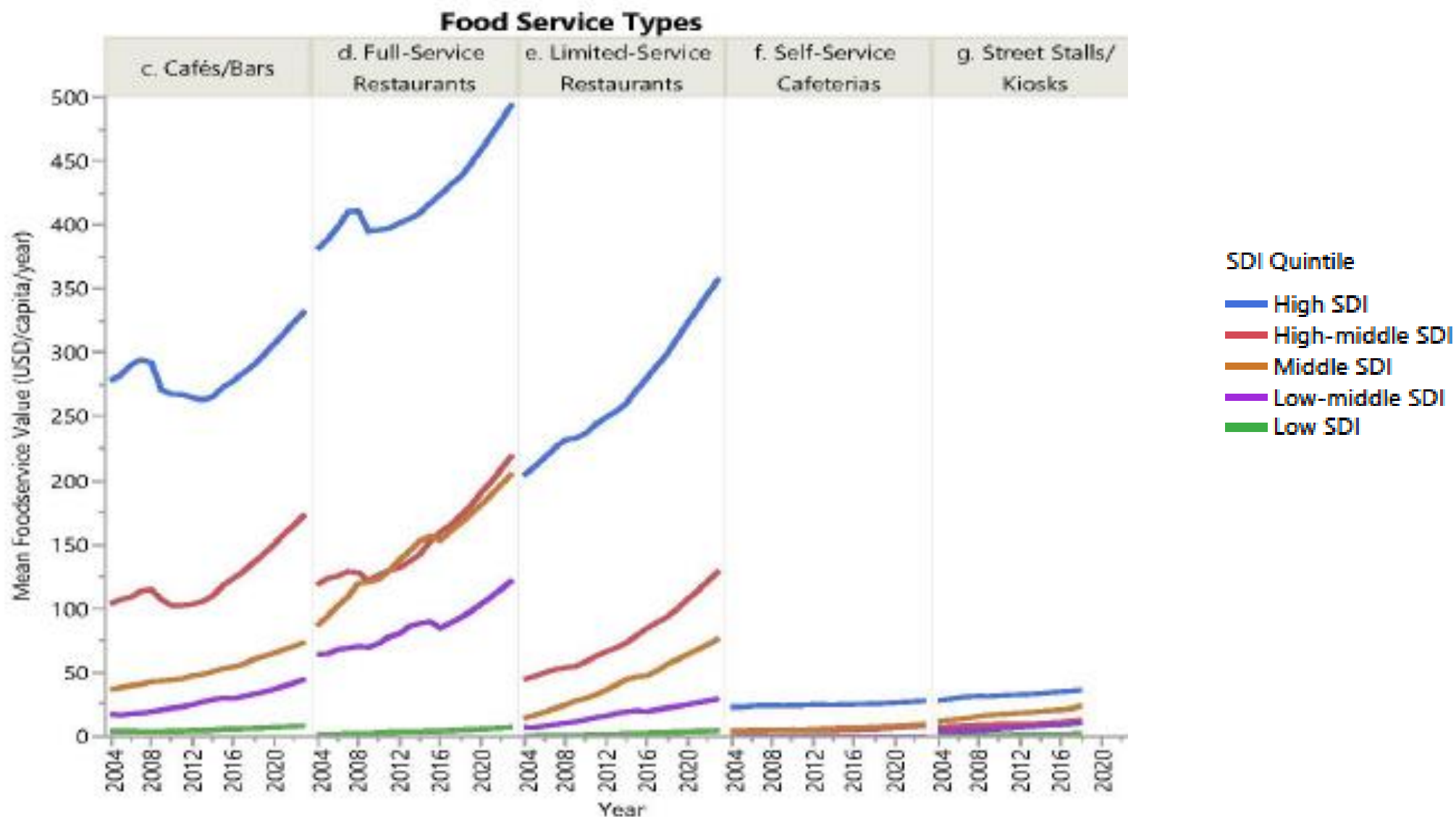


(Data source: Euromonitor International; Downs & Ahmed et al., forthcoming)

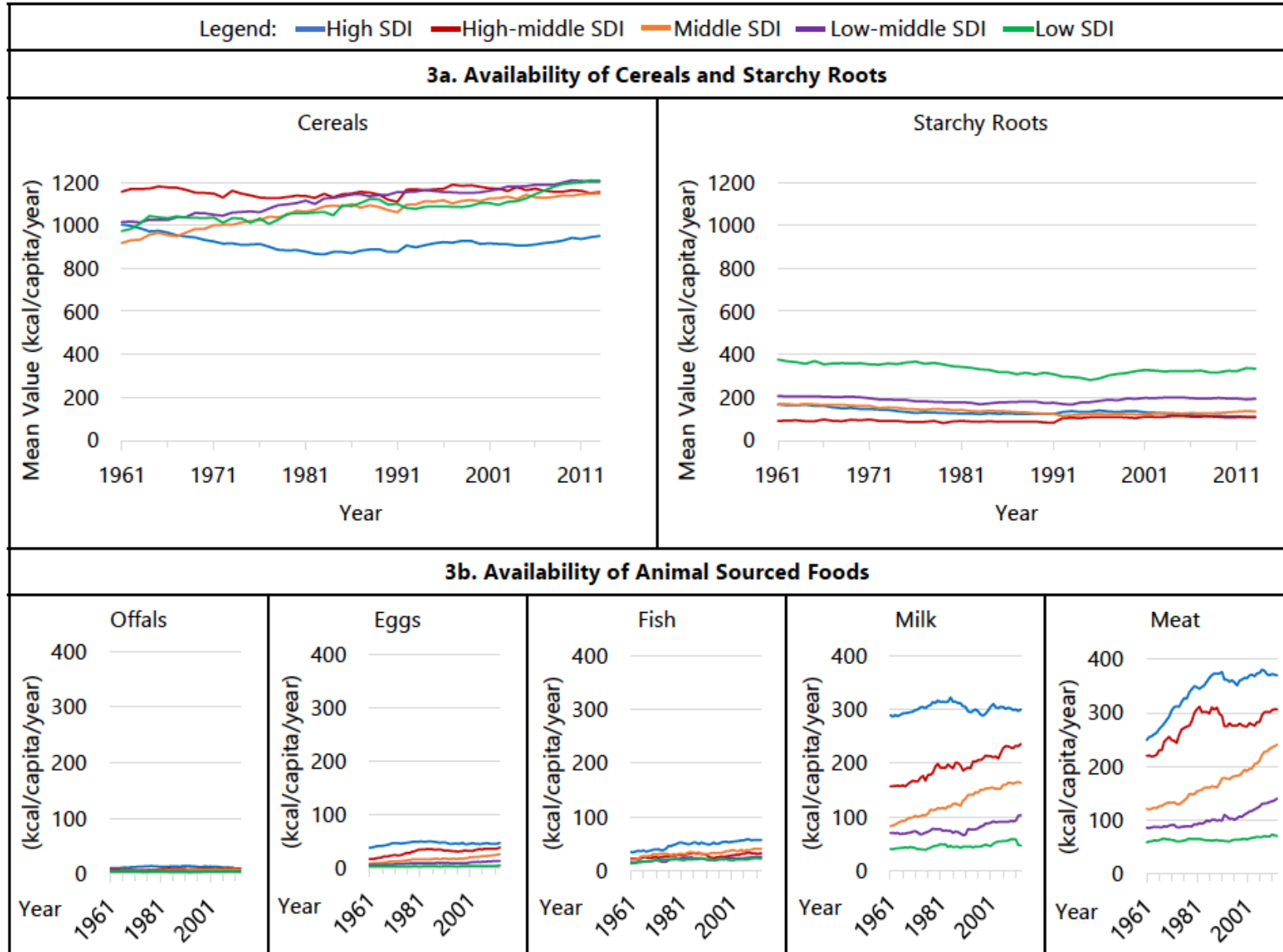
# Shifts in foodservice outlet type



# Shifts in foodservice outlet type

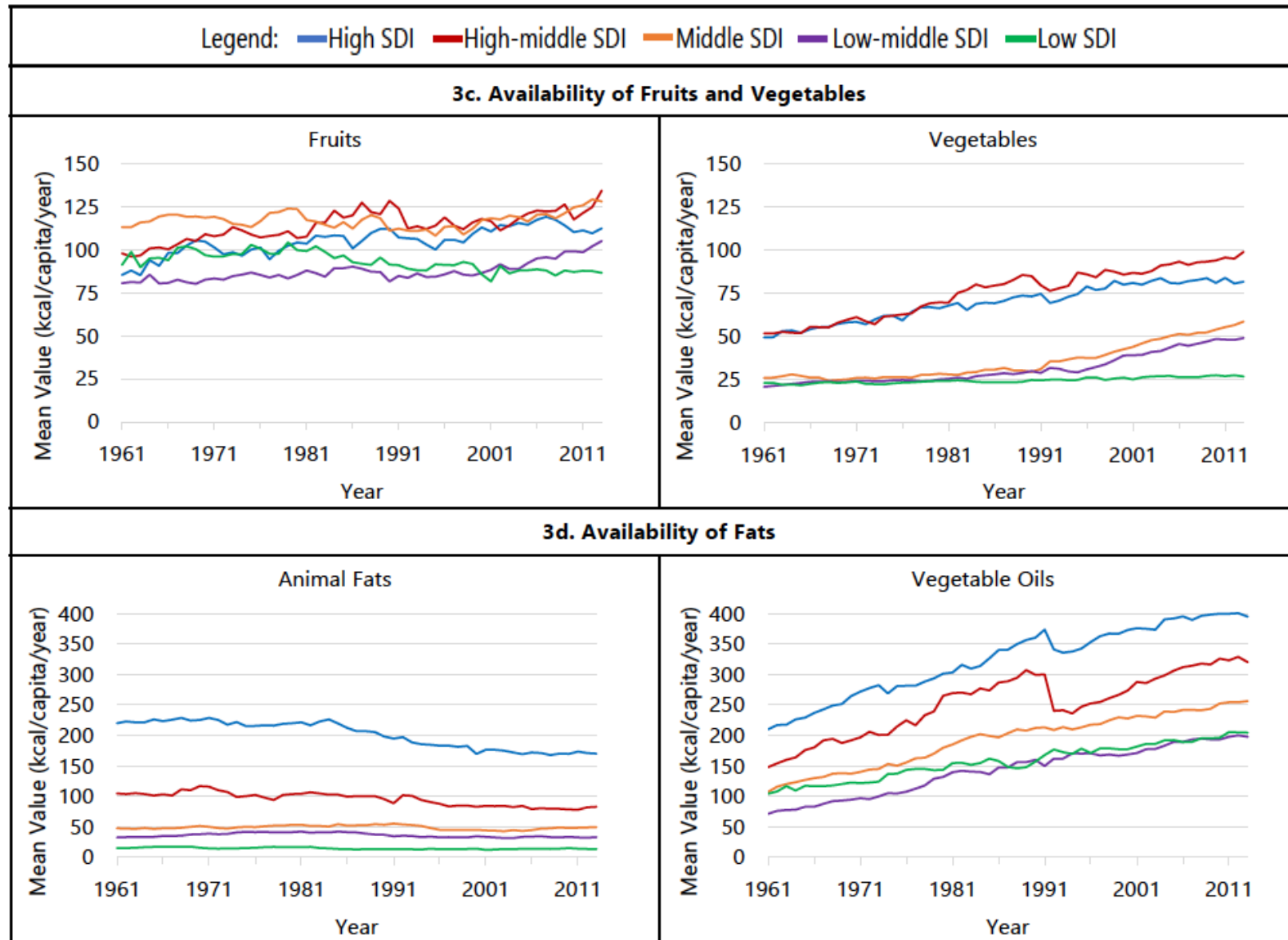


# Shifts in food availability



(Data source: FAO Stat; Downs & Ahmed et al., forthcoming)

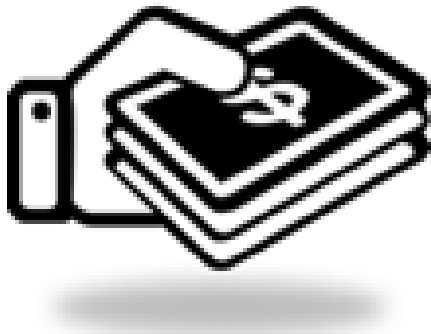
# Shifts in food availability



(Data source: FAO Stat; Downs & Ahmed et al., forthcoming)



# Data gaps to examine shifts over time

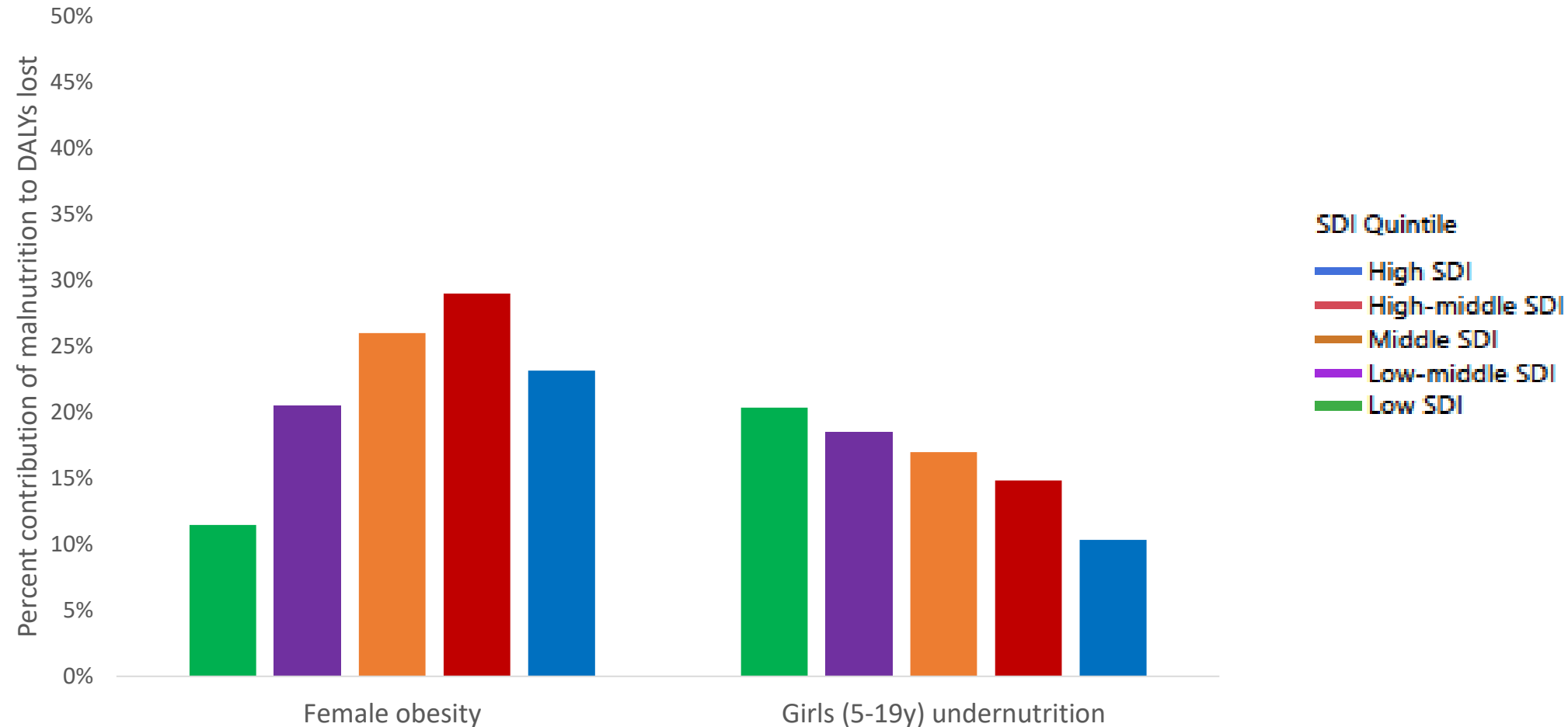


Affordability



Promotion & Quality

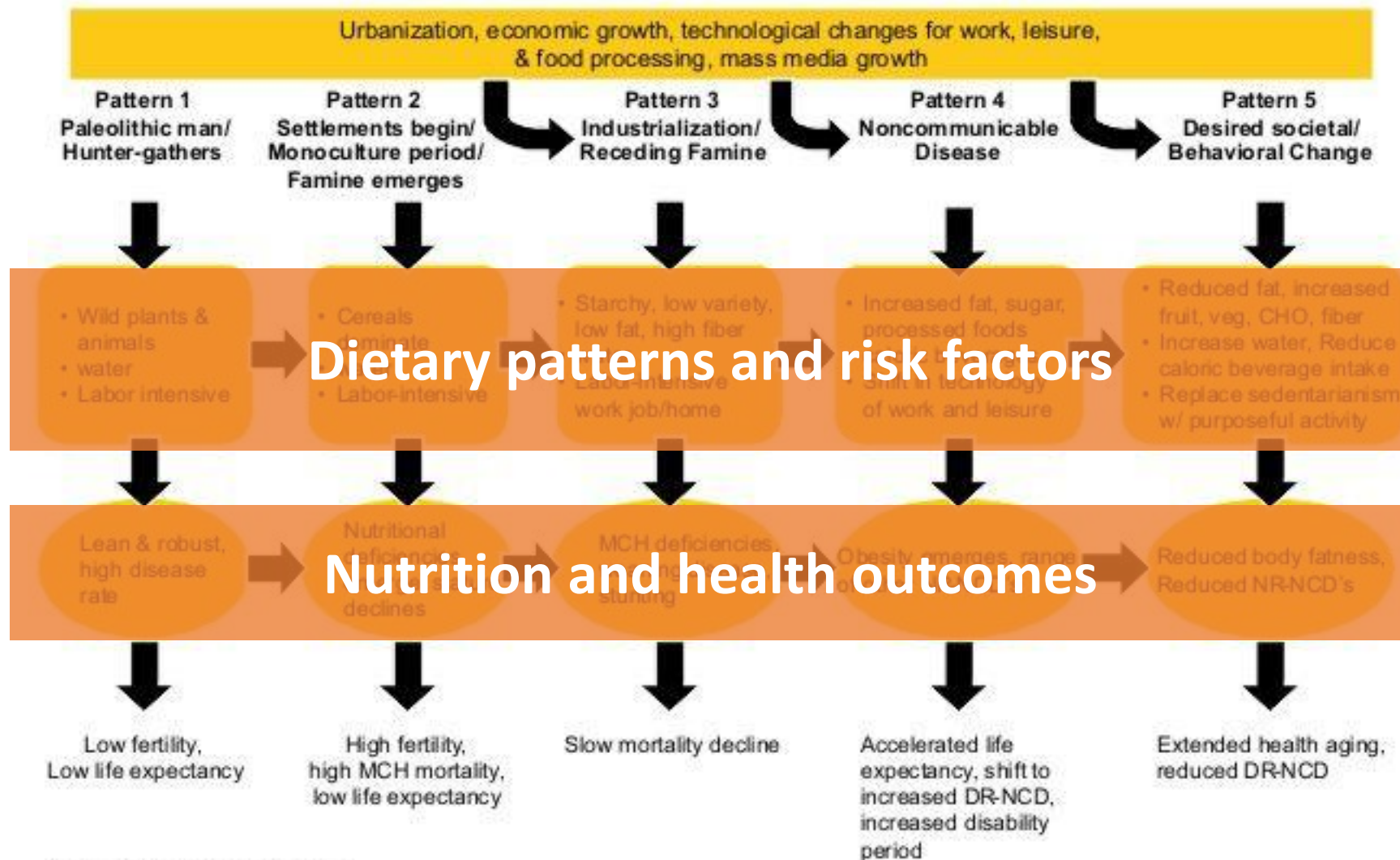
# Shifting burdens of malnutrition



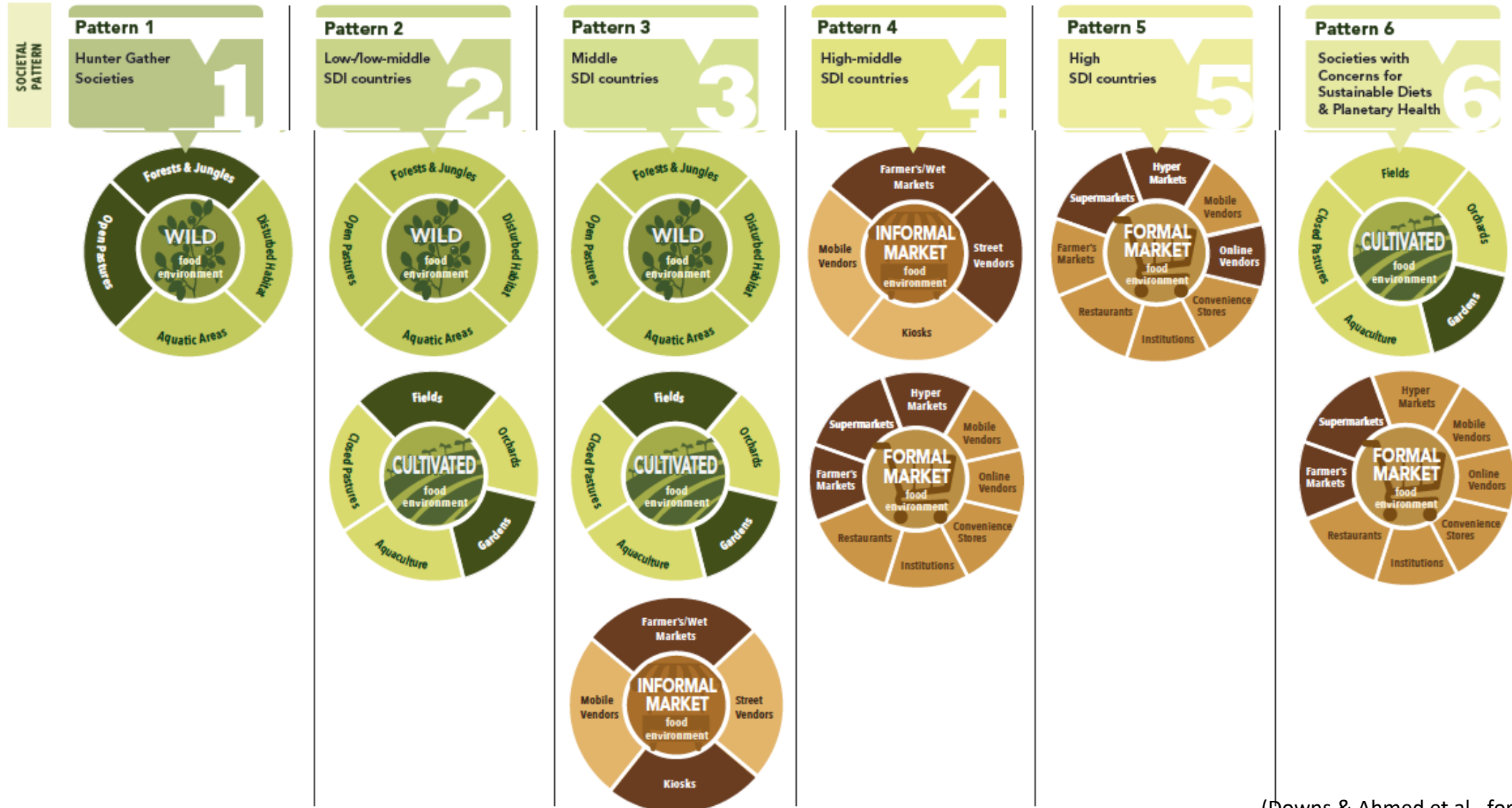
(Adapted from Swinburn et al., 2019; Downs & Ahmed et al., forthcoming)

# The nutrition transition – to the food environment transition

Figure 2. Stages of the Nutrition Transition

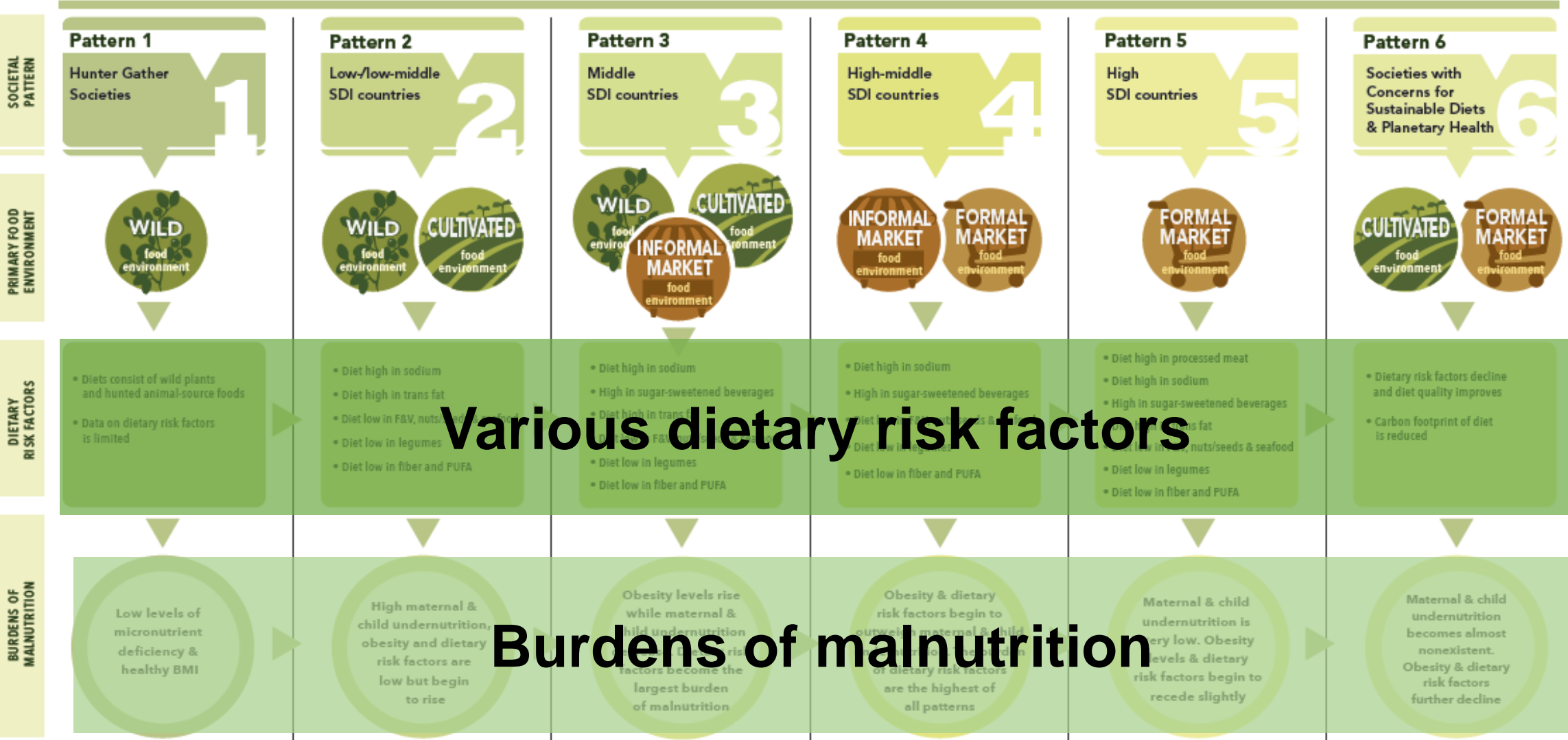


# The food environment transition



# The food environment transition towards sustainable diets

## THE FOOD ENVIRONMENT AND NUTRITION TRANSITION TOWARDS SUSTAINABLE DIETS



Various dietary risk factors

Burdens of malnutrition

# Key messages

- There is a need to comprehensively examine the different food environment types that consumers interface with
- As countries transition from low to high SDI their food environments drastically change
  - A greater reliance on the built food environment
  - Increased access to ultra-processed food & nutrient-rich foods
- Interventions aimed at improving diets need to target the various food environments in which consumers interface
  - Priority areas for interventions will shift as countries undergo the food environment transition