

ACDI/VOCA's Food Environment Analysis Unearths Opportunities for Nutrition in the Food System

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To date, analyses for informing nutrition-sensitive programming have failed to consider the food system holistically, instead focusing on one component at a time. This approach has led programs to focus solely on increased production for home consumption and fails to consider how the rest of the food system affects local diets. Recent evidence suggests the need to adopt a food systems approach, which requires implementers to think of how the food system supports positive nutrition behaviors and how consumers interact with the food system.¹ For example, examining what types of foods are sold in the local marketplace or how household dynamics affect what households desire and purchase. Considering the food system can help programs look beyond agricultural production to food transformation and processing, market and trade systems, as well as consumer preferences and behaviors.



Grains and aromatics from a market in Amhara, Ethiopia in 2019

ACDI/VOCA's Food Environment Analysis:

Implemented in five countries to date, ACDI/VOCA's Food Environment Analysis (FEA) guides programs in analyzing the external and personal food environment domains (see text box), bridging the gap between household and market-level approaches. The food environment provides a framework for conceptualizing how the food system supports or deters positive nutrition behaviors and consumers' perception of its performance. The FEA consists of three surveys:

1) Market Actor and Food Marketplace survey - Key informant interviews with vendors, food processors,

FEA Food Environment Domains

External food environment: food price, food availability, vendor and product properties, and marketing and regulations.

Personal food environment: affordability, desirability, convenience, and accessibility of foods and household gender dynamics related to food.

¹ McDermott, J., Johnson, N., Kadiyala, S. et al. Food Sec. (2015) 7: 593. <https://doi.org/10.1007/s12571-015-0462-9>

and market officials to understand trade dynamics for food sourcing, marketing of nutritious foods, regulations and policies, and opportunities and challenges in the market;

2) Consumer Focus Group Discussions - Discussions with consumers to reveal qualitative insights regarding food accessibility, affordability, convenience, desirability, gender and social dynamics, and consumption of safe, nutritious foods; and

3) Household Behavior Surveys - Quantitative household surveys to understand diet adequacy, household food allocation, decision-making related to food, food expenditure, and other personal food environment considerations.

The FEA's objective is to address the following questions:

- How does the external food environment affect whether households can and want to procure safe, nutritious foods?
- How do desirability, convenience, affordability, accessibility, and social and intra-household gender dynamics affect household decision-making related to what households want and do procure for household consumption?
- What is the current state of diets? Are households consuming diverse diets? Are project-targeted nutritious foods being consumed?



Butcher from a market in Amhara, Ethiopia in 2019

This case study describes the applicability of ACDI/VOCA's Food Environment Analysis to guide programmatic planning for improved local food systems that support the consumption of safe and nutritious foods. We explore the implementation of the FEA in India for the Andhra Pradesh Farmer Market Readiness Program (APFMRP II), discuss assessment findings, ways the tool has and will be adapted based on this study, four other FEAs, and the potential scaling of the tool.

India Methodology and Findings:

APFMRP II, implemented by Tanager International, completed an FEA in March 2020 to understand the local diets of tribal and nontribal households (HH) and identify programmatic opportunities for supporting healthy diets in local food systems. The research team completed 126 HH surveys, 10 focus group discussions (FGD), and four rapid market assessments. The FEA findings highlighted key food system issues gaps in dietary diversity, intrahousehold food allocation, food availability, accessibility to foods, convenience in food

preparations, and value of nutrition and knowledge. Table 1 provides greater detail on why these were selected as “issue areas” that the project could address.

Quick Statistics from APFMRP’S FEA:

- Less than 50 percent of HHs consumed animal source foods, dark green leafy vegetables, and vitamin-A rich fruits and vegetables in the 24 hours preceding the survey.
- 48 percent of female youth respondents reported consuming less diverse foods than the men in their HHs.
- A nutritious diet for a family of four cost \$1.63 per day in the nontribal areas and \$1.73 in the tribal areas, which was considered attainable based on food expenditure data.
- A majority of foods were perceived by respondents as moderately priced or expensive, apart from dark green leafy vegetables and white tubers.
- 54 percent of tribal respondents reported that they are traveling greater than two hours to get to the market.
- 73 percent of female respondents reported spending at least two hours a day preparing foods for the HH.

Table 1. Status of the Food System by Food Environment Component	
Color coding for Table 1 is as follows: red: high importance; orange: high-medium importance; yellow: medium importance	
Dietary intake	Tribal & Nontribal area: HHs are consuming a wide array of foods. However, nutrient-rich foods that can provide HHs with the necessary macro-and micronutrients are not consumed as frequently as could be desired, particularly for pulses, melons, dark green leafy vegetables, eggs, milk, and millet.
Availability	Tribal: Food is adequately available at the peri-urban market and households have availability from their own productions. However, vending of food in the village is uncommon. Nontribal: Food is available in local villages. However, there are multiple food items from main food groups that are limited. Nonetheless, households are able to meet their macro-and micronutrient needs with the available foods. Value-added foods are not available.
Accessibility	Tribal: HHs have a lot of foods from their own production that are available in the household, which improves accessibility. However, HHs, particularly women, spend a lot of time traveling to and from the market because foods are not available in the local market. Nontribal: Positively, there are vendors present in the villages increasing access to foods at the village-level. Additionally, men’s transit for livelihood or errand purposes allows them to readily access urban markets.
Convenience	Tribal & Nontribal: Women already have time burdens and foods that require a significant amount of time to prepare are not favored. Time burdens were higher in nontribal areas.
Household gender dynamics	Tribal & Nontribal decision-making related to food appears to be relatively equal. However, there remains room for improvement for the allocation of foods, particularly for the consumption of diverse foods, particularly in nontribal areas.

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Nutrition knowledge and value	Tribal: Nutrition knowledge related to food is low and the majority of respondents reported no access to nutrition information. Taboos exist around the consumption of animal-source foods. Nontribal: HHs seem to be aware of "good" and "bad" foods, however, there is room to realign the perceptions of what foods are "good" and "bad." Taboos exist around the consumption of animal-source foods.

Based on these findings, it was recommended that the activity address these gaps/issues through the following approaches:

- **Integrate social and behavior change activities into ongoing activities and/or as standalone activities** - to target the adoption of targeted behaviors. The FEA findings revealed key behaviors the project could focus on to improve nutrition as 1) increase dietary diversity, particularly the consumption of millet, pulses (peanut and Bengal/red gram), dark green leafy vegetables (amaranth leaves), and animal-source foods (eggs, milk curd, milk) and 2) improved intrahousehold allocation of foods, particularly between men and women.
- **Develop local vending of foods and local value-addition of target nutrient-rich foods** - to increase availability, accessibility, and convenience of foods. For example, FGD respondents noted that they avoid preparing dark green leafy vegetables (DGLVs) because they are time-consuming to prepare. Food vendors can sell DGLVs that are already cleaned and plucked to increase the convenience of preparing DGLVs.
- **Increase local productivity of target nutrient-rich foods** - to improve local availability, accessibility, and affordability of these foods. Specifically, the project can focus on increasing the production of foods identified to enhance dietary diversity (e.g., millet, Bengal gram, etc.).

Moving Forward with the FEA:

The FEA enabled APFMRP II to more holistically assess how different components of the food system affect the availability, accessibility, desirability, and consumption of safe, nutritious foods. For example, without these market-level surveys, the project may not have identified the opportunity to increase local accessibility and the convenience of foods by strategically increasing the technical and operational capacity of local food processors. Subsequently, APFMRP II has adapted its workplan based on the FEA's recommendations, noted above.



FEA research team in Ethiopia, 2019

ACDI/VOCA has implemented the FEA in Ghana, Burkina Faso, Kenya, Niger, and India to inform new business and ongoing program design. Though each FEA captured a holistic view of the local food system, each FEA was adapted to fit the needs of the program and the local context. For example, for the upcoming Market Systems and Resilience Activity in Ghana, the research team focused substantially more on the external food environment domains, given the post-production project focus, implementing more key informant interviews with local marketplace actors to understand trade and local processing. The FEA for the Victory Against Malnutrition Plus (ViMPlus) activity in Burkina Faso zeroed in on personal food environment domains, like accessibility and perceived affordability, given the household-level focus of the project. Moving forward, ACDI/VOCA will continue to use the FEA as a way to look across the food system - past production - to get to the key food system leverage points that support local consumption of safe, nutritious food. The full FEA guidance document and tools are still being finalized and should be available in 2022. AMPFMRP II FEA survey tools are immediately available for replication/use.



Pilot testing site for the ViMPlus 2019 FEA - Vendors selling dark green leafy vegetables in a market in Burkina Faso.