RAPID APPRAISAL FOR URBAN NUTRITION: A PRACTICAL GUIDE
DELHI, INDIA CASE STUDY

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Executive Summary

By 2050, 70% of the world’s population will live in urban areas, with much of this increase coming from developing nations. The population living in megacities of over 10 million people will sharply increase as well.\(^1\) However, nutrition research and policy often focuses on rural areas, with little interest on its urban counterpart. Evidence, data on the extent of urban nutrition challenges and how best to tackle them is sorely lacking. With issues ranging from the double burden of obesity and under-nutrition in the same urban setting, to persistent micronutrient deficiencies, to the rising burden of non-communicable diseases (NCDs) in developing countries, there is a great need for more investigation into the drivers of urban malnutrition.

This report is a result of collaboration between a team of four graduate student researchers from the Johns Hopkins University School of Advanced International Studies (SAIS) and the Global Alliance for Improved Nutrition (GAIN) during the 2016-2017 academic year. The project goal was to conduct a rapid appraisal of the problems surrounding urban nutrition in a large city and to summarize the methodology used into a practical guide for future research teams. The research team investigated urban nutrition in Delhi, India, focusing on barriers to the consumption of fresh fruits and vegetables. This included a field research trip to Delhi for a 2-week period in January 2017. Lessons from research in Delhi are included throughout this report as practical examples of possible points of interest, pitfalls, and special considerations.

This guide is appropriate for use by any research team conducting an initial appraisal of nutrition in an urban setting. Key elements are grouped into four thematic areas: governance, value chains, food environment, and consumers. Developing a general understanding of the key stakeholders, initiatives, and challenges within each of these thematic areas is crucial to understanding the status and problems of nutrition in any large city. Within each section, key questions for consideration will guide researchers in preparation, literature review, and data collection as well as final analysis.

**Governance** is an important place to start in order to understand the policies, programs, and politics that affect the nutritional status of the city. Political economy analysis and consideration of the policy innovation space available to municipal decision-makers will elucidate the nature of political power and control in the study city. An analysis of the key nutrition policy levers currently being used by governments and a mapping of the power,

interests, and responsibilities of governance stakeholders across national, state, and local governments will further clarify the drivers of nutritional outcomes. Careful consideration of both champions and obstructionists impacting progress in the city will allow for a thorough analysis of the governance challenges and opportunities.

Agricultural value chains tend to be long and involve many stakeholders, especially in developing countries. The urban value chain is a sub-section of the entire sequence as it excludes farmers and the production process. Some of the factors that affect the complexity of the urban value chains are: market systems, state of transport and market infrastructure, and type and concentration of varying stakeholders. Identifying urban actors’ influence and market power in the entire process, how these actors interact, their relationships are critical to a value chain assessment. Fees and commission structures shed light on how produce is priced in markets and the range of price mark-ups with ultimate implications for supply and demand.

The food environment is comprised of several factors that influence consumers’ food choices. These factors include food prices, convenience, desirability of food items, food promotions and advertisements, and information. Additional features of the urban landscape, such as the prevalence of street food vendors or the nutrition conditions in schools are also critical to a complete picture of current food consumption patterns. Understanding how these factors shape the urban food landscape is key to identifying the challenges urban consumers face as well as potential intervention areas.

Any attempt to understand or influence the nutrition sphere must be rooted in an understanding of the consumer. Each tailored government policy, complex vegetable value chain, street vendor, and local market influences the nutrition knowledge, attitudes, and practices of urban consumers. When seeking to understand and influence the consumption of fresh fruits and vegetables, focusing on the consumer means first understanding what consumers are actually eating and why they make the choices they do. Behavior can be driven by resource or time constraints, preferences, perceptions, or knowledge. In urban contexts where even groups with low purchasing power have a wide variety of choices, a consumer’s level of nutrition awareness informs decisions that they make regarding their diet. Centering nutrition analysis on the individual will also reveal the diversity of consumers at the end of the value chain, including vulnerable social groups with unique nutrition constraints.

Rather than providing prescriptive best practices, this flexible research tool will allow researchers to adapt their analysis to the nuances of each city. The rapid urban appraisal will allow the research team to identify potential areas of intervention, which is the first step in affecting positive changes in urban nutrition.
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Acronyms

APMC – Agricultural Produce Marketing Committee
FAO – United Nations Food and Agriculture Organization
F&B – Food and Beverages
FMCG – Fast-Moving Consumer Goods
FFQ – Food Frequency Questionnaire
FFV – Fresh Fruits and Vegetables
GAIN – Global Alliance for Improved Nutrition
ICDS – Integrated Child Development Services
IFPRI – International Food Policy Research Institute
IHDS – India Human Development Survey
MDM – Mid-Day Meal
NASVI – National Association of Street Vendors of India
NCDs – Non-Communicable Diseases
PDS – Public Distribution System
SAIS – School of Advanced International Studies
WHO – World Health Organization
Conducting a “Rapid Appraisal” for Urban Nutrition and the Consumption of Fresh Fruits and Vegetables

A Rapid Appraisal for Urban Nutrition

A rapid appraisal allows for a preliminary yet highly informative, qualitative assessment of the situation at hand. It is usually conducted under time constraints where extensive quantitative research is not feasible. Rapid appraisals often include multi-disciplinary teams, providing a range of differing perspectives that are useful in the qualitative assessment.

The rapid appraisal technique generally includes three basic elements:

- A system perspective
- Triangulation of collected data
- Iterative data collection and analysis

In combination, these techniques provide a “flexible but rigorous approach” to qualitative data collection and help validate findings. Please refer to James Beebe’s “Basic Concepts and Techniques of Rapid Appraisal” for more information on this methodology.2

A rapid urban appraisal is highly suited to projects where a preliminary assessment of the state of nutrition in an urban setting is desired, but time and resources are limited. A two to three week research period is sufficient to carry out a rapid appraisal using targeted research methodologies. As a qualitative research project, some of the methodologies that can be adopted are the following:

- **Key informant interviews:** This method should be used while speaking to key representatives or informants, such as government officials, authorities and regulators, suppliers, academics, unions, or groups. These interviews should generally be semi-structured, with interview guides prepared beforehand.

- **Focus groups:** Should be adopted while trying to determine consumption trends, behaviors and habits. Examples of appropriate targets for focus groups include consumer groups (especially women in the home), farmers, and vendors.

- **Observations:** In such a project, observations play an important role. Aspects such as availability and accessibility of food markets, sanitation and storage facilities for fresh produce, the food environment and level of hygiene are a few of the factors to look out for while undertaking observations on field visits.

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• **Informal semi-structured interviews:** This method can be adopted while interacting with produce vendors, farmers, and middlemen. Building trust in a short amount of time is key while interviewing these groups of people, hence keeping the interview relatively informal is advisable. This method is also particularly useful while trying to triangulate data.

Given a brief, two-week time frame, our research team conducted key informant interviews, observed a variety of local markets serving different consumer groups, and engaged in numerous semi-structured interviews with vendors, consumers and retailers.

**How to read this report**

This report, prepared by a team of graduate students at Johns Hopkins University School of Advanced International Studies (SAIS) on behalf of the Global Alliance for Improved Nutrition (GAIN), provides a Standard Operating Procedure (SOP) for conducting rapid urban nutrition appraisals in cities. It is intended to serve as a tool for researchers seeking to conduct problem-definition based research on nutrition in an urban area, in order to refine their methods, specify their research questions, and develop a holistic understanding of the nutritional status of the city.

In Stage 1, we outline the steps researchers should take in preparing for the field visit and conducting initial scoping research. Stage 2 proposes a flexible but comprehensive model for data collection in the field. We advise researchers to disaggregate the study into four main thematic areas, starting from the broad political environment and narrowing down to the individual consumer.

These four components comprise the four sections of Stage 2: **Governance, Value Chains, Food Environment, and Consumers.** Within each component, we propose various methodological considerations and provide tools and models through which to conceptualize the study and its findings. Finally, in Stage 3 we detail the key considerations that researchers should address upon returning from the field and beginning data analysis.

This SOP was developed based on the SAIS team’s experience conducting a rapid urban nutrition appraisal on behalf of GAIN in Delhi, India. In order to incorporate this learning into the SOP and provide illustrative examples, case studies and tools from our fieldwork in Delhi are woven throughout the report. This is not to imply that other teams will necessarily come to similar conclusions or encounter the same circumstances elsewhere. Rather, these case studies are intended to demonstrate the flexible nature of this SOP and the various roads researchers may be led down. Delhi is a unique city even within India, and as the case studies will
demonstrate, the particular nature of the study city is precisely what makes conducting thorough research using the tools presented in this report so important in order to understand the idiosyncrasies of every context.

**Introduction to the Case Study: Delhi, India**

Rapid urbanization in India may result in the urban population growing by as much as 400 million people by 2050. Already, most people living in Indian cities are not eating enough nutritious foods. Urban slum-dwellers in particular lack dietary diversity, often consuming “monotonous, cereal-based diets.”³ Chopra et al. found that “slum-dwelling women’s diets lack adequate micronutrient-rich foods.”⁴ These trends in India match global trends emerging in urban areas.

In Delhi, the incidence of malnutrition is high among the urban poor, especially children. Only 5.8% of children age 6–23 months receive an adequate diet and as a result, 32.3% of children under five are stunted.⁵ It is likely that this average masks extreme inequalities across the city, with much higher rates of stunting predicted in slums and in resettlement colonies housing migrants from rural areas. The most common micronutrient deficiencies include iron and vitamin A, but poor residents of Delhi slums may also be deficient in iodine, folate, zinc, B vitamins, and vitamin D.⁶ Anemia rates are also high, affecting 52.5% of women age 15–49 and 21.6% of men of the same age group.⁷ Furthermore, consumption of unhealthy “ready to eat” fast food style foods lacking in nutritional content is increasing in Delhi slums.⁸

In order to understand the root causes of Delhi’s high levels of malnutrition and to identify potential intervention points and partners on the ground, the SAIS team carried out a comprehensive assessment of nutrition in Delhi from September 2016-May 2017, with a two-phrase approach to addressing the issue.

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week field visit in January 2017 employing the rapid urban appraisal techniques described in
this report. The goal of the trip was to understand the influences and challenges for a low
wealth index group (defined by the team as those earning between 10,000-15,000 Indian
rupees per month) affecting consumption of sufficient amounts of safe and nutritious fruits and
vegetables. While in Delhi, we used a combination of qualitative methods to gather data: we
interviewed 28 key informants and 17 fruit and vegetable vendors, and conducted market
assessments at the two largest markets in the city in addition to local neighborhood markets.
Samples of the interview guides and market observation guides employed by the team are
included in Annex II.

**Stage 1 – Initial Review and Preparation for Field Research**

After selecting a field site (the urban area of interest) and general research question (i.e. what
types of interventions could potentially increase fruit and vegetable consumption in Delhi), the
research team is ready to begin a literature review.

**Literature Review**

The goal of the literature review is to determine what is already known about the topic. It is a
critical step in familiarizing oneself with the history and cultural context of the chosen field site,
as well as previous work done regarding nutrition in the city. It can also be beneficial to review
literature asking similar questions in other urban areas as a means of broadening one’s view of
what types of interventions are possible. During this process, it is also helpful to note research
and data collection strategies that have been used in similar investigations. Understanding the
research landscape of similar research and information available is useful in shaping focus areas
for the field visit, as well as interpreting study results. For more information for how to conduct
a comprehensive literature review, see Patton (2014) in the annotated bibliography found in
Annex I.

**Identify and Locate Relevant Documents and Resources**

Relevant data sources and documents may include academic articles, news articles,
dissertations, and data sets among many others. Reports from NGOs, governments, and
multilateral organizations working in the field are often a crucial source and an excellent place
to start research. Some examples of useful data sources include:

- National Health Surveys: Typically conducted by the country government and often
  supported by NGOs and multilateral organizations.
- Municipal Nutrition Plans: Municipal governments often have annual or five-year nutrition
  strategies targeting relevant issue areas. These plans are also useful for understanding
government priorities and where the “political will” currently sits.
• WHO Global Database on the Implementation of Nutrition Action: A platform for sharing standardized information on nutrition policies and actions.
• FAO Food Price Index and the OECD Prices & Inflation Database: To understand food affordability and the percentage of the average household budget is spent on food.

An extensive list of types of data sources useful for this exercise is included in Annex IV.

**Initial Stakeholder Mapping**
Conducting a literature review naturally leads to a better understanding of the stakeholders currently involved in the issue area. Note all stakeholders, including report authors, government ministries, and international organizations, into a list for further review, outreach and landscape mapping activities. This list of stakeholders will form an important base for conducting pre-field visit interviews, as well as field data collection.

**Pre-Field Visit Interviews with Subject Matter and Local Experts**
It is strongly recommended that the team begin interviews with subject matter and local experts before the field research trip. These interviews can provide broader context for the research, provide feedback on research plans and tools, assist in understanding what to expect, as well as point to additional stakeholders and interviewees. We recommend conducting semi-structured interviews with these experts, and allowing them to share experiences and information they think would be most useful.

<table>
<thead>
<tr>
<th>Case Study 1: Delhi – Target City</th>
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<tr>
<td>Our team conducted a short series of pre-field visit interviews, targeting nutrition professionals familiar with the Delhi environment. These interviews were useful in expanding our understanding of potential intervention points and the actions of key stakeholders. For example, one interviewee brought to our attention the issue of nutrition in daycare settings, explaining that crèches and day care centers are often located near work sites. Another expert shared the increasing importance of food eaten outside the home and advised us to look specifically at the quality and impact of street food on the urban diet.</td>
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**Create Observation and Interview Guides**
Observation and interview guides assist the research team in collecting comprehensive and consistent data. We recommend creating market assessment and observation guides focusing on the key aspects of food availability, accessibility, affordability, nutrition, hygiene, and stakeholders. We also recommend creating a set of interview guides, tailored to the different stakeholder groups the team plans to interview before the field research trip.
It is most useful to review these guides with experts before the research team leaves to understand if there are any inconsistencies, unclear questions or cultural adaptations to be made.

Annex II includes the Market Assessment and Interview Guide used during the Delhi Field Visit. For a review of best practices in creating observation and interview guides, please see “Qualitative Research Methods: A Data Collector’s Field Guide” published by Family Health International in the annotated bibliography in Annex I.

A Note on the Ethical Guidelines of Qualitative Research
Throughout the study phases (research design, interviewing, reporting), there are a number of ethical considerations to be made in terms of anonymity, informed consent, confidentiality, and potential impact on the participants of the study. The research team should be sure to consider each of these points with the leadership team and consult ethics professionals if there are any doubts. Most research universities have an Office of Research Ethics with information, resources and professionals to assist with ethics related questions.

Stage 1 Outcomes
After completing Stage 1, the team will have an understanding of the existing literature on the research question, an understanding of relevant stakeholders, and a set of observation and interview guides (ideally with feedback from the subject matter experts).

Stage 2 – Data Collection

For each of the four key thematic areas, we have provided discussion and relevant questions to guide the research team. Under each thematic area, relevant framework(s) present a lens through which to consider the topic.

Teams should carefully consider each of the questions presented both when developing a plan for data collection and when in the field. A key element of any rapid appraisal, no matter the context, is iteration. Teams should continue to use these questions as a guide during the field visit to ensure the appraisal includes appropriate information on each area. This will maximize the chances that a rapid appraisal will successfully identify key constraints and considerations specific to the city being researched.
Analyzing access to nutrition in any urban center demands that special attention be paid to governance and public policy. In low and middle income countries in particular, national and local governments play critical roles in the governing of food systems and the delivery of services that advance nutritious diets and livelihoods.⁹

Depending on the context, municipal governments may be forces of innovation and effectiveness or they might stymie progress. National governments may dictate top-down policies or they may play a hands-off role. Understanding the political and institutional

dynamics driving public policies and the wide-ranging ways in which these policies can affect urban nutrition is therefore a central component of rapid urban nutrition appraisal.

In addition to the role of governments in shaping the food environment through regulation and investment, Acosta and Fanzo (2012) identify three key reasons the public sector plays a critical role in improving nutrition:

- Governments must coordinate public policies in order to address the numerous underlying causes of malnutrition. These drivers are overwhelmingly rooted in market failures and the delivery of public goods – policy areas that are ripe for government intervention;
- Governments must be held accountable by citizens, the media, and the private sector in order to meet the needs of the most vulnerable; and
- Governments must provide time-sensitive support to infants and young children in order to prevent irreversible damage from micronutrient deficiencies. 10

As a result, “strengthening nutrition governance will directly contribute to the improvement of nutrition outcomes.” 11 Rising rates of urbanization and growing inequality within cities presents new, pressing challenges for policymakers that require new, innovative analytic tools. As the International Food Policy Research Institute (IFPRI) notes in its 2017 Global Food Policy Report, “the transfer of poverty, food insecurity, and malnutrition to urban areas demands a new understanding of the drivers of these problems and of the policies, programs, and interventions needed to tackle them.” 12 In this section, we address this need by outlining the five components of a nutrition governance analysis that research should be addressed in a comprehensive rapid urban nutrition appraisal.

First, the team should conduct a political economy analysis in order to understand the general nature of political power and control in the study city.

Second, identify the key policy levers currently being used by governments to address the double burden of undernutrition and NCDs, as well as those not currently being implemented that might be feasible in the study context.

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11 Ibid.
Third, identify and map the power, interests, and responsibilities of governance stakeholders across national, state, and local government. This includes all public bodies that play a role in the formulation and implementation of nutrition policy in the study city.

Fourth, consider the political economy dynamics identified earlier and analyze the policy innovation space available to municipal decision-makers.

Finally, analyze the challenges and opportunities for improving nutrition policy in the city. This process involves careful consideration of both champions and obstructionists impacting progress.

*Figure I: Five components of a municipal nutrition governance analysis*
Political Economy Analysis

Political economy analysis “focuses on how power and resources are distributed and contested in different contexts, and the implications for development outcomes.”

- What is the nature of political power and control in the city?
- What public entities have jurisdiction over policymaking, and in what space?
- What type of financial independence does the city government have?
- Are public programs centrally funded or do resources have to be raised locally.

In thinking through the governance of urban nutrition, both horizontal and vertical power relationships must be considered. Vertically, authority to make, implement, and fund public policies will often vary widely across layers of government. For example, “while many policy and budgetary decisions are made at the national level, spending and implementation increasingly rest with states, districts, and city governments.”

Horizontally (at the same level of government, whether national, state, or municipal) authority over certain issues may be concentrated in a single body or dispersed across actors. The first step to identifying these power dynamics is to identify these government stakeholders.

Many urban centers, especially capital cities, may have unique governance structures with national, state, municipal and district actors governing the same territory with overlapping roles. The analysis of nutrition governance in the study city should therefore start with a big-picture analysis of public sector stakeholders. Municipal governments in developing countries may lack the financial resources and capacity necessary to carry out their mandates. Even if a municipal government has legal and policy authority to intervene in a particular sphere, its ability to do so independently may be constrained by such financial and capacity concerns. Answering these questions early on through a brief political economy analysis will enable the research team to better understand the challenges and opportunities facing municipal governments.

Identifying public funding resources is not always easy. Information obtained by analyzing the government’s annual finances or the declaration of the budget at the beginning of the fiscal year is a good first step, although it is important to keep in mind that allocation is often very different from actual expenditure. Identifying the engagement of the private sector is another

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14 Reardon, Growing Food for Growing Cities, 2016, 63.
good way to gauge the amount of funding available. Some municipalities may have collaborated with the private sector to provide certain goods and services, increasing the overall resources available to nutrition policy and programs.

Case Study 2: Unique Governance Structure of a National Capital Territory

Our case study of Delhi, India underscores the importance of conceptualizing the nature of political power and governing jurisdiction when considering public policies to address undernutrition in cities. Our key informant interviews and literature review revealed that, contrary to our original hypothesis, the municipal government would not be an appropriate partner for the majority of nutrition interventions.

Delhi has a distinctive governance structure in the Indian context. Vertically, there are three different layers of government with jurisdiction over nutrition policy: national, state, and municipal. The municipal government in Delhi is comprised of five different governing bodies, each with jurisdiction over different geographic parts of the city. Simultaneously, “the borders of the National Capital Territory (i.e. the state) are largely co-extensive with those of the MCD (i.e. the municipality).” Delhi is unique in this sense, being both a city and a state, and therefore the policy roles that would be played by municipal government elsewhere are the prerogative of the state government in Delhi. It is possible that other capital cities may face similar challenges and political contestation.

Nutrition Policy Levers

- What are the main public policies affecting nutrition in the city?
- What types of policy levers are the government using? Which are missing?
- Are there any policies seeking to address the double burden of malnutrition by seeking to reduce overweight, obesity, and NCDs?

Governments seeking to improve nutrition have numerous policy levers at their disposal. Many methods exist for conceptualizing and modeling nutrition policy levers (see the annotated bibliography in Annex I for a sample). Given the salience of the double burden of malnutrition in urban areas, we adopt Swinburn et al.’s 2013 Food-EPI model. This model disaggregates policy levers that the government can use to influence the food environment. It includes seven categories: food composition, food labeling, food promotion, food provision, food retail, food prices, and trade and investment agreements. These categories along with illustrative examples are modeled in Figure II below.

Figure II: Nutrition Policy Levers and Examples (adapted from Swinburn et al., 2013)\textsuperscript{18}

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\textsuperscript{18} B. Swinburn et al., "Monitoring and benchmarking government policies and actions to improve the healthiness of food environments: a proposed Government Healthy Food Environment Policy Index," \textit{Obesity Reviews} (October 2013): 24-37. Icons created by (left-right, top-bottom): Mourad Mokrane; Michael Wohlwend; Casey Fluster; Roberto Chiaveri; Gan Khoon Lay; Curtis Free; Mungang Kim. From Noun Project.
The research team should identify each public policy affecting nutrition in the city, using the Swinburn model as a conceptual frame to categorize interventions. Be aware that these interventions might address either undernutrition or overweight and obesity, or interventions could be in place to tackle both forms of malnutrition simultaneously. For example, an undernutrition price policy might be a subsidy on the sale of leafy greens in the city, while an overweight and obesity price policy would be a tax on the sale of sugary beverages.

<table>
<thead>
<tr>
<th>Case Study 3 : National Nutrition Policies, Local Implementation</th>
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<tr>
<td>Every key nutrition policy or program we identified in Delhi is linked to a top-down national policy but is implemented locally. These policies are overwhelmingly one-size-fits-all, designed with rural areas in mind and imposed on the urban context. They are summarized below.</td>
</tr>
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<table>
<thead>
<tr>
<th>Policy</th>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Distribution System (PDS)</td>
<td>Provision; Prices</td>
<td>Welfare program provided subsidized grain and rice to households below the poverty line</td>
</tr>
<tr>
<td>Integrated Child Development Services (ICDS)</td>
<td>Provision; Promotion</td>
<td>Nutrition support and awareness for pregnant and lactating mothers, infants and young children</td>
</tr>
<tr>
<td>Mid-Day Meal (MDM) Scheme</td>
<td>Provision</td>
<td>School feeding program, with varying local efforts to improve the nutritional quality and dietary diversity of the meal</td>
</tr>
<tr>
<td>Food Safety and Regulation</td>
<td>Food composition; Labeling</td>
<td>Regulating safety and standards for food and beverage operators, including street vendors</td>
</tr>
<tr>
<td>Agricultural Produce Marketing Committee</td>
<td>Retail; Prices</td>
<td>Independent governing body with jurisdiction over wholesale and sub-agricultural markets in Delhi</td>
</tr>
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</table>

**Stakeholders**

Governance stakeholders include the key entities and actors across national, regional, state, and/or local government that play a role in the design and/or implementation of public policy affecting nutrition.

- What are the main government bodies involved in the design or implementation of the policy?
- Where are there overlapping mandates?
- What non-governmental partners (i.e. civil society, private sector, multilaterals) are supporting implementation?
Political economy issues identified above are often highly salient for nutrition interventions, which by nature consist of multiple sectors and involve a variety of stakeholders at varying levels of government. Thus, once key public policies have been identified, it is critical that the research team identify and map the power, interests, and responsibilities of all government stakeholders involved in those policies.

This stakeholder mapping can be then used to target potential entry points and partners whose buy in would be critical to the success of any policy intervention.

Figure III: Nutrition Governance Stakeholders in Delhi – Vertical and Horizontal Linkages

Stakeholder mapping of nutrition governance in Delhi revealed a disjointed, siloed structure. As one key informant explained, in Delhi’s government “nutrition is everybody’s baby, so it’s nobody’s baby.” Coordination is weak, with responsibility for policy dispersed both vertically and horizontally. Indeed, across the country “critical failures in governance [are] adversely affecting the effectiveness of policy responses.”

Vertically, nutrition governance in Delhi is relatively centralized. One-sized-fits-all nutrition guidelines are designed at the central level, primarily with rural areas in mind. Implementation occurs at the state level, with the exception of the Mid-Day Meal (MDM) program, which is primarily implemented by the municipal governments in city-run schools. States, however, have the autonomy to tweak the guidelines to best suit their local requirements.

Horizontally, nutrition governance is dispersed across various government bodies, with no central nutrition mission to oversee the sector as a whole. Each policy is the responsibility of a different horizontal governing body. The Delhi nutrition governance stakeholder map is illustrated in Figure III above and a sample stakeholder analysis categorizing organizations by interest and influence is illustrated in Figure IV below.

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Policy Innovation Space

Policy space is defined as “the freedom, scope, and mechanisms that governments have to choose, design, and implement public policies to fulfill their aims.”

To what degree does the municipal government have control over the public policy, or the policy design and implementation freedom to adapt it on a local level?

As urban nutrition gains growing global attention and local salience, “there has been a significant growth in response to urban food problems by municipal governments.” From Nairobi to Amsterdam to Medellín, cities are increasingly taking direct action to improve the diets of residents. This local level innovation, spurred in part by the Milan Urban Food Policy Pact signed in 2015 by more than 100 countries, is a promising development for the future of urban nutrition. However, the ability of municipal governments to innovate and adapt may be constrained by political, financial, and capacity challenges. Researchers should seek to assess both the state of local policy innovation and the potential for greater innovation going forward.

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Policy space analysis involves “understanding policy priorities and identifying opportunities and constraints to strengthening policy agendas.” The multi-sectoral nature of nutrition requires for a complex policy space analysis both across and within sectors. Understanding the capacity for a local government to innovate and experiment with nutrition policies is key to the research team’s ability to develop feasible, actionable recommendations for engagement with the city’s leadership.

**Case Study 5: Missing Policy Space**

Depending on the distribution of political power municipal governments may or may not have the ability to design and implement innovative nutrition policies. In Delhi, this power is sorely lacking. According to key informants, the municipal governments in Delhi “lack the policy space” to make and adapt nutrition policy. Even at the state level, where in theory the State Government has the authority to adapt and build upon central level policy, such experimentation is not occurring. Interventions to encourage local policy innovation would therefore be most effective if targeted at the state rather than municipal.

**Challenges and Opportunities: Considering Policy Champions and Obstructionists**

- How much success does the policy have in this city?
- What is constraining success in this city? What is enabling it?
- Are there other cities in the country or region having more success, and if so, why?
- Who are the key champions of the policy, both within and outside of government?
- Who are the main obstructionists?

Given the challenges identified, the research team should subsequently consider both champions and obstructionists capable of advancing or constraining sound policymaking and implementation. Individual leadership is critical in overcoming obstacles, as “without such leadership, and given limited resources and human capacity, the routine operations of government are unlikely to lead to effective public efforts to improve health and nutrition.” The need for such champions is furthered by the multi-sectoral nature of urban nutrition, which demands a coordinating mechanism or leader in order to harmonize efforts inside and outside of government.

In Delhi, we discovered the importance of a developmentally-minded leader to drive the nutrition agenda forward. The presence of such an officer at any level of government is a key

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24. Ibid.
driver of policy change. Likewise, influential players with a stake in the status quo are likely to obstruct any efforts towards policy reform.
FRUIT AND VEGETABLE VALUE CHAINS

According to the World Bank, “Chains composed of companies or individuals that interact to supply goods and services are referred to as productive chains, supply chains, distribution chains or value chains.”25 While these definitions can be applied differently across industries, they all seek to capture and describe the complex interactions of firms and processes that are employed to create and deliver products to end users. This is no different in the agricultural/horticultural industry. The following section will delve into the stakeholders, processes, actors who play a vital role in developing country food systems.

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Agricultural Value Chains
The typical chain in a developing country follows the sequence of events outlined below:

*Figure V: Agricultural Value Chain*

The above graph describes a very general value chain usually employed in agricultural and horticultural chains. These may vary greatly across countries, depending on government policy and regulation, types of crops or produce cultivated, and the state of infrastructure in the region.

**What are the processes that constitute the value chain?**

Below is a brief description of the processes and stakeholders a research team would likely encounter:

**Production**: This stage entails the planting, growing and harvesting of the produce. The farmer is the key actor along with other support stakeholders (providing services or goods such as fertilizers, seeds, irrigation, power, equipment).

**Collection**: Once the produce has been harvested, it is typically aggregated at a district, village and subsequently at a town level. Middlemen arrange this process and are vital to this part of the chain. They not only pay the farmers but often also act as their informal source of credit, offering them small amounts of capital as and when required.

**Transport**: The produce is collected and transported from distant villages to warehouses/storage facilities typically located outside large urban centers. Large unrefrigerated trucks often make these long journeys. These transport services are provided by private sector players, but are typically paid for by the middlemen or commission agents.

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**Storage:** Produce is sorted according to quality, size and stored at these storage facilities. Due to large volume turnover, most developing countries do not actually store their produce but take it directly to wholesale markets or processing centers for immediate sale. Storage facilities are provided by local private sector players.

**Processing:** This is not a well-established stage in most developing countries. Unlike more developed markets, standards around size, shape, and quality do not exist or are not enforced. Labeling and packaging is non-existent, and unprotected produce is sold in wholesale markets.

**Wholesale markets:** Produce is sorted, graded and quickly divided into piles. In many cities, open market auctions are conducted by middlemen, typically some kind of commission agent. Large wholesale consumers such as hotels, food and beverage (F&B) outlets, supermarket chains, and caterers send representatives to purchase fresh produce. Middlemen are usually the strongest actors in the value chain and control the supply.

**Retail markets:** This stage may manifest itself in different ways, from push-cart vendors and tiny grocery stores to large supermarkets that stock and sell produce to retail consumers, households and individuals.

**Consumers:** Key consumers of fruits and vegetables at the end of the value chain include households, F&B outlets, and informal and formal street food vendors who prepare the raw produce.

☐ Who are the key stakeholders in each process, and what is their market power? Are they large groups with unions and legal status or individual players?

Value chains in developing countries tend to be longer, with produce exchanging hands many times. The number of actors will vary significantly based on the local regulation, labor laws, level of automation or mechanization employed in the process, market power of actors, and even political power of entrenched interests. In such long value chains, the middlemen or commission agents typically have the most market power. They control the supply of produce and often form cartels with other agents to set a price in the wholesale markets. They have direct links with farmers, and typically book the produce with a certain farmer in advance. However, especially in developing countries, this is usually conducted very informally with minimum paperwork and documentation of the purchase agreement. These agents often have

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personal relationships with the farmers, acting as their informal source of credit in times of need.

While mapping out a supply chain, the team may wish to look at three key indicators: the relative concentration of each actor, quality and diversity, contracting (direct or indirect contracts with suppliers, consumers, and producers) and long-term vertical relationships (some relationships span a significant part of the value chain). For more information on market power in agricultural value chains please refer to Swinnen J and A. Vandeplas (2010).29

Market Systems

☐ What is the prevailing type of market system?
☐ Is it free, market based, or does it have distortionary interventions such as subsidies, price floors or ceilings, minimum and maximum produce limits, quotas etc. exist?

Market systems are usually competitive, though there may be exceptions. There are usually designated areas where open market trading takes place, typically on the city or urban center outskirts. They are maintained by a government entity, or an autonomous body that may derive revenue through daily transactions. Some governments may wish to establish price floors or ceilings, offer subsidies on certain items or to certain vulnerable groups, may wish to control certain cash crops, etc. Some may even establish quotas, or restrict the sale for certain produce. This is useful to determine at the onset of the research project and establish the market structure and its degree of competitiveness.

Identifying government policies (if any), actors and stakeholders, legislative bodies, identifying payment mechanisms, commission and fee structures are all useful strategies for mapping out an agricultural value chain. Typically, this information can be obtained through key informant interviews with either policymakers or actors in the value chains. Some of this information may also be available on government websites, though this may be challenging in a developing country context. Websites tend to be outdated and it is best to corroborate any data points with other source.

Case Study 6: Mapping the Value Chain in Delhi

Our research team visited wholesale markets, or “mandis”, in Delhi, namely Azadpur Mandi – the largest fruit and vegetable market in South Asia, and Okhla Sub-Mandi, a smaller, more residential wholesale market in South Delhi. Below is a flow chart depicting the stakeholders in the Delhi fresh fruit and vegetable value chain as well as their market power. The graphic also displays the fees and commissions earned by each party.

Figure VI: Value chain mapping in Delhi

Infrastructure

- What is the state of infrastructure (roads, storage, refrigerated transport, etc.)?
- Is this infrastructure private, or publicly provided?

In addition to market power, determining the level and state of infrastructure is also critical. This ranges from storage facilities, roadways, power facilities to availability of clean water to rinse produce, sanitation, and disposal facilities. Certifications, grading, labeling of produce, and packaging are also important to note, and these aspects will be covered in the food environment section (beginning on page 30). Typically, infrastructure facilities are provided by
the public sector, however there is a trend in developing countries to move this to the purview of the private sector.

Case Study 7: Cold Storage Visit in Delhi – Lawrence Agro Cold Storage

The team traced the value chain and had the opportunity to visit a cold storage facility, in the state of Haryana, north of the capital. The district of Sonepat hosts a variety of cold storage facilities. Lawrence Agro Cold Storage housed seeds, pulses and dry grains of all kinds, both from local as well as international markets. The owner showed us many seeds and grains, including stacks of seeds from Brazil, which had been in his facility since 2013. We also witnessed a sale taking place, where the buyer representative was personally checking each sack of grain for quality and weight.

The facility was large but most processes were still fairly manual, with laborers transporting sacks on shoulders. Business was slow and less than 80% of the total storage capacity in the area was being utilized. Government subsidies exist for cold storage owners as India attempts to shore up its infrastructure facilities, but according to the owner, the state of the Indian roadways is a major hurdle in the value chain. With poor quality roads, produce rub against each other, accelerating their decomposition. As a result, a significant amount of produce is lost in transit and narrow roads substantially increase travel times. While interviewing such infrastructure players, important themes would be capacity and utilization, current state of infrastructure, major barriers, and identification of government policies supporting such initiatives.

Stakeholders and Actors

☐ What role(s) does the government play in the value chain?
☐ Are there any other major players outside the private sector?

The role of the government is critical in any value chain, especially in countries where agriculture contributes significantly to the economy. It is a useful exercise to plot out the governance stakeholder mapping for value chains. Typically, some type of produce committee or department will be in charge of setting standards, collecting data and monitoring and regulating volumes and quantities of produce. There may also be some research institutes engaging in the study of hybrid and new varieties of produce. It may be worthwhile interviewing these authorities to gather data on volumes, quantities, prices, supply and demand situations, future trends etc. It is useful to determine the amount of “policy space” a government agency has when targeting the right stakeholder for any potential policy intervention dialogue. This can be assessed through some key indicators: provision of a
regulatory framework, autonomy or authority to use that framework, allocation of budget, resources, and manpower (if any).

It may be possible (as is the case in many rapidly growing developing countries) that the private sector is taking the lead in establishing value chains. While conducting a value chain analysis and a stakeholder mapping, determining the major leaders in the private sector may be beneficial. They could be potential sponsors of certain infrastructure projects or good partners to enter an unknown region. Multinational companies with extensive resources may be ideal partners for a campaign or investment project, or may even be able to lobby for certain regulatory changes.

Case Study 8: Interview with the Agricultural Produce Marketing Committee (APMC): an autonomous body governing the wholesale markets

The Delhi research team was able to secure a meeting with the Joint Secretary, Shri Satnam Singh, at the APMC, an autonomous legislative body which oversees the wholesale markets in New Delhi. The APMC largely consists of elected and nominated officials and governs 11 of the wholesale mandis. The APMC is responsible for general upkeep and maintenance, provision of the platforms for vendors and commission agents, registration of the staff and commission agents, monitoring and recording of data (volumes and prices), and charging a 1% market commission on all produce entering the mandi. The APMC was instrumental in shedding light on the urban value chain, explaining how challenging it was to disrupt the “commission agent cartel”, which was the strongest single link in the value chain. Instituting new regulations was a highly political affair, given the importance of agriculture in the country and farmers being an important vote bank. While interviewing such government officials, macro themes should be targeted.

Key questions to ask would be around data and resources that could assist in the research, the success and failure of policies, future policies in the pipeline, other authorities they collaborate with, funding and resource challenges, dealing with different groups such as commission agents and farmers, and any other disruptive forces affecting this phase of the value chain.
Value Chain Assessment

What key factors should the team consider when conducting a value chain assessment?

A value chain assessment can include both quantitative and qualitative methods. However, when time and resource constraints are a factor, qualitative methods such as interviews and focus groups with key informants will provide valuable insights (see Krueger and Casey, 2000 and Patton, 2014 in the annotated bibliography, Annex I).

For research tools specific to urban produce value chains, see the sample observation and interview guides in Annex II.

Below is an illustrative list of specific factors to note:

Physical attributes:
- Physical condition of market structure(s)
- Marketplace infrastructure
- Sanitation and hygiene facilities (e.g. availability of washing stations)
- Visible signage in local languages
- Waste and disposal facilities and procedures
- Storage and display facilities and procedures
- General law enforcement situation
- Availability/variety/quality of produce

Cultural attributes:
- How negotiations take place between various stakeholders
- Diversity of actors present (gender, languages spoken, etc.)
- Differing roles of different actors (e.g. labor division along gender or ethnic/religious lines)
- Manner of interaction with authorities (if any)
- Adherence to established rules

Socio-economic attributes:
- Socio-economic status of actors,
- Differing roles of different groups (e.g. class-based discrimination)
- Presence of minority religious or social groups
- Presence of any informal or unregulated groups (e.g. middlemen)
- Presence of authorities
UNDERSTANDING THE FOOD ENVIRONMENT

Street vendors, modern supermarkets, coffee shops, billboard advertisements and ingredient labels are a few examples of the elements that influence and facilitate our purchase of foods. These elements interact to create a complex web – the food environment.

Our food environments are influenced by various cultural, social, physical, and economic factors that determine the availability, affordability, desirability, and convenience of food products. Additional factors such as the types of information consumers have about food also work to shape our food choices.
The Food Environment

The Food Environments Working Group distinguishes between two different food environments that interact at all times: the external food environment and the personal food environment. 30

The external food environment is made up of “exogenous environmental factors” such as food prices, convenience of food outlets, availability, and the socio-cultural desirability of food. 31 The personal food environment is made up of our individual food preferences, as well as our unique capacities to obtain and afford food items. These factors converge to guide our daily food choices.

Evaluating food environments is a relatively new field of study. For reference, Figure VII lists examples of existing food environment measurement tools with potential relevance to nutrition monitoring. However, these measurement tools are generally time and resource intensive.

A rapid urban appraisal of the food environment will focus on five elements:

- Availability of the desired foods for the target income group
- Affordability of the desired foods for the target income group
- Influence of marketing and promotion activities
- Food information and labeling
- Food safety and nutritional value of foods offered in schools or through street vendors

By looking at these five elements, we seek to understand what people are eating, and how their food choices are being shaped, helping us to identify specific points of intervention.

Examples of food environment interventions include food labeling requirements, school meals programs, taxes on certain foods, subsidies to promote the consumption of nutritious foods and zoning requirements for street vending (see Figure II in the Governance section above for further detail about policy levers).

31 Ibid.
### Figure VII: Food Environment Measurement Tools with Nutrition Relevance

<table>
<thead>
<tr>
<th>Tool</th>
<th>Purpose</th>
<th>Method</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFORMAS Food Price Module</td>
<td>To assess prices of food of differing nutritional value</td>
<td>Monitoring of Food Prices</td>
<td>Lee et al 2013</td>
</tr>
<tr>
<td>Nutrition Environment Measures Survey for Stores (NEMS-S)</td>
<td>To assess the availability, affordability, and desirability of healthy foods in a store in a specific geographic area</td>
<td>Checklist and Inventory Tool</td>
<td>Glanz el al 2007</td>
</tr>
<tr>
<td>Composite Healthfulness Scores of Food Retail Stores</td>
<td>To evaluate variety, price, quality, promotions, shelf and store placement, nutrition information and healthier alternatives of foods in a store in a specific geographic area</td>
<td>Checklist tool and observational analysis</td>
<td>Black et al 2014</td>
</tr>
<tr>
<td>Healthy Eating Index (HEI)</td>
<td>To understand the conformance of available food to federal dietary guidelines in the USA</td>
<td>Scoring tool using a market basket approach of ten equally-weighted dietary components</td>
<td>Kennedy et al 1995</td>
</tr>
<tr>
<td>Healthy Eating Indicators Shopping Basket (HEISB)</td>
<td>To evaluate accessibility of healthy food in conformance with standards of the UK Food Standards Agency coupled with culturally acceptable foods</td>
<td>Checklist tool</td>
<td>Anderson et al 2007</td>
</tr>
<tr>
<td>Cost of Diet (CoD) Tool</td>
<td>To determine the cost of the least expensive diet that meets the nutritional requirements of families using locally available foods</td>
<td>Uses the Household Economy Approach with a list of locally available food stuffs and prices, FAO data, and WHO recommendations</td>
<td>Chastre et al 2009</td>
</tr>
<tr>
<td>WFP VAM Food Price Monitoring</td>
<td>To monitor prices of staple crops</td>
<td>Index-based</td>
<td>WFP 2014</td>
</tr>
<tr>
<td>Optifood Tool</td>
<td>To identify which foods can meet nutrient requirements at lowest cost towards developing nutrition education/behavior change strategies</td>
<td>Linear Modeling Program</td>
<td></td>
</tr>
</tbody>
</table>

Food Availability

Food availability addresses the “supply side” of food security by considering the physical presence of food of acceptable quality within a defined region.

- What types of food retail outlets exist in the defined area? Are there alternative food sources such as public distribution programs?
- Are nutritious fruits and vegetables physically available at these locations?
- Which other foods are available in the market? Do they tend to be high in fats, salt, grains, protein?
- Does food availability vary during different times of the year?
- Are food outlets accessible to low income populations (by walking, bus, or other common forms of transportation)?
- What is the quality of the food available?
- What other issues may be affecting food availability? (for example, informal workers often lack access to public distribution systems)

Food availability looks at physical access to nutritious fruits and vegetables and asks, regardless of price, are the items available for purchase? If not, why? Answers to this question may lead us to look at other parts of the food system and as well as potential policy interventions.

Food availability can be affected by many factors. Has there been a poor harvest? Are roads and other pieces of key infrastructure lacking in this area? Is it an off-season for the target foods? Is there a lack of cold storage to extend the market period of the fruits and vegetables?

It is helpful to use a market assessment framework (such as the example in Annex II) to track and understand the types of foods available at different food retail outlets, as well as their quantity and quality. A market assessment can be extended to include additional factors that may limit the physical availability of foods such as accessibility by public transportation within a reasonable amount of time, reliance on cash money notes, or digital currencies for purchasing.

It can also be revealing to map the locations of food outlets. Are they clustered together or spread across great distances? Which types of food outlets tend to be the most prevalent in poor urban areas? In middle-income areas? High-income areas?
Case Study 9: Delhi Food Availability

Due to Delhi’s status as India’s capital and the high purchasing power of its residents, our team found that the physical availability of nutritious fruits and vegetables was not an issue.

By tracing the “supply chain” of fruits and vegetables from the wholesale market (Azadpur Mandi) through to the neighborhood vegetable vendors, we found that Delhi has a well-oiled machine of small-scale vendors and pushcarts that deliver fruits and vegetables to almost every neighborhood. Our team visited three neighborhoods at different times of day to evaluate the availability of food. While we were not able to visit enough locations to obtain a representative sample, we confirmed our findings during expert interviews and with secondary data.

While our target population typically relies on street vendors and traditional markets, our team also visited more formal fruit and vegetable retail establishments to understand food availability more fully. In India, Safal is a privately owned chain of stores that focuses on fruits and vegetables. These stores carry a great variety of high quality product, however, they tend to be found in middle class neighborhoods, not in our target population.

In addition to market-based food availability, Delhi’s urban poor have access to India’s Public Distribution System for free and subsidized grains.

Food Affordability

Food affordability is defined broadly as the cost of the diet of a household relative to that household’s income.

- What are the prices of fruits and vegetables at different retail outlets?
- How much would the recommended amount of nutritious foods amount to as a percentage of household budget?
- Do prices vary throughout the year? To what degree?
- What are the prices of popular alternative foods (e.g. a bag of chips?)
- What is the retail mark-up on fresh fruits and vegetables?

Once availability is established, affordability is the next major determinant of food choices. For the urban poor, the most easily available and affordable diets tend to be the less healthy options.32

To understand food price and affordability, it is useful to begin with primary or secondary sources, which establish the average income levels of the target populations, average expenditure on food, and average expenditure on fresh fruits and vegetables. While obtaining this information is often not possible, resources such as the Consumer Price Index are a useful starting point. Local data sources, such as the India Human Development Survey (IHDS), can also be informative.

The next step is to understand how much money would be required to obtain an adequate amount of fresh fruits and vegetables. Adequate amounts can be established through WHO and the FAO guidelines, while actual prices are best observed in the markets themselves. Increasingly, actual prices are being published online by regulatory authorities. During the process of collecting information on prices, be cognizant of differential pricing (vendors may quote higher prices for foreigners) as well as seasonal variability in pricing. This seasonable variability may point to similar infrastructure interventions as seasonal scarcity.

In addition to the absolute prices of fresh fruits and vegetables, it is important to get a sense of the relative price of these food items compared to food alternatives, and other items in the household budget that may hold a higher priority for poor urban households. This may be an indication that subsidies or incentives to purchase nutritious foods may be a useful intervention.

Finally, obtaining a sense of the retail mark-up for fresh fruits and vegetables can help determine if there are market failures or a situation of constrained competition that may be inflating the prices of fruits and vegetables at the retail level.

**Case Study 10: Delhi Food Affordability**

In Delhi, a review of prices at a dozen different retail locations led us to conclude that, in general, vegetables are more affordable and have greater price stability than fruits during the year.

While the prices of five common fruits and vegetables (onions, tomatoes, potatoes, bananas, apples) were not high in absolute terms during the winter season, our team found that they were considerably more expensive than alternative, higher calorie foods (chips and crisps). We also found that an adequate diet of fruit and vegetables would comprise a significant amount of our target population’s income - money that was also needed for clean water, healthcare, and education.

Finally, we found considerable retail mark ups for fruits and vegetables, averaging 60% of the wholesale price. This led us to believe that there are opportunities in the existing wholesale-retail link for greater competition to reduce this markup.
**Food Promotion**

Food promotion is the action taken by food manufacturers to convey a food product’s features to consumers, influencing them to buy the product.

- What kinds of advertising exist for nutritious and unhealthy foods? (TV, radio, billboards, etc.)
- Is advertising targeted towards a particular demographic? (E.g. children)
- What patterns exist in food promotion? (E.g. are crisps positioned outside schools or at roadway stops?)
- What is the prevalence of brand labeled foods?

A third pillar of food choices is the “desirability” of different foods. Desirability goes beyond an analysis of the quality of a food item to include a complex set of social and cultural factors. Obtaining an understanding of how these factors influence consumers to purchase certain foods over others can help identify appropriate interventions. Promotion activities influence consumers’ desire to purchase certain types of foods and companies invest substantial amounts to make their products widely available (and therefore “convenient”), targeting schools and other locations where groups gather.  

TV commercials and advertisements for certain types of foods targeting children are common and effective. A few countries, including Mexico, Korea, and Taiwan have implemented regulations that restrict marketing “unhealthy” foods to children.

Along with the promotion of unhealthy foods, in many countries the promotion of powdered milks and other breastmilk alternatives is common, despite the global recommendation that mothers breastfeed their children for the first six months of life. There is also varying compliance with the WHO International Code of Marketing of Breast-milk Substitutes, which recommends that substitutes carry a disclaimer alerting consumers of the superiority of breastfeeding.

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**Case Study 11: Delhi Food Promotion**

In Delhi our team found that food promotion to all segments of society was prevalent. The names of popular snack and drink brands covered many bus stops, shops, and roadside vendors. Unhealthy foods were much more widely available and conveniently located than fresh produce, and these products were easy to buy from small stores and from individual vendors selling on nearly every street.

Food promotion is not inherently harmful, and can also be used to promote the consumption of healthy foods. In India, an early 1990s song and ad campaign to promote egg consumption was successful in making consumers aware of the health benefits of eggs as a source of protein for children. During our study, several health experts expressed their belief that additional promotion activities and ad campaigns for green leafy vegetables would be beneficial.

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**Information and Labeling**

Food labels contain a variety of information related to the nutritional value of the foods, the ingredients used to produce it, appropriate use of the product, and benefits of the product.

- **Is there a prevalence of unlabeled packaged foods?**
- **What are the national food labeling requirements? Does the food labeling observed meet those standards?**
- **Are ingredients clearly listed?**
- **Are fortified ingredients clearly labeled?**
- **Are there labels that seem unclear or misleading?**

Food labels can provide consumers with the key pieces of information they need to make the best decision. A label “means any tag, brand, pictorial, or other descriptive matter, written, printed, stenciled, embossed or impressed on or attached to a container of food.”\(^{36}\) The Second International Conference on Nutrition Framework for Action highlighted food labeling as an action area key to empowering consumers to choose nutritious food products.\(^ {37}\) In addition, food labels can serve as nudges to manufacturers and retailers to provide healthier food options.

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Food promotion is closely related to food labeling and may influence how consumers read and interpret food labels by either supporting or deterring from the labeling message. While food labels are not usually placed on fresh fruits and vegetables, they are placed on packaged fruits and vegetables, mixed food items, and on the processed food items competing for the consumers’ food dollar. Food labels should be accurate, appear in a standard format, be easy for consumers to understand, be sensitive to illiterate or semi-literate populations, and, ideally, provide information on the “desired” and “undesired” nutrients such as Vitamin A and trans-fats.

In the food environment assessment, notice the kinds of labels on foods regularly purchased by the target group. Is there a brand or manufacturer’s name on the label? Is information provided regarding ingredients used? Is there a certification from the national food safety commission? Food labels and certifications are related to food safety. While developed economies do not associate food-borne illnesses with processed foods, in emerging economies, many processed foods may pose a food safety risk due to a lack of food safety governance.

**Case Study 12: Delhi Food Labelling**

In Delhi, manufactured and branded foods tend to have the most complete food labels, with information regarding ingredients and a certification seal by the national Food Safety and Standards Authority of India (FSSAI). Many consumers prefer these foods as they are perceived to be safer than fresh fruits and vegetables.

However, as a percentage of the total, very few foods meet the labeling requirements set out by the Government of India and the FSSAI. One of the first things our team noticed in India is the prevalence of unlabeled, packaged foods. These foods are often produced in the home, or in small shops, and sold both directly to consumers and to street food vendors to be fried and eaten. We later learned that many of these “fry’ems” are made of powdered potatoes slices, often using low quality and unhygienic raw materials.

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38 Ibid.

Meals Outside the Home: Street Food Vendors and Schools

The number of meals eaten outside the home is growing in all regions of the world. Two areas where the urban poor frequently consume meals are schools and street vendors.

- What is the food environment like in schools?
- What are the choices given to children every day?
- Does the government provide the meal? Do they set guidelines for nutritional content?
- What is the food environment like on the street?
- What offerings do food vendors have? What do most people seem to be purchasing?

As noted by the 2017 IFPRI Global Food Report, “food eaten away from home such as that purchased by street vendors, modern fast food chains and restaurants...often high in fat, salt and sugar... is also an increasingly important food source in urban diets.”

Eating at street food vendors for quick easy meals is becoming increasingly common where individuals are “time poor,” may not have formal cooking equipment, or may not have access to clean water. IFPRI also noted that an estimated 20-25% of household food expenditure in low or middle-income countries is on food prepared outside the home.

One of the greatest risks with street side food consumption is food safety. In many developing countries there is great public concern over food safety but very little capacity to regulate or impose penalties on those who sell unsafe foods. Many of these markets are composed of informal channels, with millions of untrained and unmonitored participants. In these cases, the FAO recommends encouraging the uptake of appropriate technology and a movement to “professionalize, not penalize” through trainings and certifications.

In addition, school feeding programs are an excellent opportunity to provide children with nutritious meals and build healthy eating habits. Schools also provide an opportunity for marketers of unhealthy foods to reach many children in one area. As a result, some governments choose to regulate the foods available in schools through mandatory or voluntary guidelines, while others engage in direct meal provision. Less commonly, some governments choose to restrict the other foods that are available for purchase on school grounds.

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41 FAO, Influencing Food Environments for Healthy Diets, 2016.
Case Study 13: Delhi Street Food Vendors

In Delhi, a significant portion of mid-day meals for children and working adults are taken outside the home. This highlights the importance of the nutrition, safety and accessibility of the food provided by school systems and by street food vendors.

NASVI, the National Association of Street Food Vendor of India, is a grassroots advocacy organization working with the Government of India to train and professionalize street food vendors in improved hygiene and safety practices. In return for engaging in these improved practices, the vendors are encouraged to charge a premium for their foods, as consumers would prefer to know their food is sanitary.

As of January 2017, this training has reached over 22,000 hot food vendors. While significant, it is still tens of thousands of vendors shy of all the hot food vendors in Delhi and does not yet include fruits and vegetable vendors.

Advocates for better nutrition and sanitation from street food have supported greater training and education for vendors (and the family members who often help prep the food early in the morning), innovative solutions to help vendors source quality ingredients, and a reduction in the burden of regulations from registering with both the Delhi Municipal corporations and the Delhi State Government.
Any attempt to understand or influence the nutrition sphere must be rooted in an understanding of the consumer. Each tailored government policy, complex vegetable value chain, street vendor, or local market influences the knowledge, attitudes, and behaviors of urban consumers regarding the consumption of fresh fruits and vegetables.
Understanding the Consumer

- **Which consumers does the research seek to understand?**

Because of the breadth of the consumer base in an urban setting, definition of a clear target group of consumers for the study is crucial. A target group is often income based, wherein an income range is defined before beginning the research, and all interview questions are asked after specifying the income range of the consumers in questions. Alternatively, research can also focus on particular marginalized groups (ethnic, religious, or social) or consumers with specific characteristics (e.g. pregnant women).

Behavior

- **What are consumers eating?**

Investigation of the challenges of urban nutrition in any new context must start with a clear understanding of what consumers in the target group are actually eating. When possible, this should be determined using a Food Frequency Questionnaire (FFQ) including information on frequency and portion sizes consumed of different food items.\(^42\) Depending on available resources and timeline, a quantitative or semi-quantitative survey will often be impractical, but speaking with consumers regarding their typical consumption is key and cannot be substituted by expert interviews. Keep in mind that for research that may be published, IRB approval is required to ask consumers about personal consumption.

- **What affects the nutrition decisions of consumers?**

After gaining a basic understanding of consumption patterns of fruits and vegetables as well as other food groups, researchers should seek to understand why consumers make the choices they do regarding consumption. Factors including time, cost, and cultural values all play a role in decisions surrounding what to eat.

- **Do target consumers have enough resources to purchase and consume sufficient calories?**
- **If so, do people choose to eat sufficient fresh fruits and vegetables? What other budgetary demands may take precedence over healthier food choices?**

---

Before considering whether consumers can purchase healthy fresh fruits and vegetables, determine whether the target population can purchase enough calories to fulfill basic energy needs. If consumers are facing a hunger problem, they will necessarily purchase calorie-dense, inexpensive staples such as grains or rice. In addition, many consumers cannot afford to purchase fresh fruits and vegetables for regular consumption in addition to or instead of more affordable staple foods. If available, looking at household survey data to learn about the consumption and characteristics of the target group can provide valuable information, especially when supplemented by price data for FFV, other food staples.

☑️ If consumers do have enough income to potentially purchase fresh fruits and vegetables, are they doing so?

Understanding what consumers may spend money on instead of FFV is a key insight. Expenditures on clean water, fuel, or education often take precedence when a family already has enough food so that they no longer feel hungry. Asking consumers basic questions about why they do or do not consume FFV, in addition to consulting experts, will provide insight into the choices consumers make.

☑️ How do consumers prepare their food? Is the environment in which food is prepared safe and sanitary?

Nutritional content of a meal can be changed drastically depending on mode of preparation. Researchers should consider how food is cooked as well as the presence of poor sanitation practices that can lead to diarrhea or other illness. The environment in which food is prepared is another key factor to consider. Lack of clean water or adequate sanitation facilities can lead to unhygienic foods even when proper preparation techniques are used.

If possible, observations of the cooking and sanitation practices used in the home should be collected. Alternatively, anecdotal evidence of these practices is widespread but should be confirmed with experts from various disciplines as well as consumers.

☑️ Are there constraints on the amount of time family members spend cooking? Do consumers mostly eat inside or outside of the home?

Particularly in urban areas, a proliferation of unhealthy options including snacks, “fast food”, prepared street foods, and pre-packaged “instant” meals are now accessible to most consumers. These foods are often attractive to families in urban settings who have competing...
demands on their time. Furthermore, in urban areas, consumers often work further from the home and therefore may be more likely to eat food outside the home.

- What cultural factors may play a role in increasing or decreasing consumption of FFV?

Food is one of the most fundamental aspects of culture, and food habits can be difficult to change. Traditional food habits can be beneficial or harmful to nutrition. Using the literature review to understand the traditional diet of the target population will allow researchers to take the culture of food into account. Researchers should be aware of factors such as how long traditional food takes to cook, cooking methods, the types of ingredients used in traditional foods, and religious and/or cultural significance of food products.

Recent trends in consumption patterns towards or away from traditional culinary culture should also be identified. In urban areas, a trend away from more traditional diets and towards more processed, unhealthy foods is common across contexts.

Awareness

- What do consumers know regarding fresh fruits and vegetables? What do consumers know about the poor nutrition value of most “fast” foods?

Consumers who are not aware of the nutritional value of FFV or the harmful effects of many processed foods will not be able to make informed decisions regarding their consumption. Researchers should determine what consumers know about nutrition, which will then help them determine whether unhealthy consumptions decisions are based on lack of awareness or based on a gap between awareness and behavior change.

Case Study 14: The Gap between Awareness and Behavior

During interviews with experts in Delhi, one of the most commonly expressed opinions was that awareness regarding the importance of eating fresh fruits and vegetables was extremely low. Nutritionists, government officials, NGO workers, and professors all confirmed that lack of knowledge on general nutrition was pervasive. However, informal interviews with security guards, street vendors, and drivers exposed a different reality. While low-income consumers may not be aware of specific aspects of nutrition (for example, the special importance of green leafy vegetables and the micronutrients they contain), most understand that fruits and vegetables were healthy and should be part of daily consumption. Nevertheless, consumers often choose staples or fast, unhealthy foods because they are cheaper, easier, or tastier.
Therefore, it is critical that policymakers and practitioners be careful to understand the difference between areas where Delhi consumers lack awareness (e.g. causes of iron deficiency anemia) versus areas where awareness is relatively high but consumers still choose to consume relatively unhealthier food (e.g. purchasing hot food from street vendors). This gap between awareness change and behavior change presents a challenge for policymakers and suggests that public campaigns need to move beyond awareness to address more deeply-rooted and nuanced problem of behavior change.

- What specific areas of awareness are lacking?
- Where can increased awareness potentially have the largest impact?

Nutrition awareness is a broad category. Narrowing down specific areas of awareness can help researchers better understand specific nutritional gaps. When determining where awareness is low, researchers should keep in mind possible areas for intervention. More specific types of nutritional awareness that researchers should investigate include:

- Micronutrient Deficiencies
- Infant and child feeding practices
- Poor health value of many processed foods/ snacks
- Benefits of FFV
- Consequences of malnutrition

- What (if any) initiatives have been undertaken to increase consumer awareness about the consumption of FFV, or regarding healthy/unhealthy foods in general? Why did these initiatives succeed/fail?

Initiatives such as public information campaigns can effectively increase consumer awareness and may lead to positive behavior change. Learning from the successes or failures of previous initiatives can inform any recommendations regarding this type of initiative. This should be informed by interviews with government and NGOs or other organizations that may have implemented these programs.

For example, the relative success of the India egg promotion campaign referenced in case study 11 indicates that future behavioral change campaigns to promote FFV consumption might be effective.
Case Study 15: Breastfeeding and Complementary Foods in the Indian context

In Delhi, awareness of healthy infant and child feeding practices is low. Not only are the rates of breastfeeding relatively low, when complementary foods are introduced, mothers often provide infants with a watery lentil mixture lacking in nutritional value. According to the latest NFHS survey, only 5.8% of Delhi children age 6-23 months receive an adequate diet and only 49.8% of children under 6 months are exclusively breastfed. In urban contexts such as Delhi, many parents are rural-urban migrants who lack the social networks that ensure the intergenerational transmission of knowledge of proper infant feeding practices. Because this topic is relatively specific, knowledge is extremely low, and small behavior changes can potentially have large effects on child malnutrition, this is a promising opportunity for intervention in the Delhi context.

Vulnerable Groups

□ What special challenges do different groups face?

When exploring the problems surrounding urban nutrition and FFV, researchers should look for groups who are particularly vulnerable to malnutrition. Any programs, whether already in place or being proposed, should take into account the special needs and characteristics of these groups.

Vulnerable groups frequently include:

- Women
- Ethnic minority groups
- Religious minority groups
- Children
- Migrants

Notably, in urban areas substantial diversity of ethnicity, wealth, social status, religion, and region or country of origin, can exist in a small geographic area. Because of the draw of urban areas, densely-packed, low income neighborhoods often emerge quickly. Migrants in such areas are less likely to have access to government services and lack the stability and protection provided by the social networks of rural village dwellers. As the pace of urbanization around the world increases, the unique nutritional needs and constraints faced by these migrants are increasing in importance.
Stage 3 – After the Field Visit

Following the field visit, researchers will need to validate, organize, sort and analyze their research to identify and synthesize key findings and lessons from the rapid urban appraisal. These findings and lessons can then be presented to key decision makers to determine if proposed intervention areas align with the organizations’ mission and vision, which intervention areas to focus on, and which stakeholders would need to be involved for any further action.

First Pass “In Country” Organizing and Coding Themes

Organizing and coding the data begins with creating an inventory of what information has been collected. The team should be sure to check if field notes are complete and there are no glaring holes in the research. The next step is to comb through the data for emerging patterns and potential areas of exploration. These will come from interviews, previous work on the subject, as well as observations. “Code” these patterns and findings into “themes” that can be shared with other stakeholders.

For more information on how to organize and code themes, please see Chapter 8 of Patton’s “Qualitative Research and Evaluation Methods,” cited in Annex I.

Validate In the Field

Immediately following the research period, a presentation or brief write-up of initial themes and findings (collected from stages 1 and 2) should be presented to appropriate experts and key stakeholders. This step is particularly important for a rapid appraisal because of the short amount of time and resources available for data collection and analysis in the field.

When possible, this presentation should occur before leaving the city where the appraisal took place. This serves two useful functions: it ensures that the city and community in which the research took place will be aware of the purpose and general conclusions of the research, and it serves as an excellent opportunity to validate findings with stakeholders immersed in the local context. This presentation can take multiple forms, including:

- Focus group style discussion(s) with experts and stakeholders (academics, civil society, private sector, local representatives)
- Community meeting where findings are presented to consumers with a “question and answer” session on issues surrounding urban nutrition
• Presentation and discussion with the local office of the research team’s associated organization or with a local NGO or community group involved in relevant nutrition issues

While not all of the data may be organized, analyzed and coded at this time, this is a unique opportunity for feedback and discussion that would be difficult to replicate later in the process. It is also a key opportunity to understand which areas are of greater or lesser interest to key stakeholders.

**Complete the Organization, Sorting and Analysis**
Data should be fully organized and coded within the first few days and weeks after returning. It is likely that additional data sets were gathered or referenced during the field visit. This is the time to find, review, and incorporate them into the findings.

The final goals of the research should be considered prior to and throughout this process to ensure that findings are relevant and within the parameters of the assignment. In addition to Patton, more information about coding and analysis of data can been found in Taylor and Gibbs (2010), cited in Annex I.

**Final Presentation and Validation**
After completing the full analysis and considering all additional data sets, a second iteration of themes and findings should be presented to key experts. Ideally, a summary of findings (in person or a written brief) would be circulated for comments to a variety of stakeholders.

If multiple experts and key stakeholders disagree with a key finding or believe that different themes should be emphasized, consider re-reading interview transcripts and observation notes to check if the suggestions can be reconciled with what has been learned. It may also be possible to stay in touch with contacts from the field visit and ask them for a second opinion given the feedback that was received.

**Next Steps**
Identifying areas of intervention is only the first step to affecting positive changes in urban nutrition. The next steps would be to convene key actors interested in exploring and delivering interventions. This is an opportunity to present findings, answer questions and discover where interests lie and where the political will for change might be. It is also an opportunity to begin the process of understanding the potential roles different stakeholders may have in the process.
Once key actors identify a more narrow set of intervention areas, different specific intervention activities can be explored within those areas. It is useful here to look at the work being done in other urban areas around the world for models and lessons learned.

Subsequently, a feasibility study and cost/benefit analysis should be undertaken for each intervention under consideration. These steps will follow the decision making process of the funding organization.

In this way, the rapid urban appraisal serves as a springboard to quickly identify the most promising intervention areas and activities. This supports decision makers and quickly focuses resources on the most favorable and feasible channels to impact urban nutrition.

**Conclusion**

The rapid rate of urbanization throughout the world and the unique nutrition challenges that result demand that practitioners respond with thoughtful, methodical, and nuanced policies and programs adapted to every context. In order to respond to this growing need, we have developed an SOP for conducting rapid appraisals of urban nutrition. This flexible research tool is intended to support practitioners in the formative, problem definition phase of program design and can be used to identify intervention points, map out potential partners, and pinpoint challenges for further inquiry and deliberation.

Qualitative research methods aimed at generating valid and reliable findings offer a tremendous opportunity to gain rich contextual knowledge about an urban area. This SOP highlights fieldwork as the most important stage of research, in order to ground the study in realities on the ground. However, it is important to acknowledge that qualitative field research faces numerous limitations. Researchers should not expect to find a “silver bullet” to solve urban nutrition in a given city – nor should they aim to. Rather, this SOP should humbly guide them to critical junctures and issues to be pressed further in subsequent stages of program design.

In order to better conceptualize the expansive space of urban nutrition, we disaggregate the space into four main thematic areas: Governance, Value Chains, Food Environment, and Consumers. The high-level questions included in the corresponding section provide further guidance as to what researchers should be looking out for in their fieldwork. Rather than providing prescriptive best practices, we urge researchers and policymakers to take this flexible methodology and adapt it to every context, where certain issues will prove to be more salient than others.
While this SOP is targeted at appraisals of nutrition in urban settings in developing countries, it is relevant to a diverse array of geographic and socio-economic contexts. Lines of inquiry and specific stakeholders to target will differ, but the overarching themes of this report and the approach therein can also be adapted to rural areas or to higher income countries. Indeed, food systems are highly complex, and the challenges found in one city are almost certain to cross domestic as well as international borders. Developing a deep understanding of one context, however, is an excellent place to begin.

Works Cited


Annex I: Annotated Bibliography – Methods and Tools

For further reading on Methods for Nutrition Governance and Policy Analysis


This review introduces the Government Healthy Food Environment Policy Index (Food-EPI), a new instrument to monitor and benchmark public policies to make food environments healthier. This instrument disaggregates the two key components of policy and infrastructure support into several categories to be monitored.


Part III of this report introduces a “Rapid Political Economy Assessment Tool for Measuring Commitment and Opportunity to Advance Food and Nutrition Security Policies.” This tool combines stakeholder analysis and measures of political commitment to analyze potential for food and nutrition policy reform. A proposed questionnaire is included in Appendix 2 of the report.


This paper introduces a framework with which researchers and policymakers can analyze the drivers of change in nutrition and agriculture policy. The framework is mostly processed-based, breaking down the policy cycle into five stages. Known as the kaleidoscope model, it incorporates political economy and power dynamics in order to explain the success of public policies.


This tool is designed for public health professionals seeking to synthesize and analyze information about the effectiveness at health-related public policies. The goal of the tool is to identify policies that are most likely to succeed in a given context.
For further reading on Food Environments:


A review of methods to influence the food environment through the production of diversified foods (Chapter 1), food safety (Chapter 2), food labeling (Chapter 3), and food-based dietary guidelines (Chapter 4).


A description of the design and methods for a comprehensive national survey on the healthiness of food environments and the public and private sector policies influencing them. The study looks at 1) food composition, labeling and promotion on food packages, 2) food prices, shelf-space and placement of foods in different outlets, 3) food provision in schools/early childhood education services, 4) density and proximity of food outlets in communities, 5) food promotion to children via television, 6) promotion via magazines, 7) promotions through sport club sponsorships, 8) internet and social media, 9) analysis of the impact of trade and investment agreements on food environments, 10) government policies and actions, and 11) private sector actions and practices.


This research article reviews existing measures of the food environment, and then draws from these tools to suggest ways the food environment could be measured in future studies and monitoring.


This paper reviews past and present approaches to monitoring food prices, and identifies key issues affecting the development of practical tools and methods for food price data collection, analysis and reporting.


The NEMS-S is a widely-used checklist and inventory tool that assesses the built food environment of food stores.

Builds on the parameters of the NEMS-S to assess the availability of nutritious and not nutritious foods. Specifically, the healthfulness scores incorporate measures of variety, price quality promotions, shelf placements, store placement, nutrition information, and healthier alternatives.


Originally developed by the USDA, the Healthy Eating Index can be broadened to examine the quality of foods available in a given food supply.


The HEISB is a tool to evaluate the accessibility of healthy food according to the standards of the UK Food Standards Agency with a consideration for culturally appropriate foods.


This method uses data from the Household Economy Approach assessments, coupled with a list of locally available foods and prices per season, data on food composition from the FAO, and individual nutrient requirements from the WHO.


This review examines measures of dietary intake utilized in food environment research to understand why existing evidence on food environments and diets is inconsistent.

For further reading on Value Chains and Stakeholder Mapping


This article informs the reader about the retail part of the value chain, supermarkets, and grocery stores as well as their development and their market power.


These two journal articles explain how to measure market power in value chains, and explore how rents are determined and passed along to various actors along the chain.


Chapter 3 in this report analyzes the different kinds of value chains observed in global agricultural markets. The paper’s main focus is agricultural value chain financing, describing the sources of funding, microfinancing, and microcredit systems that are usually present in value chains.


This report is a guide for conducting value chain analysis and identifying points of intervention. Analyzing the impacts of policy options provides decision makers and other stakeholders with anticipated evidence on likely changes directly induced by policies. It is a practical and technical guide, potentially requiring specialized knowledge of agricultural processes.


This is a simpler guide to mapping value chains that would be useful if the researchers need to perform a rapid assessment of value chains in the target city. It also provides guidance on the type of methods to be employed while conducting field work.

For further reading on Consumer Awareness and Behavior:


This source from the US National Institutes of Health (NIH) National Cancer Institute clearly explains the use of a Food Frequency Questionnaire (FFQ) as a tool in health and nutrition research. It includes a clear discussion of the benefits and limitations, including threats to validity. The source also provides links to different commonly used FFQs and scholarly research surrounding the use and improvement of the tool.

This manual produced by the FAO offers concrete tools and methods for researchers investigating consumer awareness and behavior regarding specific nutrition issues, including specific micronutrient deficiencies and complementary feeding.

For further reading on general research methods:


This book gives a comprehensive overview of the focus group method, including developing questions, choosing participants, training moderators, and analyzing results. Krueger and Casey have also included sections on different formats and considerations for conducting focus groups in a variety of settings.


This brief article, although somewhat dated, provides a valuable introduction to the concept of “Rapid Appraisal.” Beebe includes detailed direction on how to implement three basic concepts of rapid appraisal: “a systems perspective, triangulation, and iterative data collection and analysis.” It also details common research methods used in Rapid Appraisal, primarily semi-structured interviews.


Patton’s volume is an excellent source for all general qualitative methods, and should be consulted before undertaking any primarily qualitative study. It clearly discusses all relevant tools that could be used in a “Rapid Urban Appraisal,” including interviews, focus groups, and observation.


This clearly written source provides a basic introduction to the coding of qualitative data, with illustrative examples and links to further resources. The accompanying website, Qualitative Data Analysis, includes further examples and practical tools.

This source provides “simple yet effective instruction on how to do systematic and ethically sound qualitative research,” and includes a practical guide that can be used as a tool while in the field. The source includes modules on participant observation, in-depth interviews, focus groups, and data documentation and management.
Hello, thank you again for agreeing to speak with us. (Introduce interviewers). We are working as consultants for the Global Alliance for Improved Nutrition (GAIN) and by speaking to you we hope to better understand the most important challenges and constraints to ensuring Delhi residents have access to healthy and nutritious foods, particularly fresh fruits and vegetables. We also hope to clarify the role the municipal government and other actors play in providing the people of Delhi with access to nutritious foods.

With your permission, I will audiotape and take notes during the interview. The recording is to accurately record the information you provide, and will be used for transcription purposes only. If you choose not to be audiotaped, I will take notes instead.

*Interviewee (does / does not) agree to be audiotaped.*

If you agree to being audiotaped but feel uncomfortable at any time during the interview, I can turn off the recorder at your request. Or if you don't wish to continue, you can stop the interview at any time.

Your study data will be handled as confidentially as possible. If results of this study are published or presented, individual names and other personally identifiable information will not be used unless you give explicit permission for this.

1. First, we want to learn a little about your work in nutrition. What about (your organization) in particular? How does (your organization) engage with issues of nutrition around Delhi?
   a. *Ask them to give a brief summary of their nutrition-related programming.*
2. We’re interested in understanding the challenges faced by low-income consumers, and particularly how they access to nutritious food in Delhi. To what extent is this a focus in the overall NGO community?

3. What do you see as the three biggest barriers to low-income consumers buying and eating more healthy foods?

4. We know work relating to nutrition is happening in a lot of different ways. Could you tell us which nutrition policy intervention areas you consider to be the most important? (Probing if no quick responses/ideas)
   a. Maternal, Infant and Young Child Nutrition
   b. School-based programs
   c. Vitamins and minerals
   d. Obesity and diet related chronic disease prevention
   e. Food security and agriculture

5. Let’s move on to talking about the role of the Delhi (municipal) government in relation to nutrition, specifically for poor residents of Delhi. How large of a role does the (municipal) government play in promoting access to healthy foods?

6. What, in your opinion, are the top three strengths of the (municipal) government’s work on promoting access to nutrition in the past 3 years?
   a. Follow up by asking about the weaknesses.

7. We’re interested in learning about how government stakeholders in nutrition work with stakeholders outside the (state/ municipal) government. Does the government work with NGOs on any nutrition initiatives? If so, how? If not, do you see any potential for collaboration between NGOs and (state/municipal) government?

8. Our client, the Global Alliance for Improved Nutrition (GAIN) has worked around the world on systems change to improve nutrition. What would be your recommendations to our client, GAIN on the top three opportunities for successful intervention to improve access to healthy foods in Delhi?

9. GAIN specializes in bringing together different stakeholders and building alliances to work on issues surrounding nutrition. We’ll be presenting the findings of our study to GAIN in a final report in a few months. What would be your recommendations to our client, GAIN, on the most important thing to keep in mind when working with stakeholders including the municipal government, the private sector, and NGOs to help improve access to healthy foods in Delhi?

10. Thank you so much for speaking with us, we greatly appreciate you taking the time out of your busy schedule!
Would you like to give us permission to use your name/identifying information in our final report? (yes / no)

As one last question, do you have any recommendations for who we should speak to in the next (time remaining) that could provide us with more information?

You can contact us with questions or any other information you would like to provide (give contact details), and we’ll be happy to respond.

Sample Interview Guide 2: Municipal Government Stakeholders

<table>
<thead>
<tr>
<th>NAME OF AGENCY/BRANCH:</th>
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<tbody>
<tr>
<td>NAME/TITLE OF INTERVIEWEE:</td>
<td></td>
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<td>DATE/TIME OF INTERVIEW:</td>
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<tr>
<td>LOCATION:</td>
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</table>

Hello, thank you again for agreeing to speak with us. (Introduce interviewers). We are working as consultants for the Global Alliance for Improved Nutrition (GAIN) and by speaking to you we hope to better understand the role the municipal government plays in providing the people of Delhi with access to nutritious foods.

With your permission, I will audiotape and take notes during the interview. The recording is to accurately record the information you provide, and will be used for transcription purposes only and will be handled confidentially. If you choose not to be audiotaped, I will take notes instead.

Interviewee (does / does not) agree to be audiotaped.

If you agree to being audiotaped but feel uncomfortable at any time during the interview, I can turn off the recorder at your request. Or if you don't wish to continue, you can stop the interview at any time.

Your study data will be handled as confidentially as possible. If results of this study are published or presented, individual names and other personally identifiable information will not be used unless you give explicit permission for this.
1. Okay, let’s get started. First, we’d like to ask you about government priorities surrounding nutrition policy. Could you tell us about any recent initiatives relating to nutrition undertaken by the municipal government?

2. What are the 3 most important accomplishments of (your specific dept) in the past 3 years to help Delhi residents improve their diets?
   a. Follow up: Were any of these efforts targeted at specific poor populations?

3. What are 3 things related to nutrition work that (your specific dept) done in the past 3 that you wish you could improve upon?
   a. What would you have done to make it better/what do you wish would have happened?

4. What one municipal policy do you think has the most effect on nutrition of the urban poor in Delhi?

5. In the next two years, what is the most important thing the municipal government can do to improve access to nutritional foods for poor Delhi residents?
   a. What are the challenges to making this happen?

6. What do you see as the biggest challenge to making sure healthy food is accessible to the people that need it most in the long term?
   a. What makes this challenge so difficult to tackle?

7. Of course, municipal government is not the only one working on issues like nutrition. Who are the most important partners (private sector, nonprofits, other levels of government) that the municipal government can work with to improve access to nutritious foods?

8. Our client, the Global Alliance for Improved Nutrition (GAIN) specializes in bringing together different stakeholders and building alliances to work on issues surrounding nutrition. We’ll be presenting the findings of our study to GAIN in a final report in a few months. What would be your recommendations to our client, GAIN, as to the most important thing to keep in mind when working with the municipal government to help improve access to healthy foods in Delhi?

Thank you so much for speaking with us, we greatly appreciate you taking the time out of your busy schedule!

Would you like to give us permission to use your name/identifying information in our final report? (yes / no)

As one last questions, do you have any recommendations for who we should speak to in the next (time remaining) that could provide us with more information?
You can contact us with questions or any other information you would like to provide at (give contact info), and we’ll be happy to respond.

Sample Interview Guide 3: Vendors

<table>
<thead>
<tr>
<th>NAME/LOCATION OF MARKET:</th>
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<tbody>
<tr>
<td>NAME OF INTERVIEWEE:</td>
<td></td>
</tr>
<tr>
<td>DATE/TIME OF INTERVIEW:</td>
<td></td>
</tr>
<tr>
<td>DESCRIPTION OF VENDOR’S STALL/SHOP/AREA:</td>
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</table>

Hello, thank you again for agreeing to speak with us. (Introduce interviewers). We are from Washington, DC and working with an NGO called the Global Alliance for Improved Nutrition (GAIN) and we are trying to understand the barriers to consumers accessing healthy foods in Delhi. The information we find will go into a final report that we will present to GAIN.

With your permission, I will take notes on what you tell me. If you don't wish to continue, you can stop the interview at any time.

Your study data will be handled as confidentially as possible. If results of this study are published or presented, individual names and other personally identifiable information will not be used unless you give explicit permission for this.

1. First I would like to ask you a couple of question about your produce and your business operations. My first question is regarding your top selling vegetables/fruits this season. Can you name the top three vegetables that have been selling the most this season?

2. On a normal day, for example yesterday, how many kilos are you able to sell?
   (Depending on the answer given above the below options should change)
   a. (Tomatoes)
   b. (Brinjal)
3. At what price do you sell each of these items?  
(Depending on the answer given above the below options should change)  
   a. Tomatoes  
   b. Brinjal  
   c. Spinach

4. How many days a week do you come in to the market to sell? Of those days that you are working how many hours do you operate (when do you open and close)?

5. And is this the only place that you sell your produce?

6. Talking to some of the vendors we've noticed that some of them source their produce from their own farm, or other farmers or commission agents (middle men). Where do you source your own produce from?

7. In a typical week, such as last week, how many times do you have to re-stock?

8. Within a week, such as the past one, approximately how much of the produce goes rotten and is wasted?  
   a. What about at other times of year, like the rainy season?

9. What are other fruits/vegetables you would like to sell but cannot access them?  
   a. If yes, why?

10. In our research, we have come across several problems that are being faced by small businesses like yours. I would like to ask you about some of the challenges you face on average in your daily business activities. (Below options are for probing.)  
    a. Transportation  
    b. Law Enforcement Agencies  
    c. Government Regulations  
    d. Suppliers  
    e. Market Demand

11. What typical difficulties do you have in finding good quality/fresh produce?  
    a. Can you give me an example?

12. In the past year did you face any obstacles from law enforcement agencies/government regulation?  
    a. If so, give an example
13. Consumers often complain that they are not getting good quality products, or the prices are too high. In your opinion, what are the problems faced by the consumers/your customers in the past year? The below options are there as guidelines to help with probing.)
   a. Supply Shortage
   b. High prices
   c. Transportation

14. I wonder if you can tell me a little information about your typical clientele. You seem to have a diverse range of buyers, some are probably from rich households, or middle-class, or some are other sabzi-walas/businesses. Approximately, how many of those people are poor and have trouble affording food?

15. I am sure there are many different ways to come here, but how do most of the poor customers access your market? (The below options are for probing.)
   a. Bus
   b. Walking
   c. Rickshaw/Taxi
   d. Car

16. Now, on a more sensitive topic about your financials, at the end of a typical business day like today, how much profit are you able to make? (remind him/her that this is an anonymous and the answer will be confidential)

17. Can you suggest 2-3 factors that will encourage your customers to buy more fruits/vegetables? (The below options are there as guidelines to help with probing.)
   a. Lower price
   b. Better location of market
   c. Better quality

Thank you for your speaking us. We appreciate your time and good luck with your business.

Lastly, would you like to give us permission to use your name/identifying information in our final report? (yes / no)
Sample Market Observation Guide

<table>
<thead>
<tr>
<th>NAME/LOCATION OF MARKET:</th>
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<tbody>
<tr>
<td>DATE/TIME OF OBSERVATION VISIT:</td>
<td></td>
</tr>
<tr>
<td>ESTIMATE NUMBER OF VENDORS</td>
<td></td>
</tr>
</tbody>
</table>

1. Vendor setup (circle one):
   a. Cart / floor mat / stall / other:
   b. Covered / uncovered / other:
   c. Permanent / temporary / unsure

2. Crowd:
   a. Approx # people per stall
   b. Approx # people in market

3. Variety of Products:
   a. Estimate number of fruit products sold:
   b. Estimate number of vegetable products sold:
   c. List 10 most obviously abundant products:
   d. Notable products missing: (see list)

4. Availability of Vegetables and Fruits (Quantity and Price):

<table>
<thead>
<tr>
<th>Quantity observed: Abundant/Scarce* rate 1-10 according to index</th>
<th>Price range quoted to customers (rupee)* see index</th>
<th>Range of quantities purchased (kg)* see index</th>
<th>Comments on quantity/price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tomatoes</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5. Availability of Vegetables and Fruits (Quality):

<table>
<thead>
<tr>
<th></th>
<th>Quality observed: fresh, rotten, mix...*</th>
<th>% that appears to not be fresh</th>
<th>Comments on quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tomatoes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brinjal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spinach</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oranges</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. Is this market within 1 km of low-income consumers? Y / N

7. Do many low-income consumers appear to shop here? (Provide approximate percentage)

8. How is this market accessible? (circle all that apply)
   a. Bus
   b. Road
   c. Foot
   d. Other:

9. Do you note any disturbances to business (including police, government officials, other)? IF yes, describe:

10. What and how many hand-washing facilities are available?
    a. Latrines with hand washing basins
b. Separate pipes and taps for washing vegetables and hands

c. None

11. Is there any waste disposed/garbage close to the vegetable and fruit vendors? Y/N

Market Observation Guide: Index for definitions/measurements

| Quantity Abundant /Scarce | Rate on a scale of 1-10. 1 being the lowest (scarce) and 10 (abundant) being the highest:
|                           | 1 = the product cannot be found anywhere in the market
|                           | 5 = the product is available in moderate quantities from most vendors
|                           | 10 = product is available in large quantities in every stall in the market. |

| Quality Fresh/Rotten      | Rate on a scale of 1-10. 1 being the lowest (rotten) and 10 (fresh) being the highest:
|                           | 1 = none of the product is fit for human consumption (moldy, putrid).
|                           | 5 = at least half of the product appears to be fresh.
|                           | 10 = all of the product observed appears to be very clean and fresh.
|                           | If applicable, observe several vendors selling this and note any quality differences. |

| Price/Quantities Purchased | Record the average kilos of a product you observe customers buying and the price per unit for at least 5 customers. Use this to create a range of prices and quantities sold. If possible, observe several vendors selling the same product and note differences. |
Annex III: Urban Nutrition Stakeholders

This annex provides an illustrative grouping of stakeholders in the urban nutrition space.

**Governance and Policy Stakeholders**
- **Local/municipal government:**
  - Food safety department
  - Health department
  - Education department
  - Market governing body
  - Zoning boards or bodies
  - Nutrition mission or coordinating body
- **National government:**
  - Food, welfare, and/or agriculture department
  - Health department
  - Gender or women’s and/or children’s empowerment department
  - Education department
  - Other policymakers with a food or nutrition mandate
  - Nutrition mission or coordinating body
- **Civil society:**
  - Local organizations
  - International organizations
  - Multilateral organizations (FAO, UNICEF, WHO, WFP)
  - Local activists
  - Academic experts in local universities

**Value Chain Stakeholders**
- **Production**
  - Farmers and families
  - Farmer unions
  - Laborers
  - Suppliers for
    - Pesticides
    - Fertilizer
    - Sprinkles, fortification
- Seeds
  - Farming equipment (tractors, harvesters, irrigation)
    - Local agricultural officers
    - Local village service providers (electricity, water, irrigation, transport)
    - Research institutes working on fortification, horticulture, agriculture
    - Middle men (aggregators, collectors) at village, district, town level
    - Local tax authorities

- Transport & Storage
  - Transport companies’ representatives
  - Bus drivers
  - Individual operators
  - Smaller-scale transport modes (push carts, animal-driven carts)
  - Cold storage facilities (operators and owners)
  - Dry storage facilities
  - Granaries (private and public)

- Processing
  - Sorters, graders
  - Packagers
  - Suppliers
  - Packaging
  - Labeling
  - Grading authorities
  - Quality control authorities
  - Sanitation authorities

**Food Environment Stakeholders**

- Wholesale markets at the village, town, city level
  - Middle men, liaisons
  - Vendors (individuals, FBO representatives)
  - Markets governing authorities, marketing or produce committees
  - Sub markets
  - Retail vendors
  - Small scale vendors
  - Push carts
  - Mom and pop shops
  - Large scale vendors (private supermarket chains)
  - Government outlets

**Consumer Stakeholders**

- FMCG, FBO companies
- Food processors
Annex IV: Data Sources

Below is a list of examples and types of data sources useful to launch a rapid urban nutrition appraisal. These data sources are organized by subject area. While some examples are specific to India, parallel sources of information exist for many developing countries.

Nutrition Resources

- **National Family Health Surveys**: These household surveys are often completed by central governments and report information related to population, health and nutrition. Many times this is aggregate at the state or regional level, so it useful to search for municipal level data as well. (Example: State Fact Sheet for NCT Delhi, National Family Health Survey 2015-16)

- **Government Nutrition Plans**: Federal, state and municipal governments often have annual or five-year nutrition strategies targeting relevant issue areas. These plans are also useful for understanding government priorities and where the “political will” currently stands. (Example: New Delhi Nutrition Annual Plan 2013, Government of the National Capital Territory of Delhi)

Food Systems/Food Governance Resources

- **World Cancer Research Fund International 2017 NOURISHING Framework and Policy Database**: This database is regularly updated with implemented government policies across 125 countries in the areas of food environment, food systems, and behavior change communication. http://www.wcrf.org/policy/nourishing-framework

- **WHO Global Database on the Implementation of Nutrition Action (GINA)**: An interactive database with information on nutrition policies and actions. https://extranet.who.int/nutrition/gina/en

- **Food Fortification Initiatives, Country Profiles**: Provides country-level analysis of food fortification policies and legislation. www.ffinetwork.org/country_profiles/index.php

- **Hunger and Nutrition Commitment Index (HANCi) Institute of Development Studies. 2017**: this index “ranks governments on their political commitment to tackling hunger and under nutrition” in 45 countries. www.hancindex.org/hanci

- **FAOLEX Database**: One of the largest collections of national laws, regulations, and policies on food, agriculture and natural resources management. www.fao.org/faolex/en/

- **FAPDA Web-based Tool**: This is a useful tool for food and agriculture policy decision analysis. http://www.fao.org/in-action/fapda/web-based-tool/en/

Prices and Consumer Information Resources
• **Consumer Price Index:** An index of the changes in prices paid by typical consumers for retail goods and other items. Generally provided by the central government.

• **Current Food Price Trends:** This information can often be found on government websites, specifically of those agencies charged with regulating food marketing. In India, the Delhi Agricultural Marketing Board provides a daily price estimate for a variety of commodities.