Food Environment Analysis

APFMRP 2

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Executive summary

The Andhra Pradesh Farmer Market Readiness Program Phase 2 (APFMRP II) completed a food environment analysis (FEA) to understand where there are opportunities and challenges for households in consuming sufficient and diverse diets in the nutrition pilot areas. From February to March 2020, the project implemented the FEA in Anantapur (nontribal area) and Srikakulam (tribal area), which consisted of household surveys, focus group discussions (FGDs), and a rapid market assessment looking at food availability and price. The project completed 126 household surveys, 10 focus group discussions, and 4 rapid market assessments. Dietary diversity, intrahousehold food allocation, food availability, accessibility to foods, convenience in food preparations, and value of nutrition and knowledge were identified as areas of focus from the FEA (see Table 1[1]). Behaviors of focus for the project to focus on include: 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. Based on these results, it is recommended that the activity look further into the following:

- Develop social and behavior change activities to be integrated into ongoing activities and/or to be implemented as standalone activities; and/or
- Develop local vending of foods and local value-addition of target nutrient-rich foods; and/or
- Develop local productivity of target nutrient-rich foods.

Table 1. Status of the Food Environment

Food environment component	Tribal area	Nontribal area
Dietary intake	Households are consuming a wide array of foods. However, nutrient-rich foods that can provide households 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.	Households are consuming a wide array of foods. However, nutrient-rich foods that can provide households with the necessary macro- and micronutrients are not consumed as frequently as could be desired, particularly for pulses, dark green leafy vegetables, curd, milk, and millet.
Availability	Food is adequately available at the peri-urban market is and households have availability from their own productions. However, vending of food in the village is uncommon.	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.
Price / Actual affordability	Nutrient-rich foods are relatively affordable for households given their self-reported incomes and food expenditures.	Nutrient-rich foods are relatively affordable for households given their self-reported incomes and food expenditures.
Perceived affordability	Households perceive nutrient-rich foods that could be leverage points for improved nutrition as expensive. However, households	Households perceive nutrient-rich foods that could be leverage points for improved nutrition as expensive. However, households mostly believe

[1] Color coding for Table 1 is as follows: red: high importance; orange: high-medium importance; yellow: medium importance; green: less importance. Please note that Table 1 is discussed further in the Recommendation section of this report.

	mostly believe that they have the resources to purchase an array of nutrient-rich foods.	that they have the resources to purchase an array of nutrient-rich foods.
Accessibility	Households have a lot of foods from their own production that are available at the household, which improves accessibility. However, households, particularly women, spend a lot of time traveling to and from the market because foods are not available in the local market.	Accessibility is important for households, particularly for women, as they are purchasing foods on a daily basis for their cooking in that day. Positively, there are vendors present in the villages. Additionally, men's transit for livelihood or errand purposes allows them to readily access urban markets.
Convenience	Convenience is important for the preparation of foods. Women have already time burdens and foods that require a significant amount of time to prepare are not favored.	Convenience is important for the preparation of foods and was discussed significantly among this group. Women have already time burdens and foods that require a significant amount of time to prepare are not favored.
Desirability	Households desire to consume foods that are nutrient-rich (e.g., fruits, vegetables, animal-source foods).	Households desire to consume foods that are nutrient-rich (e.g., fruits, vegetables, animal-source foods). However, there is a desire to consume foods that are not nutritious (e.g., sweets and snacks).
Household gender dynamics	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. Additionally, women spend a lot of time cooking and acquiring foods, which adds to a high time burden.	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 the amount of foods and the types of foods consumed.
Nutrition knowledge and value	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.	Households 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.

Background

Nutrition in the Implementation Area

Nutrition remains a problem in rural Andhra Pradesh, where 33 percent of children under five years of age are stunted (low stature for age) and 18 percent are wasted (too thin for their weight), 20 percent of women of reproductive age (WRAs) are too thin (BMI < 18.5), and anemia is problematic both for children and WRAs, where approximately 60 percent of the population is anemic.[2] Optimal nutrition, including diverse and energy-dense diets, is important for proper human development and human workforce

[2] International Institute for Population Sciences. National Family Health Survey (NFHS-4): State Fact Sheet Andhra Pradesh. 2016. Retrieved from: http://rchiips.org/NFHS/pdf/NFHS4/AP_FactSheet.pdf

participation and effectiveness. Studies in Andhra Pradesh and Telangana state have found that total energy intake, macronutrient, and micronutrient intake is suboptimal and that households are primarily relying on staple foods.[3,4] Nutrition-sensitive programming has the opportunity to affect nutrition and food security of target households, or those who are members of farmer producer organizations (FPOs), and of indirect target households, those who may be affected by improvements in the local food system.

Purpose of the Food Environment Analysis

The purpose of the Food Environment Analysis was to understand challenges and opportunities in the local food system for supporting the consumption of safe, nutritious foods in the APFMRP II nutrition pilot areas, Anantapur and Srikakulam districts in Andhra Pradesh. The APFMRP II team will use the results of the FEA to inform the design of nutrition-sensitive programming in the two pilot areas.

The research team adopted the Food Environment Framework from Agriculture for Nutrition and Health. The food environment serves as a framework for understanding the state of the local food system and how subsectors of the food system[5] are performing for the consumption of safe, nutritious foods. Domains of interest in the food environment are organized into the external food environment and the personal food environment. The external food environment domains include food price, food availability, vendor and product properties, and marketing and regulations. The personal food environment considers how consumers perceive and interact with the external food environment and the domains include affordability, desirability, convenience, and accessibility of foods and household gender dynamics related to food. The research team used specific domains of the food environment framework for the analysis, with additional outcomes of interest, such as dietary intake.

Methods

Development of the Tools

The field research team was comprised of two APFRMP II senior staff members and four field-level facilitators and ACDI/VOCA's HQ Associate Director of Nutrition and Food Systems. The research team developed three tools to conduct the FEA, including: household surveys, focus group discussion facilitator guides, and a rapid market (food price and availability) assessment. The tools capture all components of the personal food environment and price and availability in the external food environment. Given the scope of the project, the research team decided not to include questions on vendor and product properties and marketing and regulation in the external food environment tool.

Survey Implementation

A convenient sampling of the project FPOs was used for identifying the villages and households for the FEA. The research team selected villages in the tribal and nontribal regions in Anantapur and Srikakulam, respectively. Prior to data collection the research team was trained on the three data collection tools and piloted the tools. FEA implementation in the nontribal region occurred from February 24-28, 2020 and

[3] Rao K M, Kumar R H, Krishna K S, Bhaskar V, Laxmaiah A. Diet & nutrition profile of *Chenchu* population - A vulnerable tribe in Telangana & Andhra Pradesh, India. Indian J Med Res 2015;141:688-96

[4] Amarender, R. Regional disparities in food habits and nutritional intake in Andhra Pradesh, India. 2010. Regional and Sectoral Economic Studies.

[5] Food system subsystems for the purpose of this report include agricultural production, food processing, and market and trade.

implementation in the tribal region occurred from March 9-13, 2020. A total of 10 focus group discussions, 126 household surveys, and 4 market surveys were conducted. The research team received verbal consent prior to the initiation of all surveys.

Findings

Findings will be presented separately for both tribal and nontribal groups, where results differed and will be presented as a total finding where results did not differ. Findings pertaining to the personal food environment incorporated household surveys and focus group discussions and findings on the external food environment relied on the rapid market assessment on food price and availability.

Demographics

The research team collected background information on the participants of the household surveys, focusing on tribal group identify, age, female-headed vs. male-headed, income of the household, number of people living in the house, and the makeup of household members. In total, fifty-two percent of respondents considered themselves “nontribal” and forty-eight percent of respondents considered themselves to belong to a tribal group. Descriptive statistics can be found in Table 2 below.

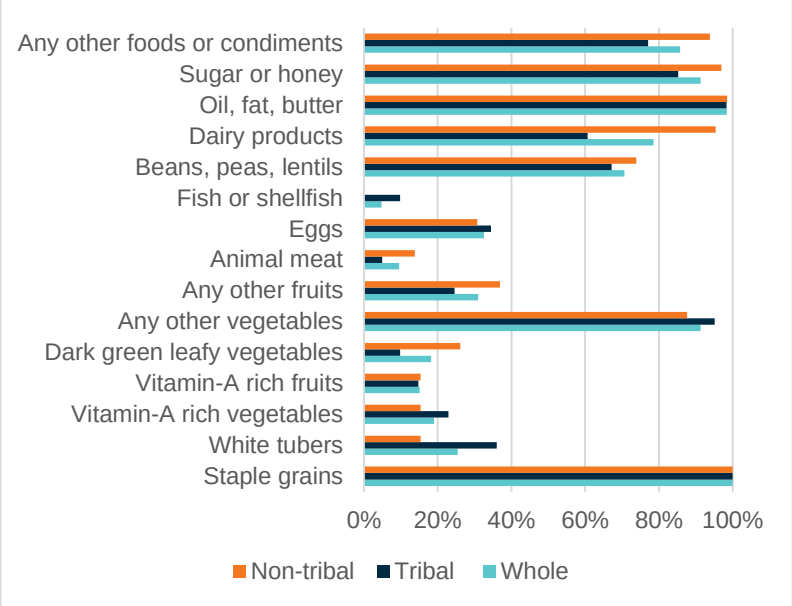
Table 2: Descriptive Statistics of Demographic Information

Variable	Tribal	Nontribal	Whole group
Age of respondent (mean)	38.72	38.15	38.43
Female-headed households (%)	72.10%	87.69%	80.26%
Annual income of the household (mean)	62,869	70,892	66,921
Number of people in the household (mean)	4.05	4.43	4.24
Households with a child under two years old (%)	14.75%	7.69%	11.11%
Households with a child under five years old (%)	34.43%	20.00%	11.11%
Households with an adolescent girl (%)	47.54%	55.38%	51.59%
Full vegetarian households (%)	1.64%	21.54%	11.90%

Household Nutrition

Prior to designing nutrition-sensitive activities, it is important to understand the state of diets in the implementation area. The household dietary diversity score, (which asks respondents to answer whether their household has consumed a certain food groups within the last 24 hours) and food frequency (which investigates the frequency in which a household consumes a specific food item) were captured in the household surveys. The household dietary diversity score provides information on the ability of households to access sufficient quality and quantity of foods. The research team collected information on disaggregated food groups of interest to the project for a total of 15 food groups (shown in Figure 1). However, the dietary diverse score combines disaggregated categories for a total of 12 food groups (e.g., dark green leafy vegetables combines into vegetables). The average household dietary diversity score was 7.18 out of 12 food groups and was 7 for tribal and 7.46 for nontribal. As can be seen in Figure 1, a high percentage of households consumed staple grains, dairy products, other vegetables, and beans, peas, and lentils in the 24 hours preceding the survey. However, less than fifty percent of households consumed fish and shellfish, eggs, meats, dark green leafy vegetables, and vitamin-A rich fruits and vegetables.

Figure 1: Consumption of food groups by the household in the 24 hours preceding the survey



The research team also wanted to investigate the frequency in which households consume specific nutrient-rich foods that may be of interest to the project for promoting for improved household nutrition. For this, the research team elected 1-3 specific food items in each of the main food groups (e.g., milk, eggs, and poultry from the animal-source food group). As can be seen in Table 3, staple grains (rice, millet, or wheat) were reported as foods overwhelmingly consumed on a daily basis by households. Households reported that they consume beans, lentils, and groundnuts (pulses) frequently. A majority of households reported to consume at least one food of this group on a daily or 3-4 times per week basis. Staple grains and pulses are important for providing a large portion of energy needs of households and some protein and micronutrient needs. Animal-source food consumption was lower in comparison to staple foods, where roughly 50% of households reported to consume eggs, dairy products, fish, or chicken at least once a week. There are differences between tribal and nontribal households' consumption patterns, where nontribal respondents were more likely to consume dairy products on a weekly basis and tribal respondents were more likely to consume fish on a weekly basis. Weekly consumption of dark-green leafy vegetables (DGLV), which are important sources of iron, vitamin B12, vitamin A, and magnesium, was particularly high among nontribal respondents. The only DGLV that at least 50% of tribal respondents consumed at least once weekly was amaranth greens. Lastly,

consumption of bright orange/yellow fruits or vegetables was the lowest among the food groups and less than 50% of respondents consumed any of these foods at least once a week.

Table 3: Frequency of Consumption of Food Items

Food Item	Response Group	Frequency of consumption					
		Daily	3-4 times per week	1-2 times per week	1-3 times per month	Seldom	Never
Staple Grains							
Rice	Whole	96.03%	0.08%	0%	0%	0.08%	0.24%
	Tribal	93.44%	1.64%	0%	0%	1.64%	3.28%
	Nontribal	98.46%	0%	0%	0%	0%	1.54%
Millet	Whole	10.32%	19.05%	26.19%	11.90%	15.87%	16.67%
	Tribal	8.20%	13.11%	13.11%	6.55%	26.23%	32.79%
	Nontribal	12.31%	24.61%	38.46%	16.92%	6.15%	1.54%
Wheat	Whole	4.76%	10.32%	42.86%	9.52%	15.87%	16.67%
	Tribal	0%	1.64%	22.95%	13.11%	27.87%	34.43%
	Nontribal	9.23%	18.46%	61.54%	6.15%	4.62%	0%
Beans, Lentils, and Groundnuts							
Millets – Toor Dal	Whole	19.84%	42.86%	37.30%	0%	0%	0%
	Tribal	14.75%	36.07%	49.18%	0%	0%	0%
	Nontribal	24.62%	49.23%	26.15%	0%	0%	0%
Black Gram	Whole	2.38%	9.52%	30.16%	22.22%	23.02%	12.70%
	Tribal	1.64%	8.20%	21.31%	14.75%	29.51%	24.59%
	Nontribal	3.08%	10.77%	38.46%	29.23%	16.92%	1.54%
Chickpea	Whole	0%	7.94%	11.90%	15.08%	34.13%	38.10%
	Tribal	0%	1.64%	19.67%	14.75%	32.79%	31.15%
	Nontribal	0%	0%	4.62%	15.38%	35.38%	44.62%
Peanut	Whole	35.71%	12.70%	19.84%	9.52%	19.05%	3.17%
	Tribal	1.64%	3.28%	34.43%	16.39%	39.34%	4.92%
	Nontribal	67.69%	21.54%	6.15%	3.08%	0%	1.54%
Animal-source Foods							
Eggs	Whole	18.25%	5.56%	38.1%	19.84%	11.11%	7.14%
	Tribal	13.11%	6.56%	49.18%	21.31%	9.83%	0%
	Nontribal	23.08%	4.62%	27.69%	18.46%	12.31%	13.85%
	Whole	77.78%	0%	1.59%	0.79%	7.94%	11.90%

Milk and Dairy Products	Tribal	57.38%	0%	1.64%	1.64%	16.39%	22.95%
	Nontribal	96.92%	0%	1.54%	0%	0%	1.54%
Fish	Whole	0.79%	6.35%	23.02%	14.29%	36.51%	19.05%
	Tribal	1.64%	13.11%	45.90%	22.95%	14.75%	1.64%
	Nontribal	0%	0%	1.54%	6.15%	56.92%	35.38%
Chicken	Whole	0.79%	0%	43.65%	33.33%	18.25%	3.97%
	Tribal	0%	0%	45.90%	31.15%	22.95%	0%
	Nontribal	1.54%	0%	41.54%	35.38%	13.85%	7.69%
Dark-green Leafy Vegetables							
Fenugreek	Whole	0.79%	7.94%	30.16%	13.49%	14.29%	33.33%
	Tribal	0%	0%	4.92%	9.84%	18.03%	67.21%
	Nontribal	1.54%	15.34%	53.85%	16.92%	10.77%	1.54%
Spinach	Whole	0.79%	1.54%	26.19%	9.52%	26.19%	35.71%
	Tribal	0%	0%	11.48%	8.20%	26.23%	54.10%
	Nontribal	1.54%	3.08%	40.00%	10.77%	26.15%	18.46%
Amaranth	Whole	0.79%	9.52%	40.48%	24.60%	17.46%	7.14%
	Tribal	1.64%	16.39%	39.34%	26.23%	14.75%	1.64%
	Nontribal	0%	3.08%	41.54%	23.08%	20.00%	12.31%
Bright Orange/yellow Fruits and Vegetables							
Mango	Whole	6.35%	10.32%	6.35%	12.70%	48.41%	15.87%
	Tribal	11.48%	19.67%	3.28%	11.48%	54.10%	0%
	Nontribal	1.54%	1.54%	9.23%	13.85%	43.08%	30.77%
Papaya	Whole	0.79%	8.73%	23.02%	22.22%	34.13%	11.11%
	Tribal	1.64%	14.75%	36.07%	9.84%	34.43%	3.28%
	Nontribal	0%	3.08%	10.77%	33.85%	33.85%	18.46%
Musk Melon	Whole	1.59%	1.59%	8.73%	16.67%	42.06%	29.37%
	Tribal	0%	1.64%	1.64%	6.56%	50.82%	39.34%
	Nontribal	3.08%	1.54%	15.38%	26.15%	33.38%	20.00%
Carrot	Whole	0%	1.59%	37.30%	25.40%	19.84%	15.87%
	Tribal	0%	0%	32.79%	22.95%	26.23%	18.03%
	Nontribal	0%	3.08%	41.54%	27.69%	13.85%	13.85%

In addition to the quantitative methods, the research team asked about consumption habits in the focus group discussions. Participants in the focus group discussions listed the foods below as foods they consumed on a regular basis. It is evident from the FGD results and the quantitative household surveys that households eat a range of nutritious food items. However, it can be noted that households did not list any bright orange/yellow fruits or vegetables, which mimics the low consumption found in the household surveys. Focus group discussion participants in tribal and nontribal areas listed meat, fish, eggs, and prepared dishes as foods that are “rarely consumed”.

Foods participants self-reported to consume on a regular basis:

- Tribal: rice, rasam, millet, porridge, plantains, amaranth, vegetables (palm sprouts, dark green leafy vegetables, pumpkin, gongura, radish, drumsticks, bamboo shoots), fish, tapioca, cashew apple
- Nontribal: rice, peanut, millet, dal, rasam, chili powder, vegetables (eggplant, bitter gourd, okra, tomato, dark green leafy vegetables), potatoes, chicken, eggs, mutton, milk (in tea)

External Food Environment

The research team investigated markets that the surveyed households visit to procure their foods. In total, three markets were surveyed for the nontribal area and one market was surveyed in the tribal area. The nontribal markets included two village markets and one market 3 km away from the villages, off the main tarmac road. The surveyed tribal villages did not have vendors in the village and therefore the research team surveyed the market 20 km away from the villages that households reportedly visit. Price and availability of foods was collected for these markets. An augmented Cost of the Diet was run with the foods and prices gathered. Please note this was not an exhaustive cost of the diet and only considered the food items in the marketplace, not those produced by households.

Availability

Tribal area: In the tribal area, there is a limited number of food vendors in the surveyed rural villages. From the FGDs, households reported that sometimes men with carts will come into their village with fruits and vegetables but that it is infrequent. For this reason, households tend to visit the market in the peri-urban area when they need to purchase foods. However, participants from the focus group discussions also noted that they produce the majority of the foods they consume, which provides increased accessibility. FDD participants said they produce the following food items: millet, lentils, cluster beans, tubers, rice, red gram, cashew, plantains, maize, sesame, jack fruit, pumpkin, banana, mango, bitter gourd, papaya, soursop, apple, and spices. They also said that they typically are only going to the market to purchase milk, eggs, meat, fish, oil, rice, and spices. The peri-urban market that households visit when they need to purchase foods is a large food market (50+ food vendors) with a wide variety of foods. All of the nutritional food groups (staple grains, pulses, dark green leafy vegetables, vitamin-A rich fruits/vegetables, animal-source foods, etc.) were well represented. The Cost of the Diet analysis did not find that any macronutrients or micronutrients were hard to meet for households.

Nontribal area: The nontribal areas were different from the tribal areas in a few respects: there were food vendors present in the villages and households purchase a majority of their foods. Households in the rural villages in the nontribal areas visit their local village vendors for daily food needs (greens, milk, eggs, etc.), will visit the markets off the main tarmac if there are other fruits or vegetables needed, or will visit Anantapur city for more bulk purchasing (rice, oil, sugar, etc.). Villages in the nontribal areas had between 5-10 small vendors that sell daily food needs and processed snack foods. These vendors procure their food items from the urban area, like Anantapur city, and resell the food items for a higher price. Staple

grains, pulses, dark green leafy vegetables, animal-source foods, and other fruits and vegetables were available in the villages by these local vendors. Vitamin-A rich fruits and vegetables were not available in the local villages, but carrots were available at the market off the tarmac, near the villages. The Cost of the Diet Analysis found that all macronutrients and micronutrients were able to be met with the food available in the local villages or by the tarmac market. Please note that the research team did not survey Anantapur city for food availability and price and therefore be missing more competitive prices for bulk foods or missing food items that are not widely available in the villages, like fruits.

Prices

A Cost of the Diet analysis was run using the price data for 33 food items found in the surveyed markets. It is important to note that the price of a diet discussed here does not account for the "free" foods that households produce. It would be expected that true cost of the diet would be lower than is presented here. Nonetheless, the analysis can point towards the cheaper, locally available foods that combined allow for households to meet their nutritional needs. The cost of the diet was calculated for a household of four people, with one child (6-23 mo), one adolescent, one adult female, and one adult male. This roughly corresponds to the average number of people in the household found in the household surveys (4.04). The average price of food items can be found in the Annex section of this report.

Tribal area: A nutritious diet in the tribal area was calculated to be 130.98 INR per day and 3,983 per month ($1.73 and $52.49, respectively). This diet consisted of millet, wheat flour, rice, chickpea, peanuts, eggs, milk, amaranth leaves, melon, and palm oil. The majority of protein, which provided 145.7% of the household's protein needs, came from millet, chickpeas, peanut, bengal gram, and eggs. The majority of vitamin A and vitamin C came from amaranth leaves and cantaloupe. Animal-source foods included eggs and milk and contributed significantly to vitamin B12, particularly for egg. Unfortunately, roughly seven eggs were needed to be consumed by the household to provide 79.0% of the household's vitamin B12 needs. Positively, the average self-reported weekly food expenditure is sufficient to cover the cost of a nutritious diet as calculated here. Furthermore, if households are producing the majority of the food they consume, as the responses from the focus group discussions indicate, the cost would be significantly lower. A very small proportion of respondents in the tribal area reported to consume millet, wheat flour, chickpea, peanut, bengal gram, amaranth leaves, milk, egg, and cantaloupe on a daily basis.

Nontribal area: In the nontribal area, the nutritious diet cost 123.89 INR per day and 3,768 INR a month ($1.63 and $49.66, respectively). This diet consisted of wheat flour, rice, peanuts, bengal grams, eggs, milk curds, milk, broad beans, bitter gourd, spinach, amaranth leaves, and palm oil. The majority of protein (which provided 245% of the household's need) came from the grains, bengal gram, peanut, milk curds, and broad beans. Similar with the tribal area, the majority of vitamin A and vitamin C was met from amaranth leaves. Iron was met primarily from bengal gram, broad bean, and amaranth leaves. Unlike in the tribal area which relied on egg for vitamin B12, milk curd provided a majority of vitamin B12 for the household (58.9%) in the nontribal area. Despite these foods being relatively affordable given reported incomes and weekly food expenditures, a small minority of households consumed the foods from this analysis on a daily basis.

Programmatic considerations: Positively, households should be able to purchase a nutritious diet with the incomes and food expenditures they self-reported in the household surveys. This could provide reasoning to why the household dietary diversity score is relatively higher, compared to regions of the world where the cost of a nutritious diet is higher than a household's income. However, considering how important pulses, dark green leafy vegetables, and eggs and dairy are for meeting macronutrient and micronutrient needs, households are not consuming these foods as frequently as would be desired. For example, only 9.84% of tribal household survey respondents consumed any dark leafy green vegetable in

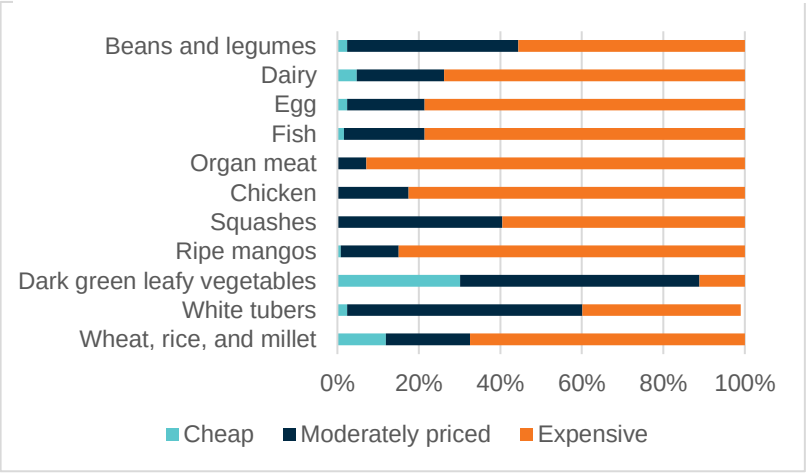
the day prior to the survey. However, the cost of the diet calculates that 350 grams of amaranth greens would provide a household with 82.2% of vitamin A, 52.9% of vitamin C, 15.9% of folic acid, 18.9% of iron, and 63% of magnesium of the daily need. These food items could be promoted by the program to help households meet their nutritional requirements.

Personal Food Environment

Affordability

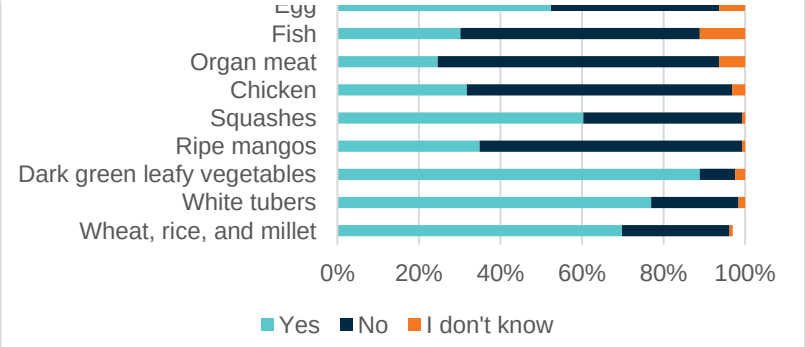
Affordability considers both household's perceptions of the price of food and their food purchasing power. On average, households reportedly spend 1,911 INR per week on food. This is significantly lower for tribal respondents (953 INR) compared to nontribal respondents (2,811 INR). It should be noted that approximating household food expenditure is difficult and often unreliable; therefore, the numbers provided here should be used as an approximation to provide a general sense to the program design team and not definitive. Figure 2 illustrates how households perceive the price of food items and whether they think they have the resources to purchase that food item on a regular basis. The majority of foods were considered moderately priced or expensive, apart from dark green leafy vegetables and white tubers. Staple grains, animal-source foods, vitamin-A rich fruits and vegetables were considered to be expensive or moderately priced.

Figure 2: Perceived affordability of food groups: Do you think X food group is cheap, moderately priced, or expensive?



However, households felt that foods were still attainable and that their household had the resources to purchase them, despite considering most foods to be expensive (see Figure 3). For example, sixty-seven percent of respondents felt that wheat, rice, and millet are expensive however, seventy percent of respondents felt that their household had the resources to purchase these food items on a regular basis. This is likely due to the frequency in which staple grains are consumed and are therefore a required purchase. However, for food items that are not staple food, this may not be the case. In comparison to other food items, less respondents felt that their household had the resources to purchase animal source foods and vitamin-A rich fruits and

Figure 3: Perceived affordability of food groups: Do you believe your household has the resources to purchase X food group on a regular basis?



vegetables. For example, seventy-nine percent of respondents felt that fish was expensive and only thirty percent of respondents felt that their household had the resources to purchase it on a regular basis. Positively, eighty-nine percent of respondents felt that they have the resources to purchase dark green leafy vegetables. Differences can be seen between tribal and nontribal respondents. Tribal respondents were more likely to perceive foods as expensive, which was the case for all foods except for rice, wheat, and millet. For example, ninety-five percent of tribal respondents felt that chicken was expensive, compared to seventy-one percent of nontribal respondents. Households' perceptions of affordability are important to consider when deciding target food items for promotion with nutrition messaging.

Programmatic considerations: Programming can consider targeting food items that are considered affordable or that most households feel they can purchase that are nutrient-rich and not consumed as frequently as would be desirable for nutrition. For example, dark green leafy vegetables are considered affordable by an overwhelming proportion of respondents but only roughly fifty percent of households are consuming it at least once weekly. Additionally, the cost of the diet analysis determined that pulses, like peanut, bengal gram, and red gram, are strong sources of macro- and micronutrients (e.g., protein, fat, niacin, folic acid, iron, magnesium, and zinc) and that households feel that they have the resources to purchase them on a regular basis. However, a small proportion of households are consuming these pulses on a daily basis. Alternatively, the project can aim to alter the value households place on a food item and move the dial on households feeling they can purchase a target, nutrient-rich food item, like animal-source foods. Animal-source foods, like eggs, were foods that were an important part of a nutritious diet that was affordable based on current wages.

Accessibility

For accessibility, the research team considered how households are procuring foods and the associated time and distance procurement takes. It is evident from the focus group discussions that the surveyed tribal communities rely more on their own food production, while the nontribal communities rely more heavily on purchasing food items. Participants in the tribal group said they produce all of what they eat except for milk, eggs, meat, fish, oil, spices, and sometimes rice. This can be compared to the nontribal groups which said that they purchase all of their foods except rice, peanuts, bananas, and some dark green leafy vegetables. These food purchasing behaviors may in part explain why the weekly food expenses of nontribal respondents was roughly triple the amount as their tribal counterparts. Nonetheless, roughly ninety percent of participants in both groups are frequenting the market or kiosks at least once a week to buy food. FGD participants in both groups cited accessibility, time and distance, it takes to procure foods as a barrier to consuming more nutritious and desirable foods. Sixty-six percent of household survey respondents are spending at least thirty minutes to get foods. Furthermore, fifty-four percent of tribal respondents reported that they are traveling greater than two hours to get to the market. In the tribal areas it was reported that it is the woman's responsibility to procure foods and that men will get larger, bulkier items at times, like rice. In the nontribal areas, women are responsible for procuring daily food items, like vegetables, and men procure the larger food items or items that are cheaper to get in the nearby city.

Programmatic considerations: Improving the accessibility of foods can decrease the amount of time and energy spent procuring foods, particularly for women. Making nutritious foods more available in the villages, especially for the tribal communities can help decrease barriers of procuring nutritious foods. Foods that are locally available, either from local production or brought in from a larger market, supports improved accessibility, since the food is readily available in the space that people move in.

Desirability

It is important to consider the types of foods households desire and if there are sociocultural norms around foods when designing nutrition-sensitive programming. Focus group participants in both groups expressed their desire to consume meat, fish, eggs, dairy products, vegetables, sweets and desserts, and prepared foods more frequently. The reasonings for not consuming these foods more frequently included price, availability, and time it takes to prepare the desired foods. For example, one participant in the tribal area noted, “fish is only available once a week, when the market happens”. On the other hand, respondents noted that rice, heavily liquid based dishes (like rasam), and bland foods are not desirable. Interestingly, these foods are considered not desirable because households associate them with food insecurity.

The focus group discussions illuminated that there are sociocultural taboos against foods for women and children, particularly for nutritious food items. Foods that are considered to be warm foods, like papaya, pineapple, mango, sesame, pumpkin, chicken, peanuts, and lentils, and foods that come from the ground, like tubers, are not supposed to be consumed when women are pregnant, according to local sociocultural norms. There are perceptions that these foods cause body heat, which can cause discomfort or miscarriages, or that children can have speech problems when born. Children are subject to these sociocultural norms as well, but to a lesser degree. Some FGD participants noted that fish and meat can be too difficult for children to eat or that fish bones are bad for children.

Programmatic considerations: Positively, households desire to consume foods that are more nutritious, like vegetables and animal-source foods. Reducing associated barriers with these foods, including price, availability, and convenience, could help increase purchasing and consumption of these food items. Depending on the foods that the project designs programming around, there may have to be consideration of local sociocultural norms, particularly for animal source foods for pregnant women.

Convenience

The relative convenience of a particular food item or dish is important to consider when deciding which foods can be promoted and their associated barriers. Time spent preparing foods is high for women in both regions – seventy-three percent of household survey respondents spent an average of two to four hours preparing foods a day (see table 4). Additionally, the time it takes to prepare foods was cited as a barrier to consuming them on a regular basis. For example, one respondent in the nontribal group said, “if we want to have spinach, we have to wash and pluck each leaf off the stem at night, so that it is ready for the morning for cooking”. Focus group discussion participants noted that dark green leafy vegetables and prepared dishes that are desirable to consume, like millet balls, are time consuming and therefore prepared less often.

Table 4: Average time women spend per day preparing foods

	30-60 min	60-120 min	2 hours	3 hours	4 hours
Whole group:	7.14%	19.84%	51.59%	18.25%	3.17%
Tribal:	9.83%	24.59%	49.18%	14.75%	1.64%
Nontribal:	4.62%	15.38%	53.85%	21.54%	4.62%

Programmatic considerations: The time and energy it takes to prepare foods should be considered when designing nutrition activities and electing nutritious foods to promote. In the project areas, women have high time burdens and nutrition behaviors promoted by the project should not unduly add to those time burdens. If the project selects nutritious foods to promote, the project should consider if the food item is time consuming to prepare and if there are opportunities to make it more convenient if it is time consuming. For example, for dark green leafy vegetables the project could work with kiosk food vendors to sell value-added greens that have the stems already plucked.

Household Gender Dynamics Related to Food

It is important to consider how decisions are made around what the household consumes, who is responsible for paying for the food, who is responsible for procuring the foods, and allocation of food within the household. Based on the household surveys, women taking the full decision about what the household consumes was the most common, followed by only men, mostly men, mostly women, and 50/50/share the decision equally (see table 5). In the focus group discussion, participants were asked to respond to the following scenario: If a woman wants to buy a food the household typically does not purchase and consume, can she do this on her own or does she have to consult anyone? Responses differed between the nontribal and tribal focus group discussions. Nontribal participants said that they will have a discussion about the food but that if women want to prepare it, they will and can make it. The tribal participants said that there would be a discussion but that it is important to get her spouse's approval because he will be responsible for procuring the food. A few participants mentioned asking female elders for their advice in both of the research areas. Interestingly, responses from the male focus group discussions suggested that women are responsible for making the decision about what the household eat but that the husband can suggest a food and it will be made. One participant said, ""if my wife wants it, I won't say no, especially if it's a new food or dish". The money used for purchasing food was overwhelmingly reported to be from the "pooled household money". However, some participants noted that the women will purchase small, daily food items and the men will purchase the larger, staple food items, which results in the men paying slightly more.

Table 5: Responsible Persons in Decision-making for food purchasing and consumption in the household

	50/50	Mostly Female	Mostly Male	Only Female	Only Male
Whole group:	11.11%	8.73%	17.46%	43.65%	19.05%
Tribal:	6.56%	11.48%	6.56%	52.45%	22.95%
Nontribal:	15.38%	6.15%	27.69%	35.38%	15.38%

Food allocation, including quantity and diversity of foods, was incorporated in both the household surveys and focus group discussions. As can be seen in Table 6., nineteen percent of female survey respondents noted that women get lesser quantities of food in their household compared to men and thirty-three percent reported that women have less variety of foods compared to men. Female youth (15-29 years old) were more likely to receive less diverse foods than non-youth women, where 48% of youth said they receive less diverse foods in their household compared to 29% of non-youth women. There are clear differences between the tribal and nontribal areas, where nontribal areas seem to have greater inequal distribution of foods between men and women in the household. The majority of responses in the focus group discussions were that there are no differences in food distribution between men and women. However, some noted that they will serve the men first or serve them more of a certain food item to show their affection or because men need more energy. One participant noted "we give it to men and boys because we want them to be strong and healthy". This discussion was only prevalent in the nontribal focus group discussions. One respondent in the tribal area said "used to happen in olden days, not now" when referring to unequal distribution of food

Table 6. Food Allocation between Men and Women

	Do women consume less quantity of foods in your household?		Do women consume less variety of foods in your household?	
	Yes	No	Yes	No
Whole group:	19.05%	80.95%	33.33%	66.67%
Tribal:	13.11%	86.89%	22.95%	77.05%
Nontribal:	24.62%	75.38%	43.08%	56.92%

between men and women. It is apparent that although the majority of respondents self-reported that there is equal distribution in their household, a large percentage of households still do not have equal distribution of foods, which can be detrimental to women's nutrition and health.

Programmatic considerations: It will be important to consider the target audience of nutrition activities for the project and how decisions around food are made. If the project aims to promote a nutritious food item that is not frequently consumed, it appears that women, men, and elders will be important decision-makers, particularly women. In considering how food is purchased, if the project promotes purchasing of a food item that is available in the local village and is considered a daily food item, such as vegetables, then women will be the primary purchasers of the food item. If it is a food item available in secondary markets, such as staple grains, men will be the primary purchasers. Food allocation should be considered as a focal area of the project, considering that roughly thirty percent of surveyed household have unequal food distribution between men and women. This is particularly important in the nontribal areas and among female youth.

Value of Nutrition and Nutrition Information

The research team wanted to investigate households' knowledge and value of nutrition and where they have been receiving information about nutrition. Participants in the focus group discussions noted that they did not feel as if they knew about nutrition or that it is something they consider when making decisions about foods to eat. This was especially prevalent among the participants from tribal areas. However, participants referenced that they know some foods are "good" and some are "bad" and that they try to consume more of these foods. The following foods were considered to be nutritious by focus group discussion participants. Positively, listed foods are nutrient-rich foods.

- Tribal group: pineapple, all foods that come from non-fertilizer crops, leafy vegetables, lentils, millets, other vegetables, brown rice, country chicken, fruits
- Nontribal group: chicken (but not during COVID), leafy vegetables, other vegetables, peanuts, chickpea, lentils, meat, eggs, millet, porridge

Participants in the nontribal areas referenced that they have received nutrition information, focusing on maternal and child nutrition, when they were pregnant from the integrated child development scheme (ICDS) in their village. Only one of four FGDs in the tribal area mentioned ICDS and the rest said they had not received any information on nutrition. However, they noted that educated members in the household, particularly kids, can provide information on nutrition. Positively for nutrition-sensitive programming, all participants in the FGDs noted that they would be interested in learning about nutrition and would trust information from agro-vet input or service delivery providers and/or through their FPO.

Recommendations

The food environment analysis provided several insights for the AFPRMP II team to consider in designing nutrition-sensitive activities for the pilot areas. The below table provides high-level takeaways on the status of each analyzed food environment component and attempts to provide relative ratings of the health of each component (see footnote for color ratings).[6] Please note that these color ratings are subjective and are dependent on each other. For example, convenience is colored as a medium-high priority compared to desirability which is colored as a low priority, given the comparison between the two

[6] Red: high importance; orange: high-medium importance; yellow: medium importance; green: less importance

and comparison to the other analyzed components. These ratings are intended to provide direction to the team, as a basis for designing program interventions.

Table 1. Status of the Food Environment

Food environment component	Tribal area	Nontribal area
Dietary intake	Households are consuming a wide array of foods. However, nutrient-rich foods that can provide households 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.	Households are consuming a wide array of foods. However, nutrient-rich foods that can provide households with the necessary macro- and micronutrients are not consumed as frequently as could be desired, particularly for pulses, dark green leafy vegetables, curd, milk, and millet.
Availability	Food is adequately available at the peri-urban market is and households have availability from their own productions. However, vending of food in the village is uncommon.	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.
Price / Actual affordability	Nutrient-rich foods are relatively affordable for households given their self-reported incomes and food expenditures.	Nutrient-rich foods are relatively affordable for households given their self-reported incomes and food expenditures.
Perceived affordability	Households perceive nutrient-rich foods that could be leverage points for improved nutrition as expensive. However, households mostly believe that they have the resources to purchase an array of nutrient-rich foods.	Households perceive nutrient-rich foods that could be leverage points for improved nutrition as expensive. However, households mostly believe that they have the resources to purchase an array of nutrient-rich foods.
Accessibility	Households have a lot of foods from their own production that are available at the household, which improves accessibility. However, households, particularly women, spend a lot of time traveling to and from the market because foods are not available in the local market.	Accessibility is important for households, particularly for women, as they are purchasing foods on a daily basis for their cooking in that day. Positively, there are vendors present in the villages. Additionally, men's transit for livelihood or errand purposes allows them to readily access urban markets.
Convenience	Convenience is important for the preparation of foods. Women have already time burdens and foods that require a significant amount of time to prepare are not favored.	Convenience is important for the preparation of foods and was discussed significantly among this group. Women have already time burdens and foods that require a significant amount of time to prepare are not favored.
Desirability	Households desire to consume foods that are nutrient-rich (e.g., fruits, vegetables, animal-source foods).	Households desire to consume foods that are nutrient-rich (e.g., fruits, vegetables, animal-source foods). However, there is a desire to consume foods that are not nutritious (e.g., sweets and snacks).

Household gender dynamics	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. Additionally, women spend a lot of time cooking and acquiring foods, which adds to a high time burden.	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 the amount of foods and the types of foods consumed.
Nutrition knowledge and value	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.	Households 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.

Recommendations

There are opportunities to improve household dietary intake in both of the pilot areas. Households are consuming a wide variety of foods but there is a lack of regular consumption of nutritious food items that have been deemed as leverage points for improved nutrition. These foods include millet, pulses (peanut and bengal/red gram), dark green leafy vegetables (amaranth leaves), and animal-source foods (eggs, milk curd, milk). The frequency of consumption of foods for the foods recommended by the cost of the diet analysis were low (from the lowest at 0.79% of households consuming amaranth leaves on a daily basis to the highest daily consumption of a recommended food, which was dairy products at 77.78%). Additionally, there are opportunities to address the unequal distribution of foods in the household. The recommended target behaviors of the nutrition pilot are below:

- Consumption of nutrient-rich foods, particularly millet, pulses (peanut and bengal/red gram), dark green leafy vegetables (amaranth leaves), and animal-source foods (eggs, milk curd, milk)
    - Purchasing of targeted nutrient-rich foods
    - Adoption of food preparation techniques that do not add to time burden of women
- Equal allocation of foods (quantity and diversity) between all members of the household

Nutrition social and behavior change (SBC) targeting targeted behaviors

Social and behavior change activities can help promote the adoption of targeted behaviors, by supporting individuals and communities with relevant information, awareness, and confidence building, necessary for adapting their behavior and social norms. To address the aforementioned behaviors, the project can integrate social and behavior change best practices into ongoing activities or develop new SBC activities. For either of the approaches, messages and platforms for dissemination will need to be developed and identified to address the targeted behaviors.

Nutrition messaging integrated into ongoing activities: To address the above behaviors, the project can work within the ongoing activities to integrate nutrition messaging. This can include integration of nutrition messages into private sector input/service delivery actors' interaction with project households (where it fits their business model), integration of nutrition messaging into FPO trainings (e.g., not standalone sessions on nutrition but integrated throughout), and integration of nutrition messaging into relevant output market actors selling targeted nutrient-rich foods in the project area.

Addition of new SBC activities: In addition to the above activities, the project can also develop standalone SBC activities to address the targeted nutrition and intra-household food allocation behaviors. This will be particularly relevant if men are the primary participants in FPOs and women are not, as

women are important decision-makers for food purchasing and preparation and risk not being reached. Social and behavior change approaches should be rooted in formative research, to best understand community members' preferred platforms. Illustrative approaches include:

- FPO standalone training sessions on nutrition, where members can learn and discuss the targeted nutrition behaviors in a familiar group and by a familiar facilitator.
- Courtyard sessions, where households, particularly women, are targeted with discrete nutrition information by a trusted community facilitator. The ACDI/VOCA family has had success with courtyard sessions in Bangladesh, under the Livestock Production for Improved Nutrition Activity.
- To better target influencers in the community, who were identified as elders in focus group discussion, the project can facilitate dialogues with elders on the targeted behaviors and how they can support reaching project households with relevant information. Specifically, this can be relevant for combatting behaviors that may be more engrained in the socio-cultural norms, including unequal distribution of food in the household and food taboos for pregnant women.

Food vending and value-addition

Developing the actors involved in food vending and value-addition within the program areas can help support improved availability, accessibility, convenience, desirability (through nutrition knowledge/awareness development). There are a limited number of village-level actors involved in food vending and even less involved in value-addition. Supporting market actors, such as producer organizations and/or micro enterprises, to sell foods that are not readily available and/or that fill a convenience gap for households can help fill gaps in nutritious foods. Value-addition such as providing more convenient food products (e.g., cleaned and plucked dark green leafy vegetables) can help decrease the time burden associate with preparing the foods. Food vendors that do not provide value addition but that sell a target nutrient-rich food can help support knowledge transfer on preparation techniques that are not time burdensome. Support to market actors can include micro grants and training to the promising market actors that can fill these gaps.

These activities should be tied to the social and behavior change activities implemented by the project, which can help de-risk the producer organization/micro enterprise, by helping to develop the desire and demand for the target nutritious foods by local consumers.

Development of production systems around target nutrient-rich foods

The activity can help facilitate the development of agricultural and livestock subsectors that support the local production of nutrient-rich foods identified as leverage points. Developing local production can help improve local availability, accessibility, and affordability of targeted nutrient-rich foods. Support can be provided through the FPO so that members have the necessary agricultural and livestock technologies (e.g., vet and input supplies and services) and knowledge on how to produce the target food items. This should not be the approach for commodities that are not at all locally produced, as introduction of a new crop/livestock would be difficult to achieve within the timeline of the project. Rather, the project can help support productivity of commodities already produced within the target region. Messaging relating to how the production of the targeted commodity can improve household nutrition should be integrated into input/service delivery and into trainings, where appropriate, as households reportedly value nutrition.

Household food allocation and food preparation practices

Unequal distribution of food preparation work and unequal food distribution contributes to high time burdens of women and inadequate dietary intake of important nutrient-rich foods (in comparison to the men within their household). It is suggested the project target these behaviors. Social and behavior change activities have been suggested above for addressing these two target behaviors. It will be

important that both men and women are targeted with the social and behavior change activities regarding household food allocation so that both partners understand the importance of the behavior and can support it and reduce the risk of household dispute/violence over disagreements.

In addition to SBC, it will be important for the program to focus on increasing women's economic opportunities, especially among female youth, as increased income generation can support increased women's empowerment and decision-making power in the household. Studies have shown that increased income and empowerment of women is correlated with an increase in dietary diversity.[7][8] Additionally, depending on the scope of the gender and social inclusion component, the project could investigate the implementation of couple's support activities to promote shared decision-making, including decision-making on food allocation.

[7] Sraboni E and Quisumbing A. 2018. Women's empowerment in agriculture and dietary quality across the life course: Evidence from Bangladesh. Food Policy 81, 21-36.

[8] Alessandra Galiè, Nils Teufel, Amy Webb Girard, Isabelle Baltenweck, Paula Dominguez-Salas, Mindy J. Price, Rebecca Jones, Ben Lukuyu, Luke Korir, IlanaG. Raskind, Kristie Smith, Kathryn M. Yount. Women's empowerment, food security and nutrition of pastoral communities in Tanzania, Global Food Security, Volume 23, 2019,

Annexes

Annex 1: Household's Perception of the Price of Foods							
		Do you think X food is cheap, moderately priced, or expensive?			Do you think your household has the resources to purchase X food?		
		Cheap	Moderately Priced	Expensive	Yes	No	I don't know
Wheat, rice, and millet	Whole	11.90%	20.64%	67.46%	69.84%	26.37%	0.79%
	Tribal	18.03%	22.95%	59.02%	78.69%	21.31%	0%
	Nontribal	6.15%	18.46%	75.38%	61.54%	36.82%	1.54%
White tubers	Whole	2.38%	57.73%	38.89%	76.98%	21.43%	1.59%
	Tribal	3.28%	52.46%	44.26%	73.77%	24.59%	1.64%
	Nontribal	1.54%	64.62%	33.85%	80.00%	18.46%	1.54%
Beans and legumes	Whole	2.38%	42.06%	55.56%	68.25%	20.95%	0.79%
	Tribal	0%	42.62%	57.38%	68.85%	31.15%	0%
	Nontribal	4.62%	41.54%	53.85%	67.69%	30.77%	1.54%
Dark green leafy vegetables	Whole	30.16%	58.73%	11.11%	88.89%	8.73%	2.38%
	Tribal	19.67%	65.57%	14.75%	90.16%	6.55%	3.28%
	Nontribal	40.00%	52.31%	7.69%	87.67%	10.77%	1.54%
Ripe mangos	Whole	0.79%	14.29%	84.92%	34.92%	64.29%	0.79%
	Tribal	1.64%	6.56%	91.80%	22.95%	77.05%	0%
	Nontribal	0%	21.54%	78.46%	46.15%	52.31%	1.54%
Squashes	Whole	0%	40.48%	59.52%	60.32%	38.89%	0.79%
	Tribal	0%	27.87%	72.13%	57.38%	40.98%	1.64%
	Nontribal	0%	52.31%	47.69%	63.08%	36.92%	0%
Chicken	Whole	0%	17.46%	82.54%	31.75%	65.08%	3.17%
	Tribal	0%	4.92%	95.08%	21.32%	75.41%	3.28%
	Nontribal	0%	29.23%	70.77%	41.54%	55.38%	3.08%
Organ meat	Whole	0%	7.14%	92.86%	24.60%	69.05%	6.35%
	Tribal	0%	1.64%	98.36%	16.39%	77.05%	6.56%
	Nontribal	0%	12.31%	87.69%	32.31%	61.54%	6.15%
Fish	Whole	1.59%	19.84%	78.57%	30.16%	58.73%	11.11%
	Tribal	1.64%	16.39%	81.97%	39.34%	60.66%	0%

	Nontribal	1.54%	23.08%	75.38%	21.54%	56.92%	21.54%
Egg	Whole	2.38%	19.05%	78.57%	52.38%	41.27%	6.34%
	Tribal	0%	19.67%	80.33%	49.18%	50.82%	0%
	Nontribal	4.62%	18.46%	76.92%	55.38%	32.31%	12.31%
Dairy	Whole	4.76%	21.43%	73.81%	46.35%	39.68%	3.97%
	Tribal	1.64%	9.84%	88.52%	32.79%	59.01%	8.20%
	Nontribal	7.69%	32.31%	60.00%	78.46%	21.54%	0%

Annex 2: Average price of Commodities in Surveyed Markets			
	Tribal	Nontribal	Quantity
Food Items	Price (INR)	Price (INR)	
Rice	36.33	42.5	1 Kg
Wheat	49.67	30.45	1 Kg
Millets	30.00	NA	1 Kg
Lentils	84.00	NA	1 Kg
Chickpeas	66.67	NA	1 Kg
Green Gram	103.67	NA	1 Kg
Black gram	85.00	NA	1 Kg
Bengal Gram	62.00	86.11	1 Kg
Red gram	NA	89.17	1 Kg
Cashews	576.67	NA	1 Kg
Peanuts	99.00	90.00	1 Kg
Eggs	4.50	5.25	1 egg
Milk / yogurt	9.73	10.94	200 ml
Milk curd	NA	12.30	200 ml
Chicken	86.67	117.50	1 kg
Mutton	600.00	NA	1 kg
Spinach	27.75	20.83	1 kg
Gongura	27.75	17.96	1 kg
Amaranth leaves	38.85	16.67	1 kg
Fenugreek	122.47	20.11	1 kg
Drumsticks	4.67	NA	1 Pc
Papaya	NA	NA	NA
Cantaloupe	6.67	NA	1 kg
Carrot	40.00	30.00	1 kg
Pumpkin	43.33	NA	1 kg
Red/ Green pepper	60.00	NA	1 kg
Sweet Potato	30.00	NA	1 kg
Egg plant	30.00	20.00	1 kg
Okra	46.67	15.83	1 kg
Potato	25.00	35.00	1 kg
Tomato	15.00	10.28	1 kg
Green beans	40.00	NA	1 kg
Green peas	53.33	NA	1 kg
Beetroot	43.33	NA	1 kg
Orange	53.33	NA	1 kg
Broad beans	NA	10.00	NA
Bitter goard	NA	20.00	NA
Green chillis	NA	16.25	NA
Chikkudu	43.33	NA	1 kg