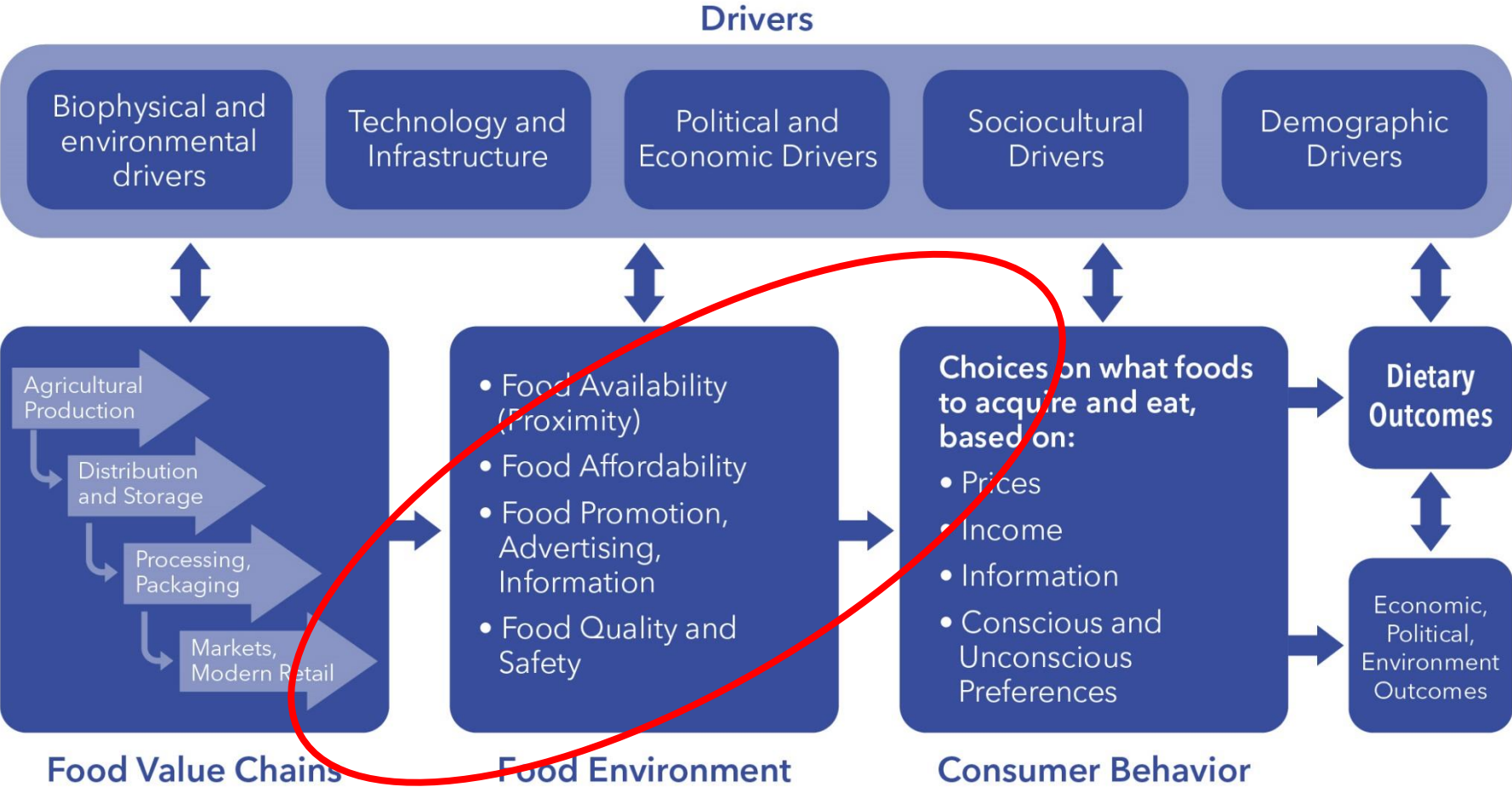


Retail Diversity Index



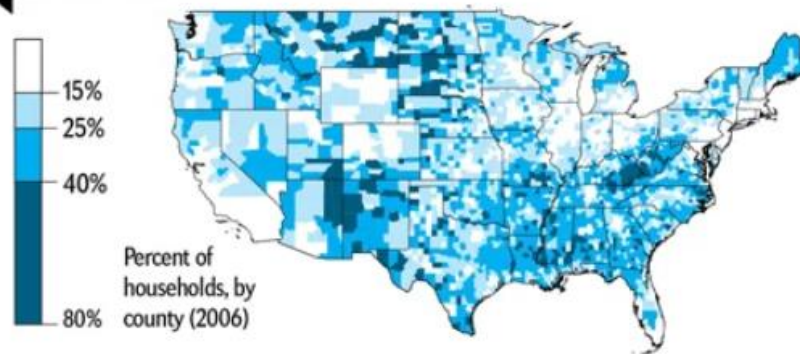
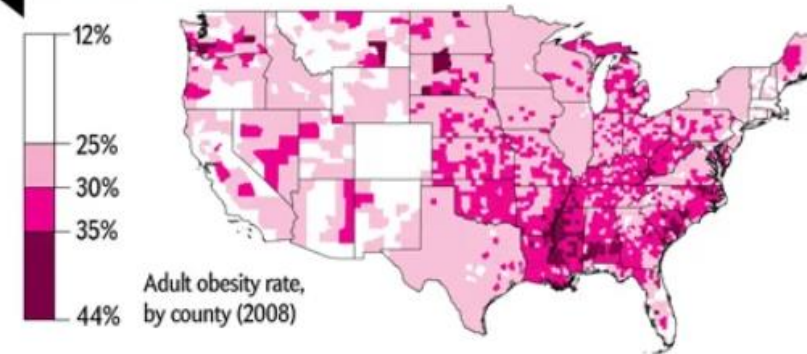
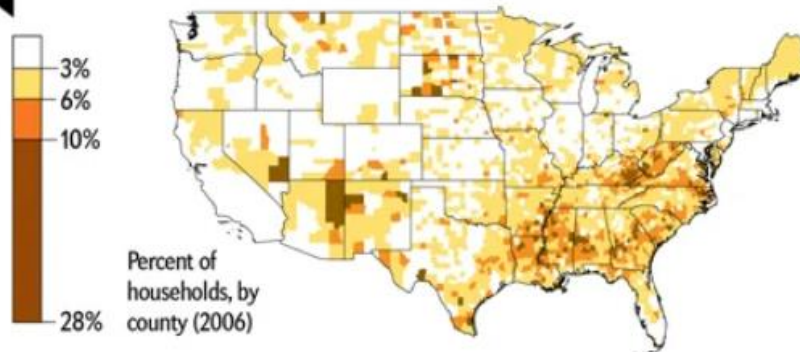
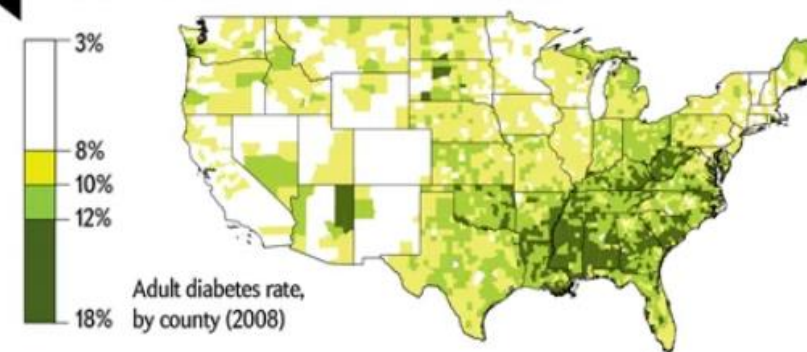
Chris Béné, Inge Brouwer, Elise Talsma,
Sigrid Wertheim-Heck, Ricardo Hernandez

Figure 1: Conceptual framework of food systems for diets and nutrition



May 2012

Where fresh foods are scarce, so is good health

Low-Income Households (more than 1 mile from a grocery)**Health Indicator: Obesity****Car-Free Households (more than 1 mile from a grocery)****Health Indicator: Diabetes**

Proposition (two steps)

1. Develop a Retail Diversity Index that capture the “diversity” of the food available through food retail sources

(methodology)

2. Test some of those assumptions in the cases of low-middle-income countries

(empirical analysis)



Step 1 : developing a Retail Diversity Index

From literature – measures of actual food and beverage products provide a better indicator of the local food environment and decision of people than just the spatial availability of food outlets alone

(Farley and Rice et al.(2009) and others)

⇒ For our RDI it means we will look at

- (i) community nutrition environment** e.g. number, type, location and spatial accessibility of food outlets that are available to the general population
- (ii) consumer nutrition environment**, including the availability, type of food and beverage products

Step 1 : developing a Retail Diversity Index

On the **community nutrition environment**, couples of remarks:

- (i) conclusion from the literature: To get number, type, location and accessibility of food outlets = better to do a on-the-ground survey (direct observation) than relying on SIC code of some sort
- (ii) RDI should satisfy logistic/operational constraints (easy/quick to be collected) and analytical objective = capture some important potential explanatory dimensions related to choice of consumers



Step 1 : developing a Retail Diversity Index



On the **consumer nutrition environment**, couples of remarks:

- (i) Generally diet quality in developing countries has been assessed using a range of **dietary diversity scores DDS** or **food variety scores**

DDS = calculated by summing the number of **food groups** consumed during last 24 hour (e.g. Krebs-Smith et al. 1987).

Food groups: e.g. cereals/roots, vegetables, fruits, legumes/lentils, meat/fish/egg & milk/dairy products.

⇒ **We should go for a RDI of the same nature than was done at the consumer level**

Step 1 : developing a Retail Diversity Index

On the **consumer nutrition environment**, couples of remarks:



(ii) Typical food items that have been used in surveys include: fruit, vegetables, milk, meat and alternatives,

(iii) But also a range of less healthy items, such as sugary beverages, salty snacks and confectionery.

⇒ We should also include some information about unhealthy foods in our index

Step 1 : developing a Retail Diversity Index

Junk food index JFI based on energy dense foods and beverages (EDNP) including

- Fried potato products
- Other salty or sweet chips
- Hot snacks (croquettes, pizzas, etc.)
- Cakes, pastries
- Energy dense products, e.g bars
- Burgers, Hotdogs
- Sweetened beverages (Coke, Pepsi, etc.)
- Sugary or high energy drinks (Redbull, etc.)



Step 1 : developing a Retail Diversity Index

Advantages of this approach

- ⇒ similar nature than DDS = to be able to compare with the results obtained at the household level (linked to 24 recall data)
- ⇒ to be able to compare the diversity between groups of different shop (supermarket, convenience stores, mom-and-pop, etc.)
- ⇒ to see if this different level of diet diversity translate into dietary diversity at household level.



Step 2 : testing the RDI in the field

- Take a picture of the outlet visited from outside
- Visually determine the type of outlet:

1. Ambulant Street vendor

2. Open-air / sidewalk informal food stall/catering

3. Street / sidewalk catering / restaurant

4. Mom-&-Pop / small traditional family-owned grocery store

5. Formal wet-market

6. Informal (wet) market

7. Small or medium size “modern” restaurant / catering

8. Chain-based micro/minimarket

9. Larger supermarket

10. Convenient store

Step 2 : testing the RDI in the field

1. **Ambulant street vendor:** Street / sidewalk food ambulant vendors selling (essentially but not necessarily just) fresh or sometimes minimally processed vegetables and fruits from their bikes / motorbikes.



Currently being tested in Vietnam (Hanoi)

2. **Open-air / sidewalk informal food stall/catering:** Ambulant or semi-permanent open-air / sidewalk informal food stalls/catering selling prepared, cooked (ready to eat) meals. They can also sell some forms of “junk food”(*) and drinks (either fresh fruits or processed/canned).

Note that this category is very similar to the street / sidewalk catering / restaurants types listed below. The different is only the size/scale and degrees of informality/mobility.



Ambition: Nigeria (Ibadan)

Step 2 : testing the RDI in the field

3. Street / sidewalk catering / restaurant:

Street / sidewalk catering / restaurants (serving breakfast, lunch, dinner) or night market stores – usually proposing traditional Vietnamese dishes + beverages.

The difference with the street / sidewalk food stalls/catering mentioned above is that this category is expected to be slightly more “organized”/formal and bigger in size of operation – sometimes operating in front of a formal (traditional) restaurant.



Step 2 : testing the RDI in the field

4. **Mom-&-Pop shop:** small traditional family-owned grocery selling fresh vegetables/fruits, starchy staples or sometimes dairy, but also possibly processed Vietnamese or westerner food products, including items classified as “junk food”, as well as drinks/beverages.



5. **Formal wet market:** those wet markets are defined as formally organized retail structures (with a formal management board, covered premises with running water / storage facilities, etc. and where vendors are usually operating with an official business license). Those would be selling fresh (or minimally processed) fruits/vegetables and/or meat, starchy staples. Note that **catering stores/ restaurants** serving prepared cooked meals/dishes (to eat or to take away) may also be found within those premises



Step 2 : testing the RDI in the field

6. Informal (wet) market – Informal markets are defined as clusters of individuals selling food items, often operating daily and recurrent at the same place and time. Those informal markets are the self-organized / informal version of the wet-market, selling fresh (or minimally processed) fruits/vegetables and/or meat, starchy staples, as well as sometimes more processed foods.



7. Small or medium size “modern” restaurant / catering. Those outlets are usually not family-owned businesses but employ contracted workers. They are selling either ‘westernized’ dishes/food (e.g. specialty = organic, or upscale/gourmet –e.g. western-type cakes, or less healthy products, such as pizza/burgers or other junk food), or Vietnamese traditional dishes (but usually at quite high prices) ready for consumption or to take away. Beverage are also sold there.



Step 2 : testing the RDI in the field

8. **Chain-based micro/minimarket** (e.g. VinMart) – selling both fresh/minimally processed and processed/packaged and ready to eat traditional (Vietnamese) and/or more “westernized” food. This includes therefore vegetables, fruits, meat, dairy products, staples, and junk food. Beverage are also sold there.



9. **Larger chain-based supermarkets** (e.g. Big C). Like micro/mini market those outlets sell both fresh/minimally processed and (ultra)processed and ready to eat traditional (Vietnamese) and/or “westernized” foods and beverages This includes vegetables, fruits, meat, dairy products, staples, and junk food. Beverage are also sold there.



Step 2 : testing the RDI in the field

10. **Convenient store** (e.g. 7eleven GS-25. similar to **Mom-&Pop shop** but not family-owned, those outlets sell a limited line of goods that generally includes dairy, staples, but also possibly fresh/minimally processed vegetables/fruits, and beverages – including westerner or Vietnamese junk food (soda, snacks, etc.).



Step 2 : testing the RDI in the field

- Take a picture of the outlet visited from outside
- Visually determine the type of outlet
- Visual inventory of outlet:
 - Enter the outlet
 - Record the different types of items that are on sell.
 - as you see them on display while walking slowly along the different sections/shelves of the store.
 - determine what sort of items are proposed by reviewing the menus displayed in the premises. (Street / sidewalk catering / restaurant and Small or medium size “modern” restaurant / catering)
 - identify visually the items from a close distance or (if they are willing to answer) ask the person. (Ambulant street vendor or Open-air / sidewalk informal food caterer)

VISUAL INVENTORY OF THE OUTLET

VISUALLY DETERMINE THE TYPE OF ITEMS THAT ARE ON SELL IN THE OUTLET AND IDENTIFY IT WITH an “X” in either one or the two columns

Unprocessed/fresh or cooked/boiled staples			
Rice			
Cassava			
Potatoes / Sweet Potatoes			
Noodle/Pasta (from rice or wheat)			
Bread (sliced = packaged or baguettes)			
Cereals (processed/packaged)			
XXXXXXX other key starchy staples			
XXXXXXX other key starchy staples			
Unprocessed / fresh or cooked legumes			
Peas - any types (e.g. black eyed or green)			
Beans - any types (e.g. Hyacinth or black)			
Soybeans and soybean products			
XXXXXXX other key legume specific			
XXXXXX Specific nuts in Vietnam?			
Dairy products (fresh and/or processed)			
Butter / margarine / yogurts			
Cheeses			
Fresh or processed UHT milk			
XXXXXX other specific dairy products			

Food groupings used

- 1. Unprocessed/fresh or cooked/boiled starchy staples
- 2. Unprocessed/fresh or cooked legumes and nuts
- 3. Dairy products (fresh and/or processed)
- 4. Other animal source foods
- 5. Vitamin A-rich dark green leafy vegetables (unprocessed/fresh or cooked/boiled)
- 6. Other vitamin A-rich vegetables and fruits (unprocessed/fresh or cooked/boiled)
- 7. Other vegetables or fruits (unprocessed/fresh or cooked/boiled)
- 8. Ready-to-eat dishes and meals (fresh or cooked)
- 9. Junk foods
- 10. Drinks and beverages

Results are forthcoming.....