THE FOOD ENVIRONMENT TOOLBOX

Tools to measure natural and built food environments in low- and middle-income countries

September 6th, 2024

V1

Community Food Environment Mapping
Food outlet census

FOOD
ENVIRONMENT
TOOLBOX

Table of Contents

Brief overview

> **Overview of Community Food Environment Mapping Tools:** There are three different tools that are included as part of the community food environment mapping tools: 1) **food outlet census**; 2) roadside food and beverage promotion; and 3) mobile vendor census. Depending on your study needs, it may make sense to use all three tools to allow for a comprehensive depiction of the community food environment.

The Community Food Environment Mapping – Food Outlet Census tool is designed to spatially map all the types of food vendors in the community, as well as the foods they sell and promote, using an observational checklist.

Instructions for the research team

Defining Community
The 'community' food environment can be defined in many ways. The assessment is designed to be used after identifying a community's boundaries using the Participatory Mapping focus group discussion guide included in the Food Environment Toolbox to inform how the target population defines their community. This can also be used to inform the sampling approach.

This document provides an overview of the assessment for enumerators in paper form. We also include additional instructions for the research team to guide the implementation of the assessment as well as instructions for the enumerators in the accompanying Community Food Environment Mapping – Food Outlet Census Supplemental Instructions file. The tool has been adapted to be administered with tablets and mobile devices using the available programming file. The programming file formatting may be adapted by researchers to their needs based on which assessment sections, vendor types, and food groups they would like to include in the assessment.

The **objectives** of this tool are to: assess the types of food outlets that consumers have access to, and the availability and quality of food sold and promoted within them.

The **findings** from this tool can be used to calculate the modified retail food environment index.[1] We provide descriptions of indicators that can be calculated with the data obtained from this tool in the analysis instructions.

This assessment is administered by an enumerator and includes: 1) identifying each food outlet in the community; and 2) completing the checklist for each food outlet. The assessment is informed by the USAID Advancing Nutrition market mapping tool,[2] the Multisectoral Food and Nutrition Project (MUSEFO) surveys,[3] and the Environmental Profile of a Community's Health (EPOCH),[2] which the promotion module is based on.[2,4]

There are two sections to this assessment including:
- Section 1. Food outlet properties and food availability
- Section 2. (Optional) Food and beverage promotion at food outlet

Section 2, food and beverage promotion at food outlet, is optional and is recommended to collect information on the types of promotions that are in a community and where they are seen, including non-commercial health promotions.

Modifications to assessment: The observational assessment may be tailored by the research team to elicit specific information relevant to their research question as well as according to the specific context the tool is being used in. In Section 1, food outlet properties, the list of food outlet types may be adjusted by the research team to only include

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[1] CDC. 2011. *Children's Food Environment State Indicator Report, 2011*.
[2] USAID Advancing Nutrition. 2023. *Guidelines for Market-Based Food Environment Assessments. Instruction Manual.* Arlington, VA: USAID Advancing Nutrition.
[3] Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). 2020. The Multisectoral Food and Nutrition Security (MUSEFO) project Cambodia.
[4] Chow, C.K. et al. 2010. Environmental Profile of a Community's Health (EPOCH): an instrument to measure environmental determinants of cardiovascular health in five countries. *PloS one*, *5*(12), p.e14294.

those of interest, such as mobile vendors; additionally, the list of food groups may be altered to only include those of interest, such as fresh foods. It is important to note that these changes will alter the scope of the tool.

Instructions for enumerator

Complete the assessment for every vendor/food outlets selling foods and beverages in the sampling zone. This includes non-food vendors that are also selling foods and beverages, such as a petrol station selling beverages. The research team may provide you with small incentives to thank the mobile vendors for stopping and interacting with you or for purchasing foods.

You will likely need to make slight adjustments to the vendor types based on the local context. In some cases, local names may be used to describe the same vendor/food outlet types described in the assessment.

Section 1. Food outlet properties and food availability

This section is designed to obtain information on the vendor type, as well as information about what foods that vendor is selling and their quality.

Section 1. Food outlet properties and food availability		
Question	**Response options**	**Tablet programming notes**
1. Select the category of food vendor/outlet	1. Food service (i.e., prepared foods) outlet or vendor (If selected, ASK question 2 then SKIP TO question 6) 2. Grocery retailer (If selected, SKIP TO question 3 then SKIP TO question 6) 3. Specialty shop or vendor (If selected, SKIP TO question 4 then SKIP TO question 6) 4. Wholesaler (If selected, SKIP 2 question 5 then SKIP TO question 6) 5. Supplemental Food Assistance (If selected, SKIP TO question 6) 6. Other (please specify)	Only select one. The specific vendor/outlet types in this question will be displayed for the food outlet category selected in the following questions.
2. Select the specific type of food service outlet	1. Chained fast food restaurant (formal) 2. Restaurant/ take away (non-chain) shop 3. Street food vendor or shop 4. Café or coffee vendor or shop	Only select one. Only display if 1 (food service) is selected in question 1.
3. Select the specific type of grocery retailer	1. Supermarket (formal) 2. Convenience (formal) 3. Small grocery/kiosk 4. Large grocery/kiosk	Only select one. Only display if 2 (grocery retailer) is selected in question 1.
4. Select the specific type of specialty shop or vendor	1. Bakery 2. Meat, fish/seafood, and/or egg vendor 3. Vegetable shop/vendor 4. Fruit shop/vendor 5. Fruit and vegetable shop/vendor 6. Milk shop/vendor 7. Herb and spice shop/vendor 8. Whole dried foods (e.g., cereals, pulses, etc.) shop/vendor 9. Edible oils/fats shop/vendor 10. Sweets shop/vendor	Only select one. Only display if 3 (specialty shop or vendor) is selected in question 1.

	11. Packaged salty snacks and/or instant noodles shop/vendor 12. Sugar-sweetened beverage shop/vendor 13. Coffee or tea shop/vendor (does not include prepared coffee or tea)	
5. Select the specific type of wholesaler	1. Mixed goods wholesaler (e.g., grocery) 2. Specialty shop wholesaler	Only select one. Only display if 4 (wholesaler) is selected in question 1.
6. GPS Coordinates of the food outlet	1. Latitude 2. Longitude	Prompt to record GPS one set of coordinates.
7. Photo	Take a photo of vendor.	This is optional. Allow multiple photo uploads.
8. Level of permanence of food outlet	1. Fixed structure in a fixed location (If selected, ASK question 9 then SKIP TO question 11) 2. Semi-permanent in a consistent location (If selected, SKIP TO question 11) 3. Non-permanent structure (If selected, SKIP TO question 11) 4. Mobile vendor (If selected, SKIP TO question 10) 5. Semi-mobile vendor (If selected, SKIP TO question 11)	Only select one per vendor.
9. What kind of fixed structure?	1. Roof and 4 walls 2. Roof and 1-3 walls 3. Roof without walls	Only select one. Only display if 1 (fixed structure in a fixed location) is chosen in question 8. After this question, SKIP TO question 11.
10. What kind of mobile vendor?	1. Non-motorized (on land) 2. Motorized (on land) 3. Non-Motorized (boat) 4. Motorized (boat)	Only display if 3 (mobile vendor) is chosen in question 8.
11. Which foods are being sold by the food outlet?	1. Starchy staples 2. Legumes/pulses 3. Nuts and seeds 4. Unsweetened milk, yogurt, and fresh cheese 5. Eggs 6. Red meat 7. Poultry, game meat, and insects	Check all food groups that apply.

	8. Fish and seafood	
	9. Processed meat	
	10. Vitamin A-rich vegetables	
	11. Dark green leafy vegetables	
	12. Other vegetables	
	13. Vitamin A-rich fruits	
	14. Other fruits	
	15. Fats and oils (If selected, ask question 12)	
	16. Sweets (If selected, ask question 13)	
	17. Sweet drinks (If selected, ask question 14)	
	18. Ultra-processed salty snacks	
	19. Ultra-processed ready-to-eat/heat foods	
	20. Prepared foods by street vendors and restaurants (If selected, ask question 15)	
	21. Salt, MSG, and salty sauces	
	22. Simple sugars	
	23. Fast food	
	24. Bottled water	
	25. Alcohol	
	26. Fortified mixes	
	27. Spices, tea, coffee, and condiments	
	28. Other (please specify)	
12. What type(s) of 'fats and oils?'	1. Animal fats and oils 2. Plant fats and oils 3. Hydrogenated fats and flavored spreads	Only display if 15 (fats and oils) is chosen in question 11.
13. What type(s) of 'sweets?'	1. Grain-based 2. Other sweets 3. Ice cream	Check all that apply. Only display if 16 (sweets) is selected in question 11.
14. What type(s) of 'sweet drinks?'	1. Sweet tea/coffee/cocoa/milk-based drinks 2. Fruit juice, smoothies, and other fruit-based sweet drinks 3. Sodas, energy drinks, sports drinks, etc.	Check all that apply. Only display if 17 (sweet drinks) is selected in question 11.
15. What type(s) of 'prepared foods by street vendors and restaurants?'	1. Deep fried 2. Mixed-dishes, soups, and meals 3. Prepared salads and other fruit- or vegetable-based dishes	Check all that apply. Only display if 20 (prepared foods by street vendors and restaurants) is chosen in question 11.
16. Indicate in which form the majority of foods are sold at the food outlet.	1. Raw/fresh 2. Boiled or steamed 3. Fermented or pickled 4. Baked or grilled 5. Smoked 6. Stir-fried 7. Shallow/pan-fried 8. Deep-fried (prepared) 9. Dried or canned 10. Packaged 11. Other (e.g., poaching, combination of methods like roasting and simmering, boiling and deep frying, etc.) (please specify)	Only select one.

17. How much of the food sold is damaged (broken or cracked/ blemished/squashed/torn), spoiled, or have insects on them?	1. All 2. Nearly all 3. Some 4. None	Only select one.

Section 2. (OPTIONAL) Food and beverage promotion at food outlet

In this section we want to illicit information on any promotions that are visible at the vendor and for what foods they are for.

OPTIONAL Section 2. Food and beverage promotion at food outlet		
Question	**Response options**	**Tablet programming notes**
18. Are there food or beverage promotions at the food outlet?	1. Yes 2. No (If selected, SKIP TO end of survey)	If 'no' is selected, skip to the end of the survey.
19. Please indicate which food group(s) you see promotions for	1. Starchy staples 2. Legumes/pulses 3. Nuts and seeds 4. Unsweetened milk, yogurt, and fresh cheese 5. Eggs 6. Red meat 7. Poultry, game meat, and insects 8. Fish and seafood 9. Processed meat 10. Vitamin A-rich vegetables 11. Dark green leafy vegetables 12. Other vegetables 13. Vitamin A-rich fruits 14. Other fruits 15. Fats and oils 16. Sweets 17. Sweet drinks 18. Ultra-processed salty snacks 19. Ultra-processed ready-to-eat/heat foods 20. Prepared foods by street vendors and restaurants 21. Salt, MSG, and salty sauces 22. Simple sugars 23. Fast food 24. Bottled water 25. Alcohol 26. Fortified mixes 27. Spices, tea, coffee, and condiments 28. Other (If selected, ask question 22 then SKIP TO question 17) (please specify)	Check all that apply.
20. Select the promotion type observed for [food group]	1. Billboard 2. On bus/car/taxi/tuk-tuk (or other vehicle) 3. On pavement 4. On shop window 5. Radio or verbal promotion 6. On umbrella 7. On cooler, fridge, or other branded materials	Check all that apply. Ask for every food group chosen.

	8. Posters/pamphlets/leaflets 9. On shop wall (including wall paintings like murals) 10. Promotion through attractive display 11. On vendor cart/vehicle 12. Free food samples 13. Other (please specify)	
21. Select the promotion categories observed for [food group]	1. Price promotion 2. Promotional characters (attracting children) 3. Quantity discounts 4. Game/sweepstakes/prize promotion 5. Combo offers 6. Food delivery app promotion 7. Non-commercial/government promotion of 'healthy' food/beverage/diet 8. Commercial promotion of 'healthy' food/beverage/diet	Check all that apply. Ask for every food group chosen.
22. Please rate the visibility/audibility of [food group] promotions	1. Not clearly visible (faded or covered), readable, or audible 2. Partially visible and somewhat readable or audible 3. Clearly visible (not faded or covered), readable, or audible 4. A mix of visible/audible and non-visible/audible promotions	Only select one. Ask for every food group chosen.
23. How many of the [food group] promotions are targeting children?	1. All 2. Nearly all 3. Some 4. None	Only select one per food group. Ask for every food group chosen.
24. How many [food group] promotions do you see in total?		Ask for every food group chosen.

Conclusion

Conclusion. Photos and comments (OPTIONAL)		
Question	**Response options**	**Tablet programming notes**
25. Attach any relevant photos of any aspects of this assessment that you are unsure of how to classify (optional).		Allow multiple photo uploads. Allow write-in, text response caption. Optional