Malnutrition in all its forms: policy integration and systems thinking

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Obesity and undernutrition

SUSTAINABLE DEVELOPMENT GOALS

SDG 2 ‘By 2030, end all forms of malnutrition’

- Obesity
- Stunting
- Micronutrient deficiencies

Other SDGs

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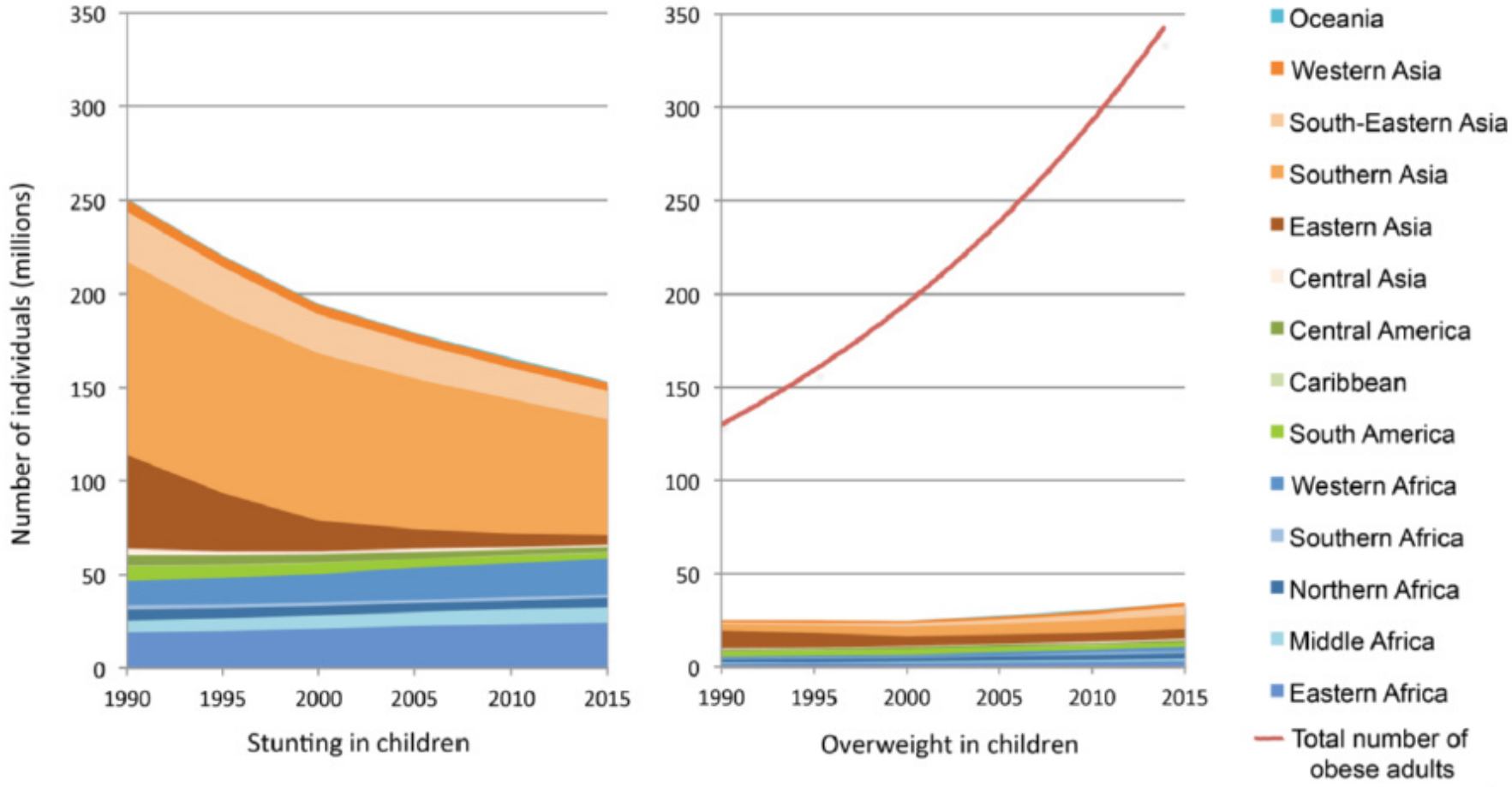
Obesity and undernutrition



Sources: UNICEF, World Bank and WHO 2016 and Institute for Health Metrics and Evaluation 2014, respectively

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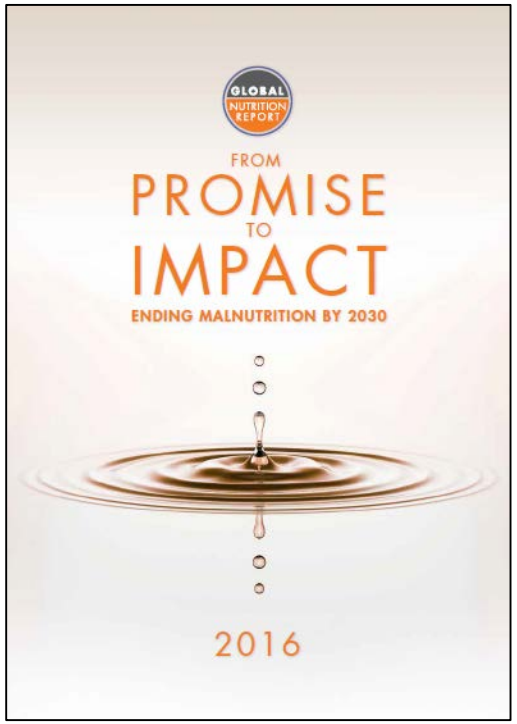
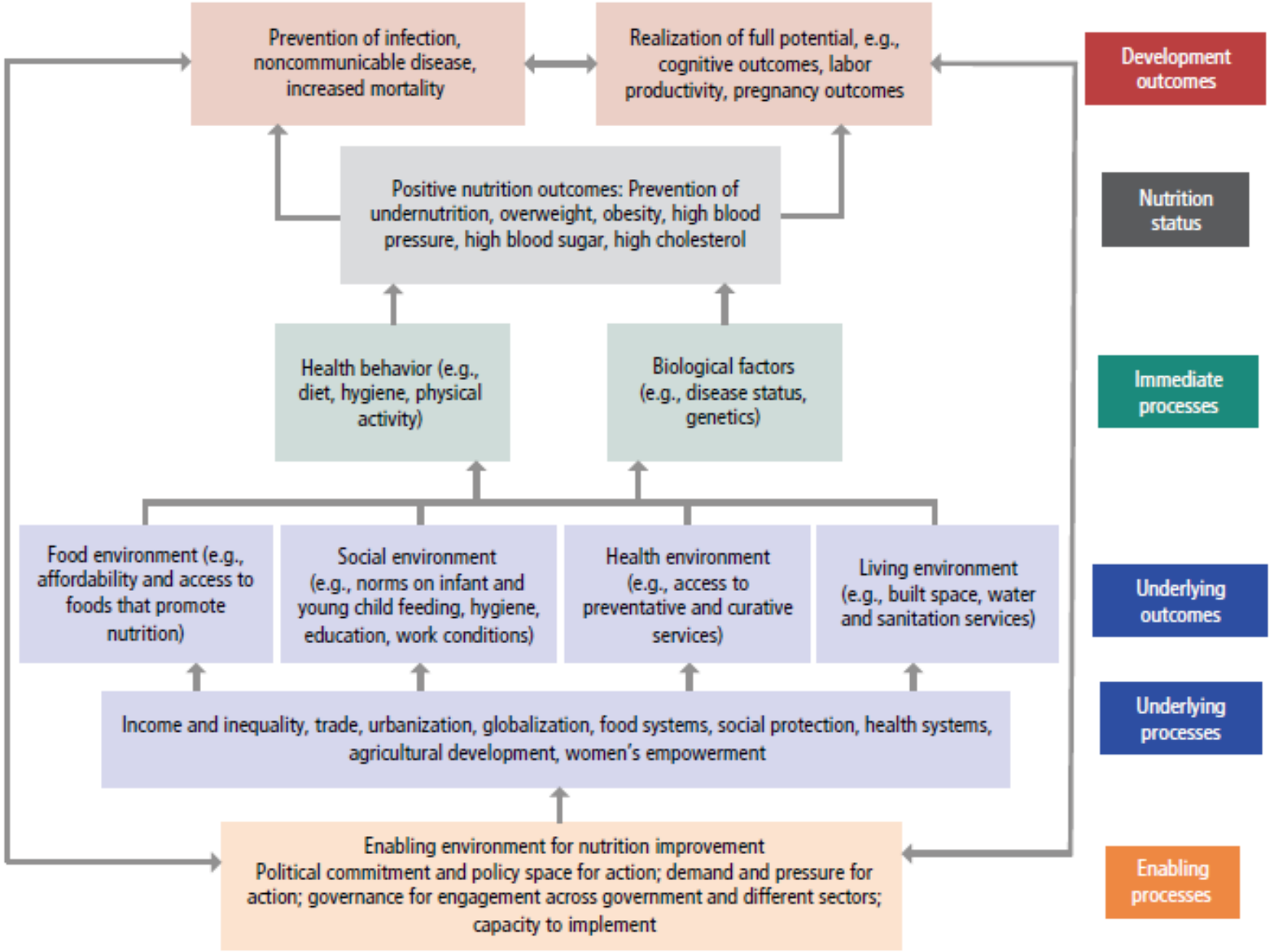
Obesity + Undernutrition being joined as 'Malnutrition in all its forms'

- Framing in SDGs, Decade of Action on Nutrition etc
- Co-occurrence of stunting and overweight, especially in LMICs
- Under 5s in 36 LMICs
  - ~3% had BOTH stunting and overweight
  - ~10% of stunted children were also overweight
  - Greater co-occurrence in MICs

Tzioumis E et al Publ Health Nutr 2016

Underlying drivers of improved nutrition status





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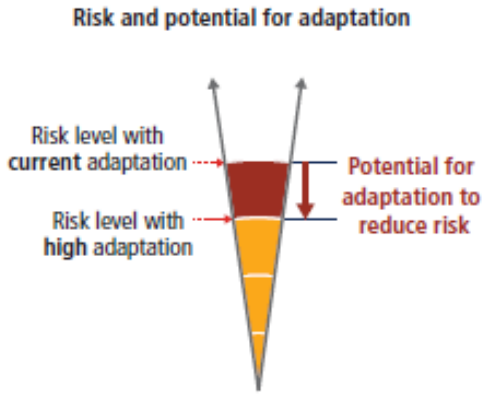
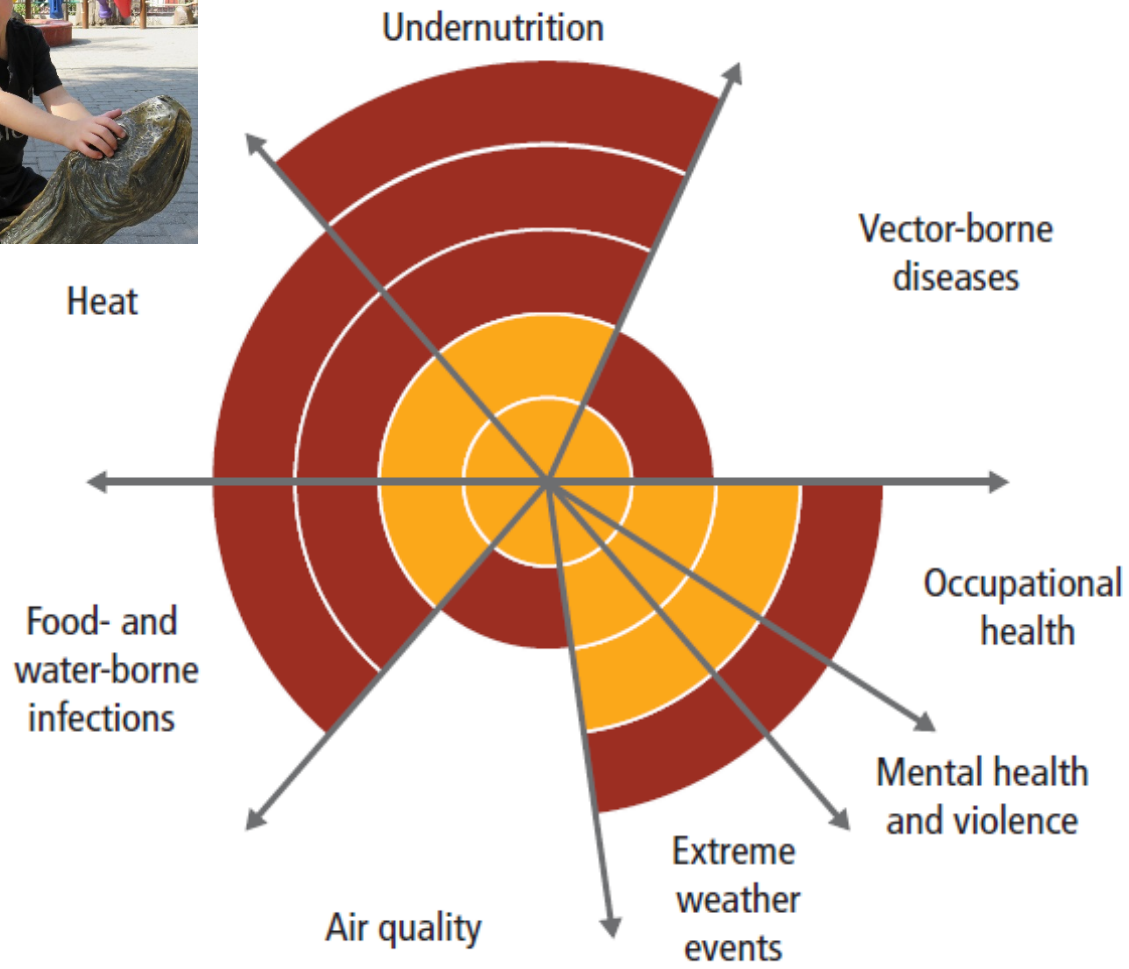
Undernutrition as the greatest health impact of climate change at +4 deg C





IPCC Human Health: Impacts, Adaptation, and Co-Benefits, 2014

Syndemics

- ≥2 diseases (epidemics)
  - Cluster in time or place
  - Interact with each other
  - Common societal forces as drivers
- Mainly: HIV + drugs + violence
  - Individual interactions

Mendenhall E. Lancet 2017; 389:889

- Obesity + undernutrition + climate change as a syndemic
  - Climate change as an epidemic
  - Interactions at individual & population level
  - Provides a potential collective narrative of common societal origins

Double / triple duty actions: analyses on existing recommended actions

- Malnutrition in all its forms – many recommendations
- PA environments – some recommendations
- Climate change – IPCC makes evidence statements only
- Obvious double/triple duty actions
  - **Building & transport design** – health/env impact assessments
  - **Trade agreements** – preserve food policy space
  - **Conflicts of interest** – management & transparency
  - **Agriculture research** – shift to diversified, sustainable crops
  - **Peri-urban agricultural lands –** protection from development
  - **Agriculture policies** – nutrition & environment purposes
  - **Nutrition education / dietary GLs** – health, social, env aspects

Specific nutrition recommendations (n=190):

(How many are double/triple duty actions, where do they fit in the system, how strong are their leverage points?)

- Production systems 13
- Processing and distribution 6
- Storage, exchange & distribution 4
- Retail, marketing & advertising 10
- Food information 10
- Food promotion 5
- Food access 7
- Food affordability 2
- Food composition 5
- Creating consumer demand 20
- Governance 2
- Conflicts of interest 2
- Accountability 25
- Capacity Development 11
- Investments & funding 12
- Policies 11
- Social equity 11
- Trade agreements 2
- Sector engagement 10
- Data and information 25

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Policy resistance

1. Government reluctance
   - Ideology
   - Regulatory chill
2. Industry push back
   - Corporate political activities
3. Insufficient public demand for policies
   - Quiet support vs public demand

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Systems approaches for creating integration of thinking, understanding of causes, and identifying solutions

- Considering the whole as well as the parts
- Connections, networks, interdependence
- Rules and boundaries
- Dynamics:
  - Feedback loops, delays, non-linear effects, tipping points
- Complexity, adaptability, self-organising
- Patterns and emergence


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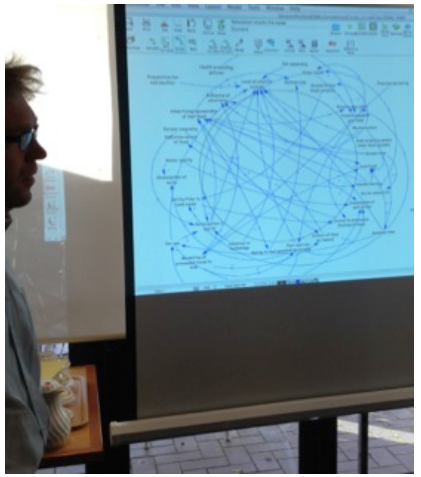
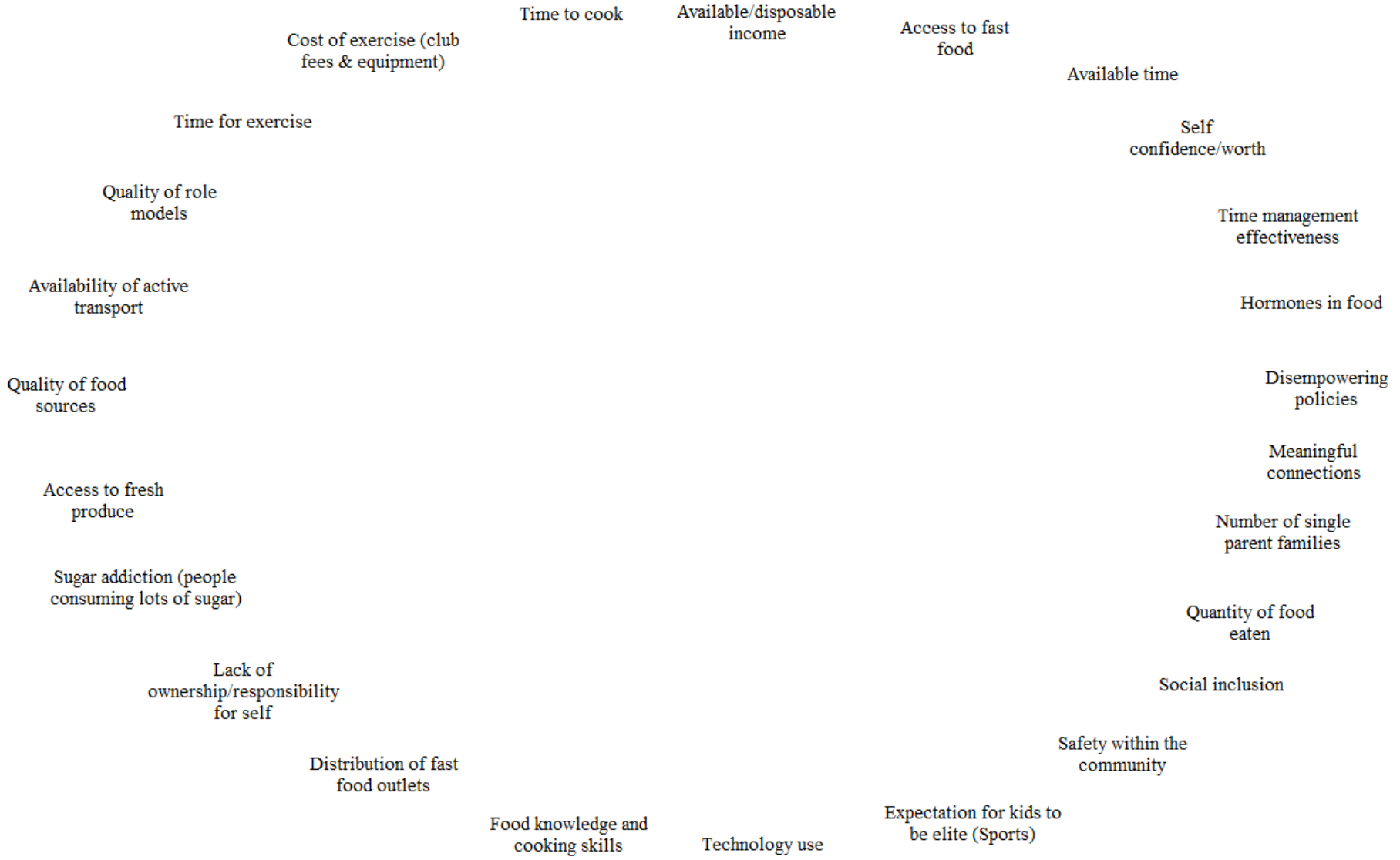
Group Model Building

- Uses system dynamics to develop a causal map/diagram
- Community driven participatory research—core modeling team
- Start with ‘Changes over time’ with ‘Hopes and fears’



Example: Portland Victoria



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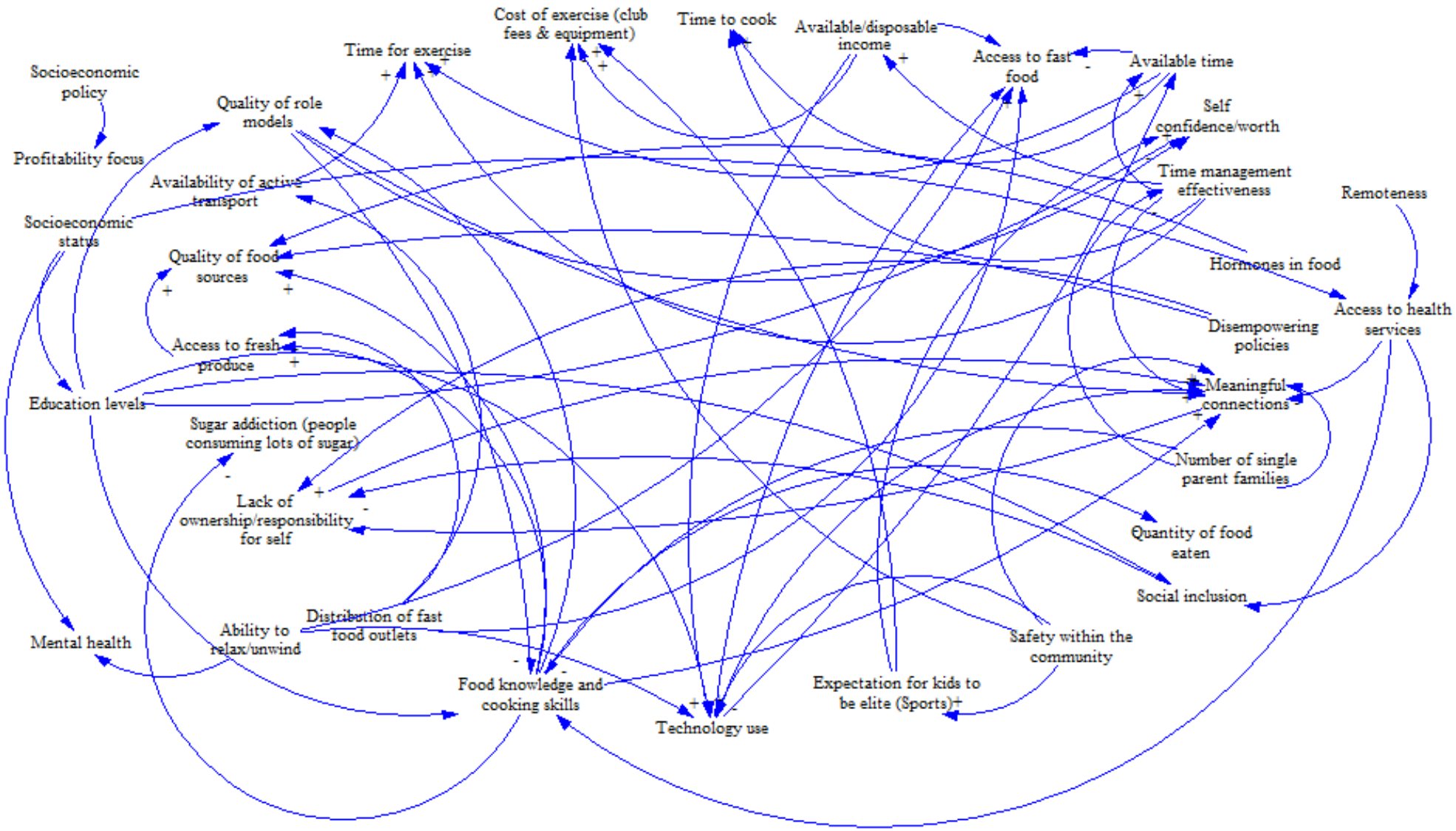

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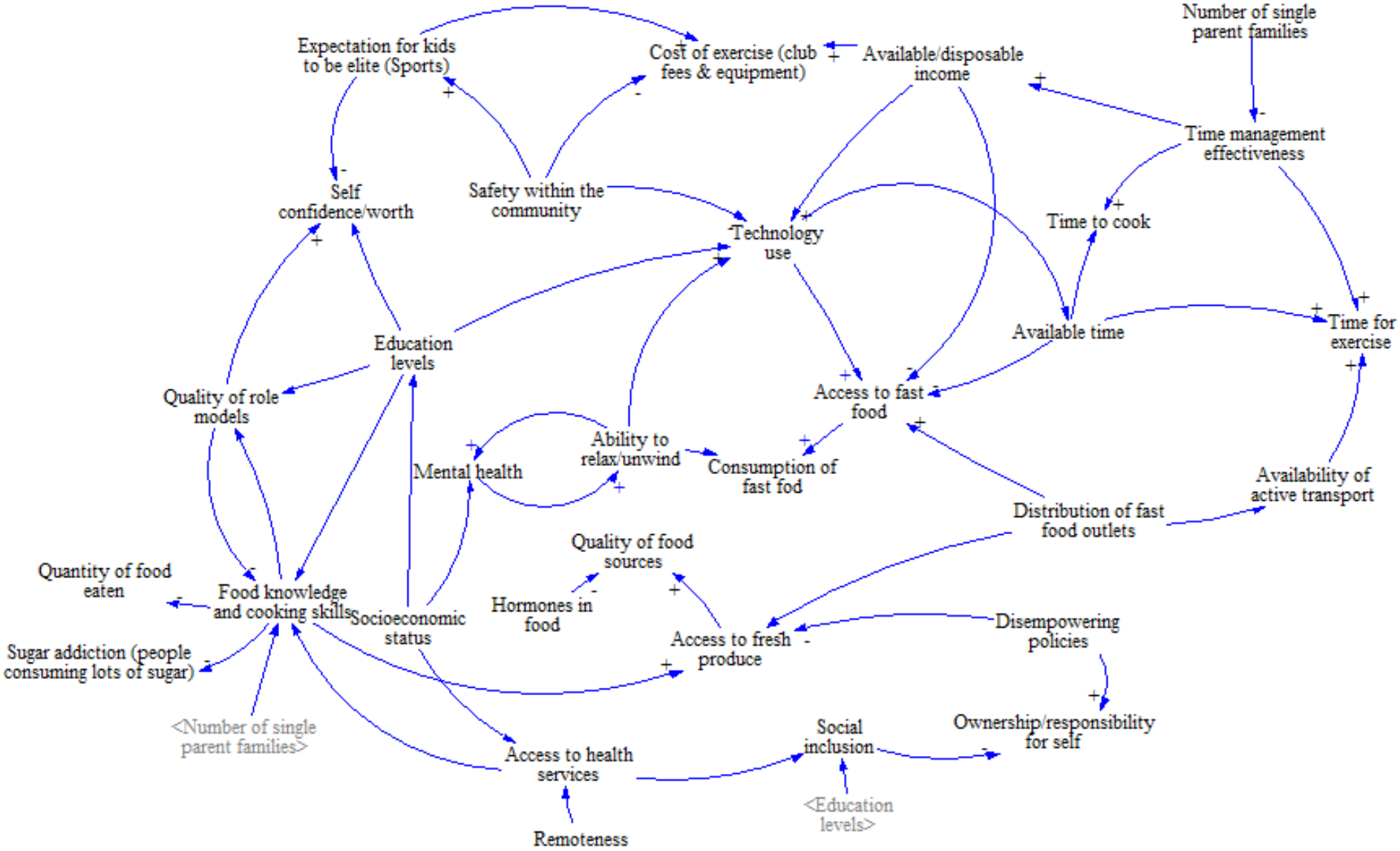
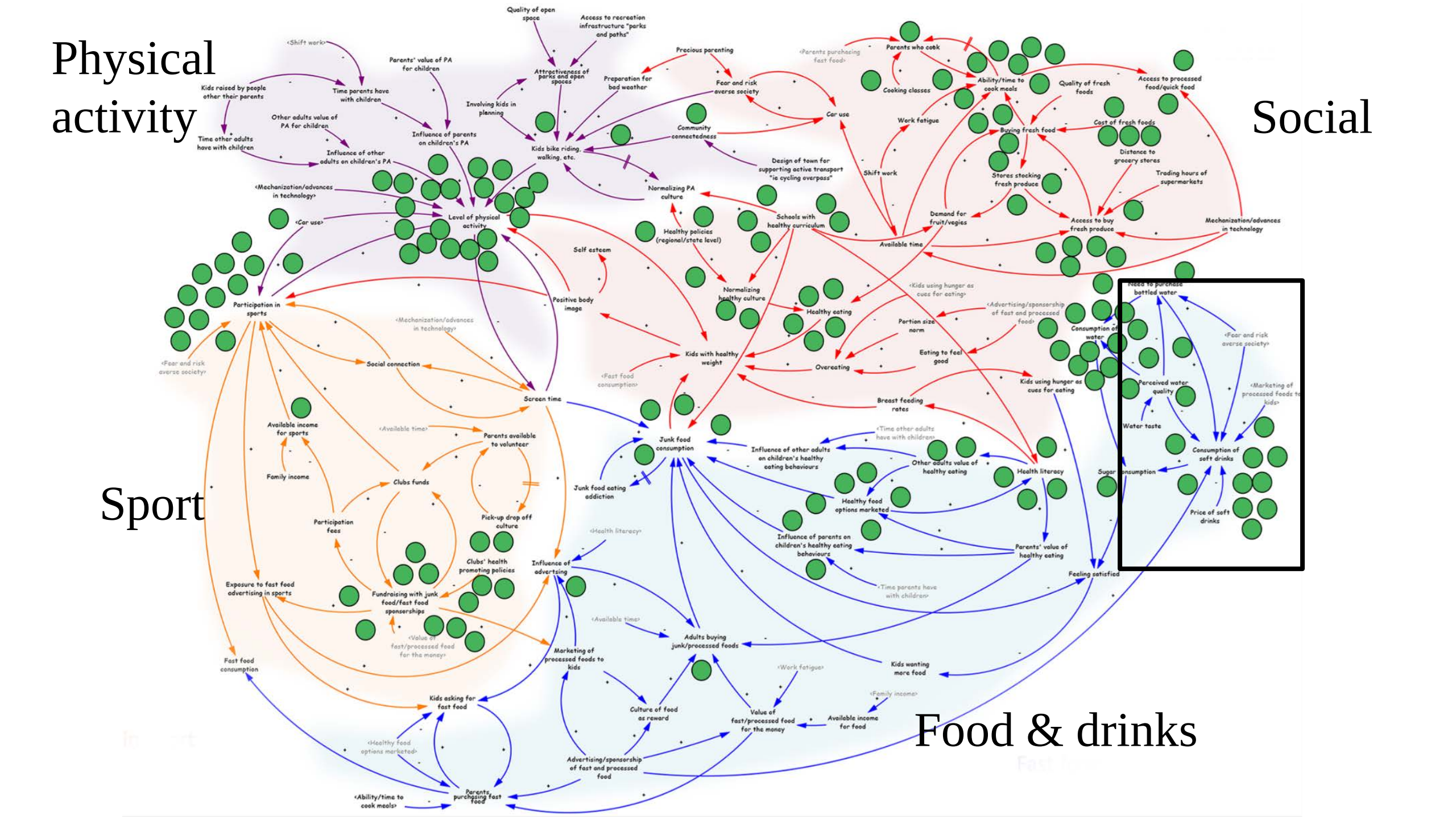
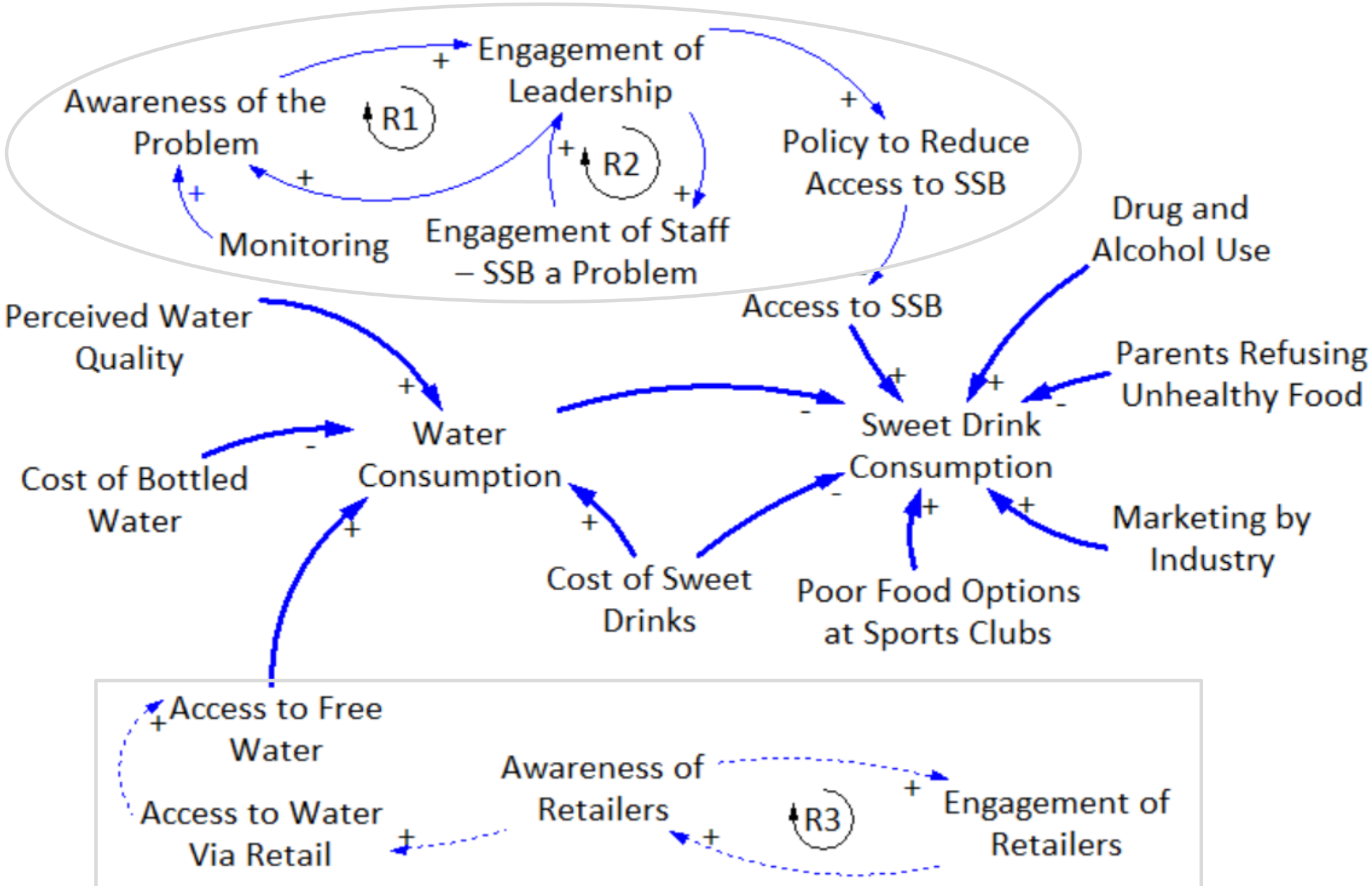



Physical activity
Social
Sport
Food & drinks
Quality of open space
Access to recreation infrastructure "parks and paths"
Attractiveness of parks and open spaces
Precious parenting
Preparation for bad weather
Fear and risk averse society
Parents who cook
Cooking classes
Ability/time to cook meals
Quality of fresh foods
Access to processed food/quick food
Cost of fresh foods
Distance to grocery stores
Buying fresh food
Stores stocking fresh produce
Trading hours of supermarkets
Access to buy fresh produce
Mechanization/advances in technology
Demand for fruit/vegies
Work fatigue
Shift work
Car use
Community connectedness
Design of town for supporting active transport "ie cycling overpass"
Kids bike riding, walking, etc.
Normalizing PA culture
Schools with healthy curriculum
Available time
Healthy policies (regional/state level)
Level of physical activity
Participation in sports
Self esteem
Positive body image
Normalizing healthy culture
Healthy eating
Portion size norm
Overeating
Eating to feel good
Kids with healthy weight
Social connection
Screen time
Junk food consumption
Junk food eating addiction
Influence of other adults on children's healthy eating behaviours
Other adults value of healthy eating
Health literacy
Healthy food options marketed
Influence of parents on children's healthy eating behaviours
Parents' value of healthy eating
Influence of advertsing
Marketing of processed foods to kids
Adults buying junk/processed foods
Kids wanting more food
Feeling satisfied
Kids using hunger as cues for eating
Breast feeding rates
Need to purchase bottled water
Consumption of water
Perceived water quality
Water taste
Consumption of soft drinks
Price of soft drinks
Sugar consumption
Available income for sports
Family income
Parents available to volunteer
Clubs funds
Participation fees
Pick-up drop off culture
Clubs' health promoting policies
Fundraising with junk food/fast food sponserships
Exposure to fast food advertising in sports
Fast food consumption
Kids asking for fast food
Culture of food as reward
Value of fast/processed food for the money
Available income for food
Advertising/sponsorship of fast and processed food
Parents purchasing fast food
Kids raised by people other their parents
Time parents have with children
Time other adults have with children
Other adults value of PA for children
Influence of parents on children's PA
Influence of other adults on children's PA
Parents' value of PA for children
Involving kids in planning
<Shift work>
<Mechanization/advances in technology>
<Car use>
<Fear and risk averse society>
<Mechanization/advances in technology>
<Available time>
<Fast food consumption>
<Health literacy>
<Time other adults have with children>
<Kids using hunger as cues for eating>
<Advertising/sponsorship of fast and processed food>
<Fear and risk averse society>
<Marketing of processed foods to kids>
<Time parents have with children>
<Available time>
<Value of fast/processed food for the money>
<Work fatigue>
<Family income>
<Healthy food options marketed>
<Ability/time to cook meals>
<Parents purchasing fast food>


Awareness of the Problem
Engagement of Leadership
R1
R2
Policy to Reduce Access to SSB
Monitoring
Engagement of Staff – SSB a Problem
Drug and Alcohol Use
Perceived Water Quality
Access to SSB
Parents Refusing Unhealthy Food
Water Consumption
Sweet Drink Consumption
Cost of Bottled Water
Cost of Sweet Drinks
Poor Food Options at Sports Clubs
Marketing by Industry
Access to Free Water
Access to Water Via Retail
Awareness of Retailers
R3
Engagement of Retailers

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Summary

- Nutrition silos need to be joined up to address the underlying systemic causes of malnutrition in all its forms
- Nutrition needs to join with other silos (eg agriculture, treasury, education, business) to achieve policy coherence
- Strategies for integrating thinking and action
  - High level framing (eg nutrition-sensitive agriculture policies, SDGs)
  - Analysing specific actions for double (triple) duty solutions
  - Linear frameworks for understanding the layers of determinants
  - Concepts such as syndemics
  - Systems approaches such as group model building with stakeholders
- Policy integration needs the right framing, examples/stories, high level commitment, and stakeholder pressure