



ADDENDUM REPORT:

Cost of the Diet Dry Season Assessment

in livelihood zones:

LR02 North Central Rice with Cassava and Market Gardens

LR04 Coastal Plain Cassava with Rice and Inland Fishing

for

The Liberia WASH Consortium Project

April 2020



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Acronyms

CoD – Cost of the Diet

CHO – Carbohydrate

EO – Energy only diet

FGD – Focus group discussion

FHAB – Food habits nutritious diet

HEA – Household Economy Analysis

HH - Household

IEC – Information, education, communication

KII – Key informant interview

LRD – Liberian dollars

LWC – Liberia WASH Consortium

MNP – Micronutrient Powder

NFE – Non-food expenditure

NGO – Non-governmental organisation

NUT – Micronutrient ‘nutritious’ diet

RNI – Recommended nutrient intake

1. Introduction

Building upon the 2019 Cost of the Diet (CoD) assessment, Concern Worldwide (CWW) and the Liberia WASH Consortium commissioned a dry season assessment to be conducted in the same markets where data was collected during the first assessment (rainy season). This addendum report, along with the 2019 Liberian CoD assessment, Nutrition Causal Analysis and Barrier Analysis, is intended to inform the development of a social behaviour change communication framework and strategy to address the identified causes of child stunting, and promote its adoption across different and future program.

Assessment purpose

The purpose of the assessment was identify seasonal differences and provide a more thorough understanding of the availability and cost of nutritious foods, helping to better understand the causes determining sub-optimal feeding and to explore the acceptability and economic feasibility of identified options to improve consumption of nutritionally diverse foods of households in the studied communities, e.g. information available for decision making on the timing of potential interventions.

Specific objectives:

1. To estimate cost, affordability and economic appraisal of the options, including value for money.
2. To explore the acceptability of options and compare and contrast them according to potential impact, likelihood of success and risk.
3. To recommend what foods should be considered when developing recipes for complementary feeding and pregnant mothers.
4. To understand the correlation between market price and seasonal availability of various foods and its effect on the different potential CoD nutritious diets.
5. To provide information and data to better assess the effect of micronutrient powder (MNP) on nutritious diet cost and affordability (e.g. reduced annual cost of a nutritious diet for the household and the child by introduction of MNP for children 6-23 months).

2. Methods

2.1 Cost of the Diet method and software¹

Developed by Save the Children, the CoD methodology and software estimates the combination and amount of locally available foods needed to provide either individuals or a household with enough food to meet their average energy and recommended intakes of protein, fat and micronutrients (Deptford et al., 2017). The analysis can estimate the hypothetical minimum amount a typical household would need to spend on recommended intakes of energy, protein, fat and micronutrients using foods available in local markets. The menu driven CoD software allows linear optimization programming to select locally available foods that meet World Health Organization-recommended nutrient requirements at the lowest cost possible. The following three standard CoD diets were analysed for both the 2019 and 2020 Liberian assessments:

Energy-only diet (EO) meets recommended intake for energy for the household, but does not account for required protein, fat and micronutrients. This diet is useful for illustrating the potential for micronutrient deficiencies when only energy is provided in a diet and the extra cost required to meet all recommended nutrient needs.

Micronutrient ‘nutritious’ diet (NUT) meets recommended intakes for energy, protein, fat and all micronutrients for a specific individual or household at the lowest cost. This diet is useful when considering the additional cost of meeting micronutrient needs by using local foods to create a nutritious diet, but often in unrealistic quantities.

Food habits nutritious diet (FHAB) applies a minimum and maximum number of times a food is consumed per week, also known as “constraints”, using data collected from key informant interviews (KII) and focus group discussions (FGD). This diet most closely reflects the typical dietary habits of the examined population and is helpful

¹ Additional information can be found on the HEA- COD website (<https://www.heacod.org>)

for highlighting the additional cost of meeting average energy and recommended nutrient intakes (RNI) by considering normal dietary habits, such as typically consumed staple foods, food frequency and food taboos.

2.2 Data collection

Data collection took place over 8 working days and was led by Concern’s Quality and Accountability Supervisor. The assessment was supported remotely by the independent CoD Consultant who conducted the 2019 assessment in Liberia. The scope of the assessment was agreed by the Consultant and the Program Director to ensure that all the collected data and analysis captured the information required of the assessment. Concern recruited 6 local Data Collectors from the 2019 CoD team for the refresher training and data collection period.

Locations

Market surveys were conducted in 13 markets across the three livelihood zones: four markets in LR02 (2 in Grand Bassa, 2 in Rivercess), seven markets in LR04 (4 Grand Bassa, 3 Rivercess) and two markets in LR08 (2 Margibi) (see Annex 1). The plan was to survey 21 of the 23 visited markets from the 2019 assessment over 14 data collection days². For 10 of the data collection days, two markets were planned to be visited (two teams at medium-sized markets and one team at small markets) and on four of the collection days all three teams were planned to visit the largest markets. However, the arrival of Coronavirus-19 in Liberia and subsequent government action to restrict non-essential travel resulted in Concern’s decision to halt data collection on the 20th March 2020, with approximately 62% of data collection completion.

Market surveys

Market survey data collection sheets were used to record the price and weights of food items found in the assessment area across the identified seasons. The same list of available food items created in the November 2019 was used for the dry season assessment and missing items were added throughout the data collection period. The price of each food item was recorded for the current season (dry) to estimate the total annual cost of the diet. Retrospective pricing data was not collected, as wet (rainy) season data was collected in October-November 2019.

2.3 Estimating affordability of the diet

This assessment report has used the same annual household income (Liberian LDR) figures from the 2007 Household Economy Analysis (HEA) report from Bomi county (Save the Children) that were used to estimate the affordability of the Liberian diet in 2019. However, this addendum report used both the 2019 inflation-adjusted income (261.3%) and 2020 inflation-adjusted income (346.4%) to analyse the affordability of the diet (Trading Economics, 2019). The same average (26.35%) was used to calculate non-food expenditure (NFE) – essential outgoings incurred by a household, like medical expenses, school fees, rent - for LR02 and LR04 for both years.

Table 1: 2006 Annual household income, 2019 and 2020 adjusted annual household income and non-food expenditure as a percentage of income for very poor, poor, middle and better off wealth groups

Annual Household Income	October 2005 - September 2006			
	Very Poor	Poor	Middle	Better off
2006 - Annual Income (LRD)	17,000.00	25,000.00	58,000.00	80,000.00
2019 - Adjusted annual Income (LRD) (261.3%)	61,416.34	90,318.14	209,538.09	289,018.05
2019 - % Non-food expenditure (26.35% AVG)	16,183.21	23,798.83	55,213.29	76,156.26
2020 - Adjusted annual Income (LRD) (346.4%)	75,886.02	111,597.09	258,905.26	357,110.70
2020 - % Non-food expenditure (26.35% AVG)	19,995.97	29,405.83	68,221.54	94,098.67

2.4 Limitations

In addition to those mentioned in the 2019 Liberian CoD assessment report, including software and lack of recent income and expenditure data, the following limitations should be known before reading the 2020 Liberian dry season CoD assessment results:

² Due to market availability (markets only running on specific days), only 9 of the original 11 LR04 markets were planned to be visited.

Data limitation

A traditional CoD assessment aims to capture data from a minimum of six markets in order to ensure a representative sample of the area. Due to the Covid-19 arrival, it was not possible to visit all planned markets, which meant that data was only collected at four markets in LR02, North/Central rice with cassava & market gardening, and two markets in LR08, Rubber & Charcoal with Food Crops. After consultation between Concern and the Consultant, it was agreed that LR02 would be analysed using the collected data and that LR08 would not be analysed due to insufficient data. Therefore, readers are advised to exercise caution when using the results from LR02.

Software limitation

In addition to the dry season (actual) data collected during this March 2020 assessment, data collected in November 2019 data (rainy season actual and dry season retrospective) was used to analyse the real cost of the diet, seasonal changes and impact of the potential of a MNP intervention. Through this analysis, a CoD system error (core coding issue) was identified, as the EO, NUT and FHAB diets created for LR04 did not include one of the “free/wild” foods (cabbage) set at a zero cost, which was selected by the software in the 2019 assessment. This resulted in a change to the LR04 rainy season diet summaries and slight increase in 2019 rainy season figures for the same zone.

3. Results

The results in this addendum report are presented by livelihood zone, including discussion on the availability of foods in local markets, cost, affordability and seasonality of the three standard diets (EO, NUT, FHAB). All costs are calculated in Liberian dollars (LRD). A conversion rate of 197.51 LRD to 1 USD³ was used for the analysis.

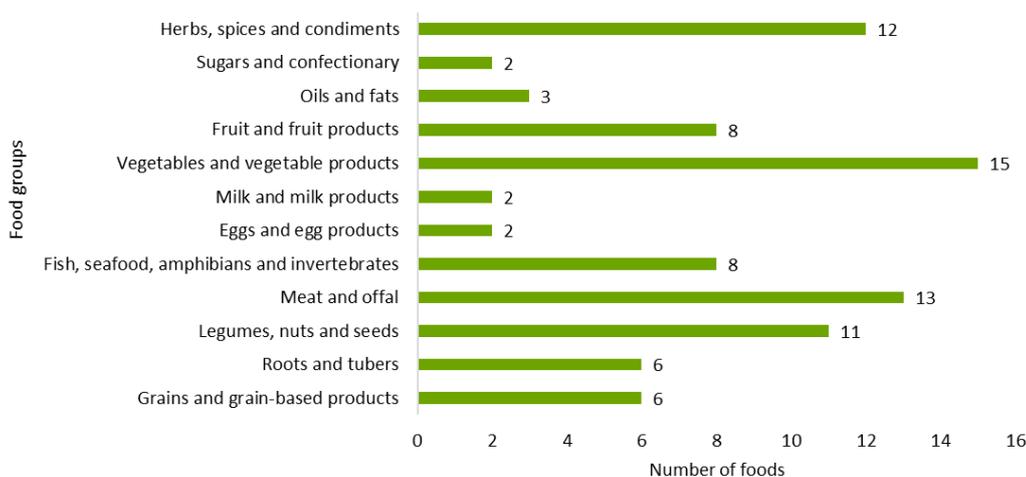
It is important to note that the nutritious diet produced by the CoD software includes items that were only found in one or two markets. This is to illustrate the most basic cost of a nutritious diet using local foods. For the food habits nutritious diet, however, foods found in less than three markets were excluded from analysis, to include only food items that are more readily available. As well, information on local consumption patterns and habits from 2019 KIIs allowed the software to select most culturally appropriate foods to produce a more realistic FHAB diet.

3.1 LR02 North/Central Rice with Cassava and Market Gardening

Availability of foods in the local market

The data collection team collected price and weight data for 88 foods in four markets within Grand Bassa (2 markets) and Rivercess (2 markets) counties across the LR02 North/Central Rice with Cassava and Market Gardening zone. This is roughly the same number of foods as found in rainy season (89), however the food items found in the markets have changed slightly due to change in season. Figure 1 presents the number of foods found by food group across the zone: 6 grains and grain-based products, 6 roots and tubers, 11 legumes, nuts and seeds, 13 meat and offal, 8 fish, seafood, amphibians and invertebrates, 2 egg and egg product, 2 milk and milk products, 15 vegetables and vegetable products, 8 fruit and fruit products, 3 oils and fats, 2 sugars and confectionary, and 12 herbs, spices and condiments.

Figure 1: The number of food items from each food group found in LR02 markets



and vegetable products, 8 fruit and fruit products, 3 oils and fats, 3 sugars and confectionary, and 12 herbs, spices and condiments. A detailed food list, including the average price per 100g in the rainy and dry seasons, annual price average, percentage seasonal change from 2019 rainy to 2020 dry, variation between retrospective

³ Exchange rate as of 4 April 2020 found on: <https://www.xe.com/currencyconverter/convert/?Amount=1&From=USD&To=LRD>

dry season data for 2019 and actual dry season data for 2020, and percentage variation from 2019 dry season to 2020 dry season can be found in Annex 2.

The number of foods found in each of the LR02 markets can be found in Annex 3, by food group. More food items were available in the smaller, “village”, markets in the dry season rather the rainy season (< 40 items), likely due to improved road access. Bodowhea (41), Boegeezay (46) and Leuwin (47) each had less than 50 items, reflecting their smaller, “village” level market composition. With almost 70 food items, St. John’s is reflective of a small-town market, with more wholesale trader attendance. It is important to note:

- Fresh and boiled eggs were found *only at* St. John’s market; no eggs found at other markets
- No fresh milk was found in LR02
- No milk and milk products were found in Leuwin and Bodawhea
- Only one milk or milk product was found in Boegeezaye

Seasonal food availability

Although the number of foods found in LR02 markets was almost the same for both seasons, there were changes to the available food items. Foods found in markets only during the 2020 dry season included: country beans (pinto beans), purple sweet potato, cow bone, cow tongue, gazelle, small dried fish, snail (African land snail), butter pear (avocado), guava, pineapple, ginger root. Foods found in markets only in the 2019 rainy season included: corn meal, eddoes (cocoyam), peanuts with shell, cooked chicken thigh with skin, dried catfish, breadnut, cucumber, fever leaf, gblafee leaf, water greens, lemon (tangerine), orange and tomato.

The cost of the diets

A summary of the cost of the three diets (EO, NUT, FHAB) calculated by the CoD software for LR02 in presented in Table 2 below. Like the 2019 rainy season CoD assessment, nutritional requirements for each diet can be met by locally available foods. The annual cost of a nutritious (NUT) diet remains at three times the cost of an energy-only diet, confirming the high cost of meeting fat, protein and micronutrient requirements rather than only meeting energy needs. The food habits nutritious (FHAB) diet costs 10% more than the NUT diet. The same key informant interview data collected during the 2019 assessment was used to determine minimum and maximum weekly food constraints in order to reflect realistic dietary habits and produce the FHAB diet results.

Table 2: Summary of the daily diet cost for rainy and dry seasons, average daily cost and annual cost (LRD and USD) of each diet for an average household of 5 in LR02 North/Central Rice with Cassava & Market Gardening

Energy only (EO)	5	Yes	133.30 (0.68 USD)	110.81 (0.56 USD)	125.23 (0.63 USD)	45,709.01 (231.43 USD)
Nutritious (NUT)	5	Yes	366.40 (1.86 USD)	388.11 (1.97 USD)	374.19 (1.89 USD)	136,579.64 (691.51 USD)
Food habits nutritious (FHAB)	5	Yes	378.37 (1.92 USD)	464.29 (2.35 USD)	410.75 (2.08 USD)	149,923.69 (759.07 USD)

LR02 Energy-only (EO) diet

The average cost of an energy-only diet for an average household of 5 within zone LR02 was 125.23 LRD per day and 45,709.01 LRD annually. The daily cost during the rainy and dry seasons were 133.30 LRD and 110.81 LRD, respectively. The 2020 EO dry season average daily cost is 1.4 times higher than the 2019 assessment reported retrospective price (77.80 LRD) for the 2019 dry season. Table 6 in Annex 4 shows that only six foods, including breadnuts, breast milk for infants, cassava root, coconut, fufu and red oil, are needed to meet the energy requirements for an average CoD household. The EO diet only meets energy (100%) and vitamin C (188%) requirements, but does not meet RNIs for protein (53%), fat (51%), vitamin A (21%), vitamin B1 (14%), vitamin B2 (17%), niacin (18%), vitamin B6 (27%), folic acid (27%), vitamin B12 (5%), calcium (18%), iron (12%) and zinc (26%).

LR02 Micronutrient nutritious diet (NUT)

The lowest average cost of a nutritious diet for an average household of 5 within zone LR02 is 374.19 LRD per day and 136,579.64 LRD annually. The average daily cost during the rainy season was 366.40 LRD, while the average daily cost during the dry season was 388.11 LRD per day. All RNIs are met through the NUT diet, however Table

7 Annex 4 demonstrates that fat (109%), niacin (109%), vitamin B12 (100%) and iron (107%) are just reaching or over the 100% target, which indicates that these are the hardest nutrients for the NUT diet to meet using locally available foods. The NUT diet produces a *hypothetical diet* that meets all RNIs but is not necessarily account for typical consumption patterns and dietary habits. This NUT diet has included 17 food items for a typical household of 5 for one year, including large quantities of cassava (759 kg) and sweet potato leaf (372 kg).

Most of the fat in the NUT diet is provided by coconut (74.5%), breast milk (7.1%), bony fish (4.5%) and red oil (4.2%). Niacin is provided by a more diverse range of foods, including cassava (19.2%), bony fish (18.9%), sweet potato leaf (14.2%), palava sauce (9.6%), country rice (9.4%), fever leaf (8.7%) and purple sweet potatoes (5.9%). Vitamin B12 in this diet is provided by only two of the selected food items - bony fish (60.6%) and snail (34.1%). Finally, iron is mostly found in three leafy greens, including sweet potato leaf (23.7%), palava sauce (15.8%) and fever leaf (13.9%), and cassava (9.4%), coconut (9.2%), breadnut (8.7%) and bony fish (6.7%). Rainy and dry season diet summaries can be found in Tables 8 and 9, Annex 4, respectively, for further information.

LR02 Food habits nutritious (FHAB) diet

The food habits nutritious diet is a more realistic hypothetical diet that uses data collected through KIIs to select foods that reflect local habits and food consumption patterns. The LR02 FHAB diet contains 23 of the 88 foods found in the four visited markets. The average cost of the LR02 FHAB diet for an average household of 5 is 410.75 LRD per day and 149,923.69 LRD per year. The daily cost during the rainy season is 378.37 LRD, whilst the daily cost for the dry season is 464.29 LRD.

Table 10 in Annex 4 presents the foods included in the annual FHAB diet, cow bone, cow tongue, gblafee leaf, butter pear (avocado) and snail were prevented from being selected as they were only found in one market each. The FHAB diet has adjusted the quantity of raw cassava from 759 kg in the NUT diet to 508 kg and selected three other commonly consumed roots and tubers (fufu, purple sweet potato, yellow sweet potato) as replacement.

Fat (102%), vitamin B12 (100%) and iron (105%) are the limiting nutrients in the FHAB diet, which are driving up the cost. Most fat in this diet is provided by coconut (49.6%), palm kernel oil (14.8%), breast milk (7.6%), benny seeds (6.4%) and bony fish (4.7%). Vitamin B12 comes mainly from by bony fish (59.6%), canned sardines (34.1%) and breast milk (5%). Again, iron is mostly provided by leafy greens, including sweet potato leaf (24.2%), palava sauce (18.2%), fever leaf (11.6%), and bony fish (6.8%) and coconut (5.9%). Rainy and dry season FHAB diet summaries can be found in Tables 11 and 12, Annex 4, respectively, for further information.

Seasonal variation in the diet

Table 3 illustrates the seasonal variation in foods selected by the software for nutritious and food habits nutritious diets. Table 9, Annex 4 shows that snail represents 95% of vitamin B12 and 26.9% of zinc in the dry season for the NUT diet. The snail was excluded (in red) from selection for the FHAB, as it was only found in one LR02 market. Sardines (canned in oil) have replaced snail in providing 95% of vitamin B12. Both diets select bony fish and catfish during the rainy season and switch to higher quantity of beans during the dry season: kpakutuweh (adzuki beans) for the NUT and butter beans, country beans and kpakutuweh for the FHAB diet. Kpakutuweh beans are selected for both seasons in the FHAB, with a higher quantity in the rainy season (29 kg) than the dry season (5 kg).

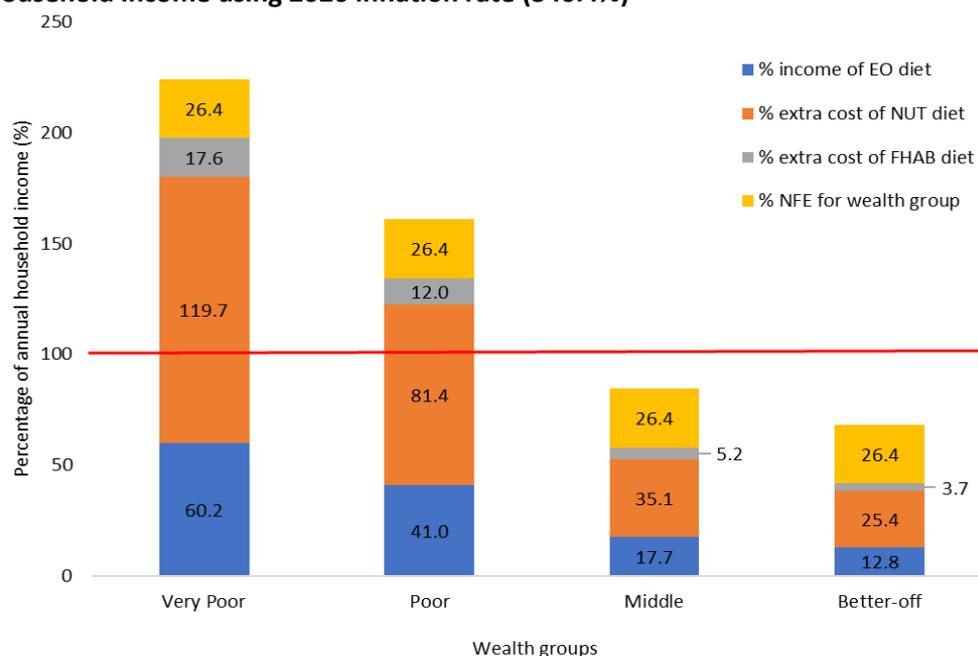
Table 3: Summary of the foods selected by the CoD software across the seasons (both, rainy, dry) in LR02

	BOTH SEASONS	WET (RAINY) SEASON	DRY SEASON
Nutritious (NUT) diet	Breast milk Cassava, raw Coconut Country rice (Brown rice) Fufu (Cassava, bread, fermented) Palava sauce, plato (Jute leaf) Red oil (Red palm oil) Sweet potato leaf	Benny seeds, dried, raw (Sesame seeds) Bony fish, fresh, raw (Mackerel fish, raw) Breadnut, raw or cooked Catfish, raw Fever leaf, raw	Kpakutuweh (Adzuki beans) Peas, yellow or green, dried, raw (Split peas) Purple sweet potato, raw Snail (African land snail) Yellow sweet potato, raw
Food habits nutritious (FHAB) diet	Agro oil (Vegetable oil) Benny seeds (Sesame seeds) Breast milk Cassava, raw Coconut Country rice (Brown rice) Fufu (Cassava bread, fermented) Kpakutuweh (Adzuki beans) Palava sauce, plato (Jute leaf) Palm kernel oil (Local palm oil) Red oil (Red palm oil) Sweet potato leaf	Bony fish, fresh, raw (Mackerel fish, raw) Breadnut, raw or cooked (Breadnut, raw) Catfish, raw Fever leaf, raw	Butter beans (Lima beans, dried) Country beans (Pinto beans, dried) Garri (Cassava root, dried meal) Peas, yellow or green, dried, raw (Split peas) Purple sweet potato, raw Sardines, canned in oil Yellow sweet potato, raw

The affordability of the diets

Figure 2 illustrates the results of an affordability analysis for LR02, using the 2020 inflation-adjusted income figures from the 2007 HEA. The graph shows the cost of each diet conveyed as a percentage of annual household income for very poor, poor, middle and better off wealth groups. The minimum cost of FHAB diet represents 198%, 134%, 58% and 42% of annual household income for the very poor, poor, middle and better off wealth groups, respectively. NUT and FHAB diets are unaffordable for both very poor and poor households. The middle and better off groups can afford a NUT and FHAB diet, including essential NFE. All groups can afford an energy-only diet, but this diet in LR02 is lacking in all CoD micronutrients, apart from vitamin C. Figure 7, Annex 5 compares seasonal diet affordability for the same wealth groups, using both 2020 and 2019 inflation-adjusted rates.

Figure 2: Affordability of the diet for the four wealth groups in LR02, including essential NFE, as a percentage (%) of annual household income using 2020 inflation rate (346.4%)

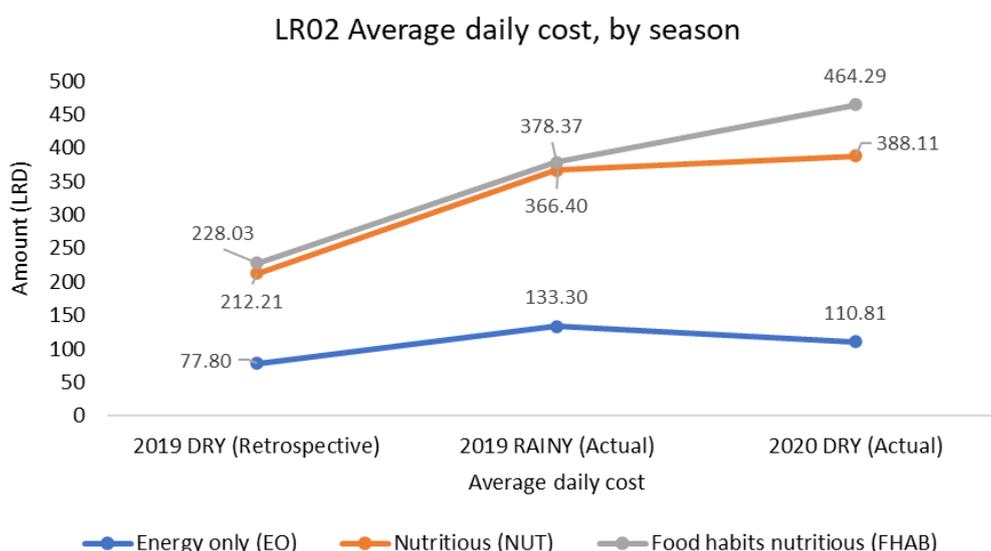


Seasonal variation in the diet cost

Figure 3 represents the difference in average daily cost of energy-only, micronutrient nutritious and food habits nutritious diets in LR02 across 2019 dry season (retrospective), 2019 rainy season (actual) and 2020 dry season

(actual). During the 2019 assessment, which was conducted during the rainy season, most traders and key market informants reported food prices in the previous (2018-2019) dry season to be lower than the (then current) rainy season. The 2019 rainy season NUT and FHAB daily food cost are lower than the 2020 dry season food cost. Although the EO diet has decreased slightly from the 2019 rainy to 2020 dry season, the NUT and FHAB diets – the two nutritious diets that meet RNIs - have increased in average daily cost by 6% and 23%, respectively. The increase in the average daily FHAB food cost from 2019 rainy to 2020 dry season is acutely aligned with Liberia’s current inflation rate of 23.6% (a depreciation of 235.60 LRD per annum)⁴.

Figure 3: Seasonal average daily diet cost variation between 2019 dry season (reported), 2109 rainy season (actual) and 2020 dry season (actual) in LR02

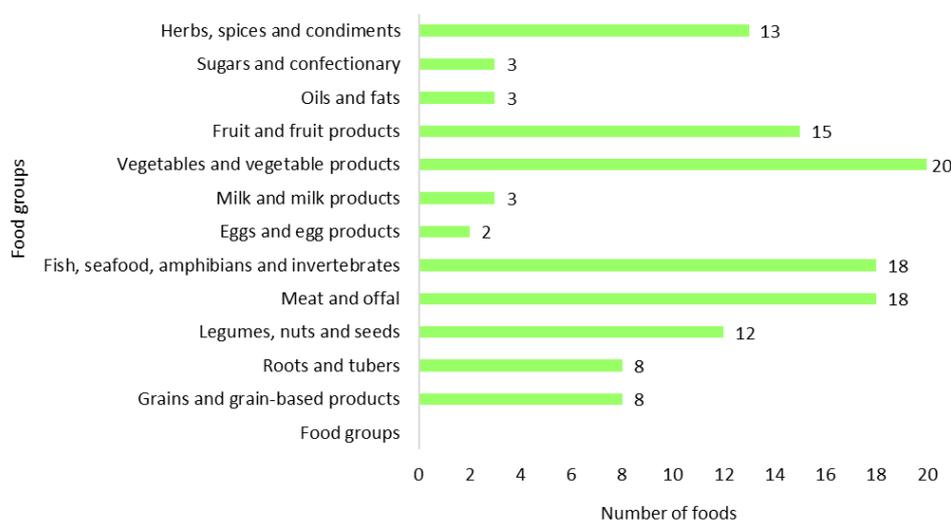


3.2 LR04 Coastal Plain Cassava with Rice and Inland Fishing

Availability of foods in the local market

The team collected price and weight data for 123 foods in seven markets within Grand Bassa (4 markets) and Rivercess (3 markets) counties across the LR04 Coastal Plain Cassava with Rice and Inland Fishing zone. Figure 4 shows the number of items found in the markets from each food group: 8 grains and grain-based products, 8 roots and tubers, 12 legumes, nuts and seeds, 18 meats and offal, 18 fish, seafood, amphibians and invertebrates, 2 egg and egg product, 3 milk and milk products, 20 vegetables and vegetable products, 15 fruit and fruit products, 3 oils and fats, 3 sugars and confectionary, and 13 herbs, spices and condiments. A detailed food list, including the average price per 100g in the rainy and dry seasons, annual price average, percentage seasonal change from 2019 rainy to 2020 dry, variation between retrospective dry season data for 2019 and actual dry season data for 2020, and percentage variation from 2019 dry season to 2020 dry season can be found in Annex 6.

Figure 4: The number of food items from each food group found in LR04 markets



A detailed food list, including the average price per 100g in the rainy and dry seasons, annual price average, percentage seasonal change from 2019 rainy to 2020 dry, variation between retrospective dry season data for 2019 and actual dry season data for 2020, and percentage variation from 2019 dry season to 2020 dry season can be found in Annex 6.

⁴ Worlddata.com (2020). Inflation calculator for Liberia. Visited 07 April 2020. (<https://www.worlddata.info/africa/liberia/inflation-rates.php>)

The most food items were found in Compound 3 (98) and Bokay (72) “wholesale” markets, where sellers and producers travel to sell larger quantities of foods, such as large bunches of plantains and sacks of staple foods. The graph in Annex 7 represents the number of foods found in each LR04 market. Less than 40 food items were found in Little Kola (27), Yarpleah (35), Gbozohn (27) and Sayah (31) markets. It is important to note:

- No eggs or egg products were found in Little Kola, Bokay, Yarpah, Yarpleah and Gbozohn markets
- Only boiled eggs (no fresh eggs) were found in Sayah town
- Only one trader offered fresh eggs in Compound 3
- No fresh milk was found in LR04
- No milk or milk products were found in Bokay
- Only one milk or milk product was found in Yarpah
- Only one oils and fats were found in Little Kola (agro) and Sayah (palm kernel)
- No meat and offal were found in Little Kola
- Only one fruits and fruit products was found in Yarpleah (butter pear/avocado) and Gbozohn (ripe banana)
- Only one root and/or tuber was found in Gbozohn (garri)

Seasonal food availability

There was variation in the types of foods found in LR04 markets indicating changes in seasonal availability. Foods found in LR04 markets only during the dry season included: country beans, kangbea (Atlantic flying fish), stinker fish (ray), dried kittily, large country bitter ball (chayote), breadfruit, butter pear (avocado), common plum (orange mango), lemon (tangerine), queesuck (cashew fruit), ripe plum (mango), watermelon. Foods found in markets only in the 2019 rainy season included: cassava flour, black beans, lentils, chicken sausage, cooked chicken thigh with skin, dried gazelle, catfish (raw), red snapper, zipper fish (African carp), cabbage, eggplant leaf, fever leaf, kittily, bush cherry, golden plum (green mango), grapefruit, guava, tomato.

The cost of the diets

Table 4 presents the cost of the three energy-only, nutritious and food habits nutritious diets in LR04. The analysis found the nutritious diet to be 1.9 times the cost of an energy-only diet and the FHAB diet 11% higher than the NUT. The FHAB diet is more than double the cost of the EO diet.

Table 4: Summary of the daily diet cost in the rainy and dry seasons, average daily cost and annual cost (LRD and USD) of each diet for an average household of 5 in LR04 Coast Plain Cassava with Rice and Inland Fishing

Diet type	Family size	Requirements met?	Average daily diet cost RAINY (LRD)	Average daily diet cost DRY (LRD)	Average daily diet cost (LRD)	Annual diet cost (LRD)
Energy only (EO)	5	Yes	139.31 (0.71 USD)	139.64 (0.71 USD)	139.43 (0.71 USD)	50,891.28 (257.66 USD)
Nutritious (NUT)	5	Yes	240.43 (1.22 USD)	297.82 (1.51 USD)	261.03 (1.32 USD)	95,274.49 (482.38 USD)
Food habits nutritious (FHAB)	5	Yes	382.12 (1.93 USD)	349.73 (1.77 USD)	370.49 (1.88 USD)	135,230.00 (684.67 USD)

LR04 Energy-only (EO) diet

The lowest average cost of an energy-only diet for an average household of 5 within zone LR04 was 139.43 LRD daily and 50,891.28 LRD annually, which is a 22% higher than 2019 reported EO cost for LR04. The daily cost during the rainy and dry seasons were 139.31 LRD and 139.64 LRD, respectively. The rainy season diet is slightly more expensive than the 2019 EO diet, as the software has not included cabbage, which was a zero-cost food item. Table 11 in Annex 8 shows the composition of the EO diet has changed to include seven (7) foods: breadfruit (only found in one market), breast milk, cassava leaf, whole coconut, fufu, palm kernel oil and sugar cane. The EO diet does not meet RNIs for fat (43%), vitamin B1 (99%), niacin (55%), vitamin B12 (95%), iron (78%) and zinc (44%).

LR04 Micronutrient nutritious (NUT) diet

The micronutrient nutritious diet includes 14 of the 123 food items found in local LR04 markets. The lowest average cost of a NUT diet for an average household of 5 is 261.03 LRD per day and 95,274.49 LRD annually. Like LR02,

the daily cost of the NUT diet in the dry season is higher than the rainy season at 297.82 LRD and 240.43 LRD, respectively. The dry season cost is 24% higher than the rainy season cost. As seen in Table 14 in Annex 8, fat and vitamin B12 have only just met the 100% target, signalling that fat and B12 are hardest RNIs to meet using locally available foods in LR04 and increase the cost of the diet significantly.

Most fat in the nutritious diet is provided by coconut (67%), butter pear (avocado) (11.3%), cassava leaf (8.8%) and breast milk (7.7%). Vitamin B12 is only found in three items in the NUT diet: land snail (60.9%), sardines (34.1%) and breast milk (5%). Although the NUT diet meets minimum RNIs, it often does not necessarily select realistic quantities of food items. For the LR02 NUT diet, the software selected rather high quantities of cassava leaf (957 kg) and cassava (748 kg), which is likely more than any household of 5 people would consume in one year and does not allow much dietary diversity. For more information, the rainy and dry season NUT diet summaries can be found in Tables 15 and 16, Annex 8, respectively.

LR04 Food habits nutritious (FHAB) diet

The food habits nutritious diet for LR04 contains 19 of the 123 foods found in the visited markets. The average cost of the FHAB diet for an average household of 5 is 370.49 LRD per day and 135,230.00 LRD annually, which is almost 12% higher than the 2019 FHAB cost in the same zone. The FHAB diet is 1.4 and 2.7 times the cost of the NUT and EO diets, respectively. Table 17 in Annex 8 shows the foods included in the annual FHAB diet. The average daily cost of the FHAB diet during the rainy season is 382.12 LRD, whilst the dry season cost is lower at 349.73 LRD.

While the FHAB diet has adjusted the quantity of foods to account for local consumption patterns, the quantities of cassava leaf (745 kg) and cassava root (519 kg) are still high. When interpreting the results, it is important to remember that the software maximises on single sources of food to attain the lowest cost possible. Instead, the hypothetical diet can be used as a guide to highlight nutrient dense foods to consider for planning purposes.

Again, fat (102%) and vitamin B12 (100%) are the limiting nutrients, which are increasing the cost of the in the FHAB diet. Vitamin B12 is being provided solely by snail (34.1%), bony fish (60.9%) – the most expensive food item (39,310 LRD annually) - and breast milk (5%). Fat in the FHAB diet is attained from coconut (50.7%), agro oil (11.3%), breast milk (7.6%), cassava leaf (6.7%), butter pear (6.7%), bony fish (4.8%), palm kernel oil (4%) and trace amounts coming from other foods. The rainy and dry season FHAB diet summaries can be found in Tables 18 and 19, Annex 8, respectively, for further information.

Seasonal variation in the diet

Table 5 illustrates the seasonal variation in foods selected by the software for NUT and FHAB diets for LR04. Tables 15 and 16, Annex 8, shows that 95% of vitamin B12 comes from snail and sardina in the rainy and dry seasons, respectively, for the NUT diet. The snail was excluded from selection for the FHAB in the rainy season, as it was only found in two of eleven LR04 markets. Gblafee leaf, breadfruit and large country bitter ball (chayote fruit) were excluded from selection of FHAB as they were only found in one market each. Like LR02, the FHAB diet has selected bony fish and snail for the rainy and dry seasons, respectively, to provide 95% vitamin B12. The excluded NUT foods (in red) have been replaced by fufu, kpakutuweh, country rice and sweet potato leaf in both seasons, agro oil, chicken neck, split peas (yellow or green), red oil in rainy season, and garri and palm kernel oil in the dry season.

Table 5: Summary of the foods selected by the CoD software across the seasons (both, rainy, dry) in LR04

	BOTH SEASONS	WET (RAINY) SEASON	DRY SEASON
Nutritious (NUT) diet	Breast milk Cassava leaf, Gbueevah Cassava, raw (Cassava, tuber, raw) Coconut, whole	Breadnut, raw or cooked Country rice (Brown rice, raw) Gblafee leaf (Okra leaf) Snail (African land snail)	Breadfruit Butter pear (Avocado) Large country bitter ball (Chayote, fruit) Sardina raw (Sardine fish, raw) Sweet potato leaf
Food habits nutritious (FHAB) diet	Breast milk Cassava leaf, Gbueevah Cassava, raw (Cassava, tuber, raw) Coconut, whole Country rice (Brown rice, raw) Fufu (Cassava, bread, fermented) Kpakutuweh (Adzuki beans, raw) Sweet potato leaf	Agro oil (Oil, vegetable) Boney fish, raw (Mackerel fish, raw) Breadnut, raw or cooked Chicken neck, with skin, raw Peas, yellow or green, dried (Split peas, raw) Red oil (Red palm oil)	Butter pear (Avocado) Garri (Cassava, root, dried meal) Palm kernel oil (Local palm oil) Purple sweet potato, raw Snail (African land snail)

The affordability of the diets

Figure 5 illustrates the results of an LR04 affordability analysis, using the 2020 inflation-adjusted income figures from the 2007 HEA. The minimum cost of FHAB diet represents 178%, 121%, 52% and 38% of annual household income for the very poor, poor, middle and better off wealth groups, respectively. These figures rise to 205%, 148%, 79% and 64% for the same groups when NFE is added to diet cost. The FHAB diet is unaffordable for very poor and poor households and the very poor cannot afford a NUT diet. While poor households can afford a NUT diet, it becomes unaffordable when NFE is added. The middle and better off groups can afford all diets. Like LR02, all wealth groups can afford the EO diet, however, the EO does not meet RNIs for fat, vitamin B1, niacin, vitamin B12, iron and zinc. Figure 8, Annex 9 compares seasonal diet affordability for the same wealth groups, using both 2020 and 2019 inflation-adjusted rates.

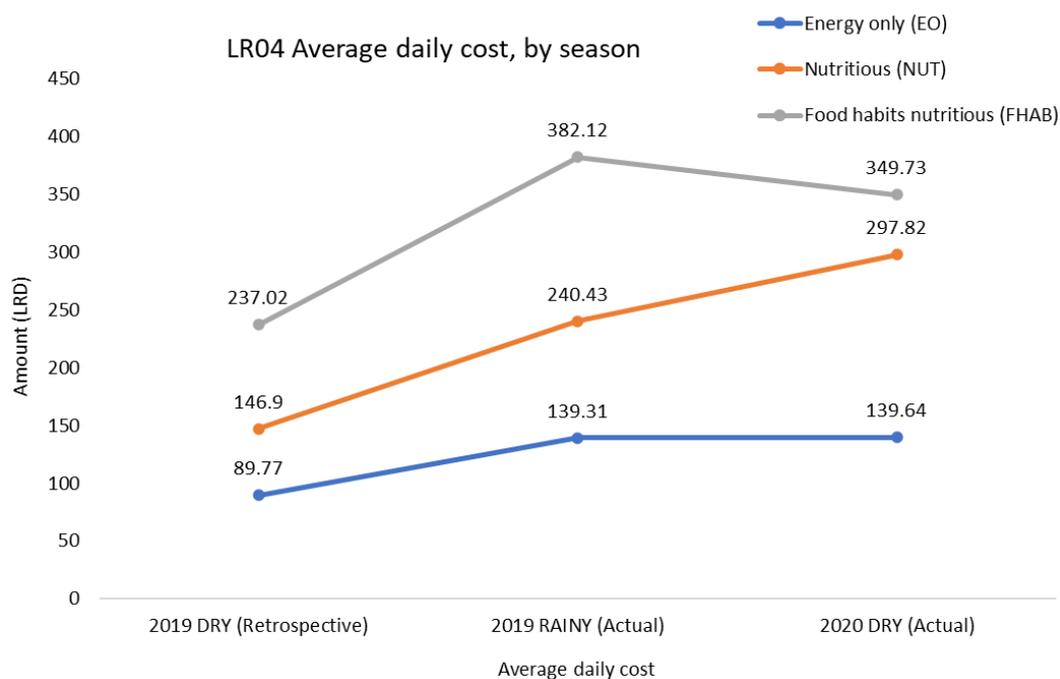
Figure 5: Affordability of the diet for the four wealth groups in LR04, including essential NFE, as a percentage (%) of annual household income using 2020 inflation rate (346.4%)



Seasonal variation in the diet cost

Figure 6 represents the difference in average daily cost of LR04 energy-only, nutritious and food habits nutritious diets across 2019 dry (retrospective), 2019 rainy (actual) and 2020 dry (actual) seasons. The energy-only diet is following a linear progression, with an only minute increase from the 2019 rainy season (139.31 LRD) to the 2020 dry season (139.64 LRD). The 2020 dry season NUT daily food cost (297.82 LRD) is 24% higher than the 2019 rainy season food cost (240.43 LRD), in line with the current rate of inflation (23.6%). The 2020 dry season FHAB daily food cost (349.73 LRD) is approximately 10% lower than the 2019 rainy season FHAB cost (382.12 LRD).

Figure 6: Seasonal average daily diet cost variation between 2019 dry season (reported), 2019 rainy season (actual) and 2020 dry season (actual) in LR04



3.3 What if? model of UNICEF’s Multiple Micronutrient Powder (MNP) intervention

The What if? model tested is a nutrition-specific 15 micronutrient powder (MNP) currently being distributed to children in Liberia to understand its effect on nutritious diet costs and affordability. For example, whether it might reduce the annual cost of a nutritious diet for the household of 5. To test the intervention, UNICEF’s MNP containing 440 µg vitamin A, 30 mg vitamin C, 5 µg vitamin D, 0.5 mg vitamin B1, 0.5 mg vitamin B2, 6 mg vitamin B3, 0.5 mg vitamin B6, 0.9 µg vitamin B12, 90 µg folic acid, 10 mg iron, 0.56 mg copper and 4.1 zinc per 1 gram sachet was added to the software at zero cost. Vitamin E, selenium and iodine are also part of the MNP; however, it is not possible to add and analyse these micronutrients through the CoD software, thus, they were not included.

Table 20, Annex 10 presents the results of an MNP intervention on the cost of diet for a child (either sex) 12-23 months. The intervention makes no difference on the cost of an energy-only diet for a child. The MNP intervention will result on a 44% and 20% reduction in the cost of the NUT diet and a 45% and 43% reduction in the cost of the FHAB diet in LR02 and LR04, respectively, for a child. The intervention makes a more significant difference in the rainy season cost (-43% NUT cost, -42% FHAB cost) in LR02. While in LR04, the MNP makes more of a difference in cost during the dry season for the NUT (-25% cost) and rainy season for the FHAB (-49% cost) diets.

The results of the impact on cost of the diet for an average household of 5 individuals can be found in Table 21, Annex 10. Again, the intervention makes no impact on the cost of the EO diet. The intervention results in a 3% and 1% reduction in the NUT diets and a 5% and 2% reduction in the FHAB diets for LR02 and LR04, respectively. This is not surprising given that the child makes up the smallest proportion of diet cost for the household. The most significant reduction can be seen in the dry season FHAB diet (-9%) in LR02.

Finally, Table 22 Annex 10 presents the percentage contribution of selected micronutrients for a child (either sex) 12-23 months via the provision of 1 sachet (1 g) MNP per day. The MNP provides a significant amount of iron (> 96.1%) and vitamin B12 (63.6%) – two of the key limiting nutrients - to all three diets in LR02 and LR04. It also provides more than half the recommended amount for niacin, ranging from 50.5% (LR02 dry season NUT) to 72.2% (LR02 and LR04 EO diets, all season) and zinc, ranging from 62.7% (LR02 rainy season FHAB) to 86.5% (LR02 and LR04 EO diets, all seasons).

The MNP does not make a significant difference in the cost of the diet for an average household of 5, however, it does make a difference in the cost of a child’s diet in both LR02 and LR04. Given that the micronutrient powder intervention could provide children (either sex) 12-23 months with much of the required niacin, vitamin B12 and

iron that is difficult to achieve through available and affordable foods in LR02 and LR04, it is recommended. This intervention has great potential if accompanied by a new information, education and communication (IEC) strategy.

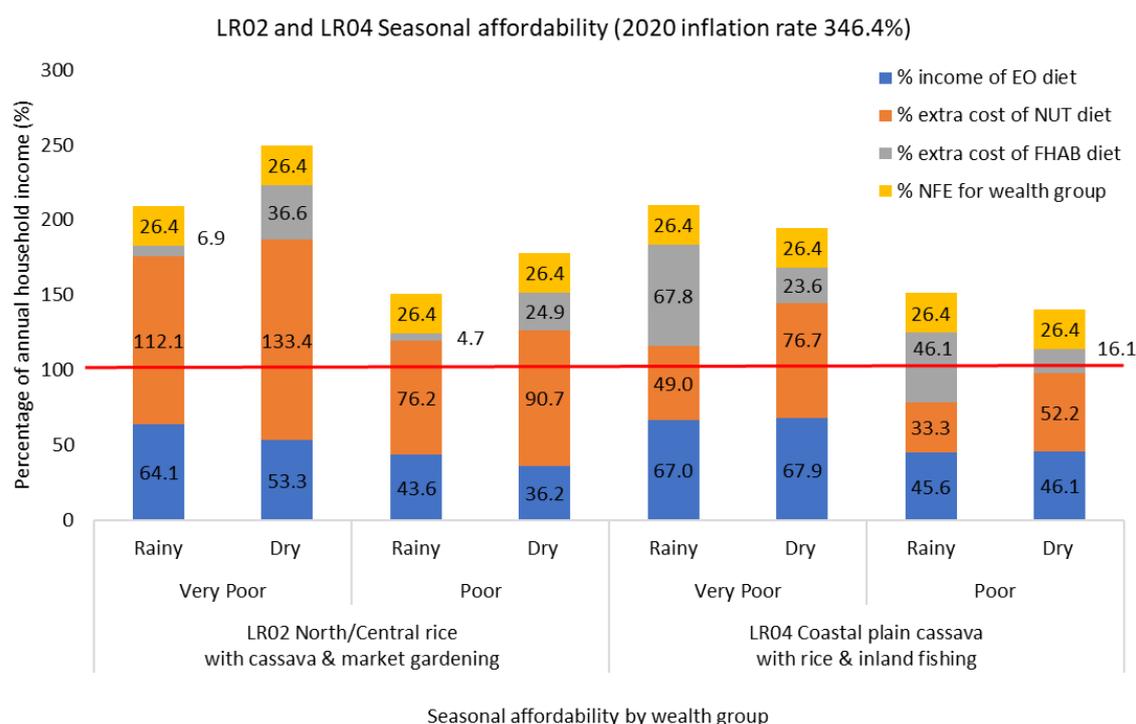
4. Key findings and recommendations

Key Findings

The annual cost of a food habits nutritious diet (FHAB) for an average household of 5, which considers local dietary habits and food consumption patterns, is 149,923.69 LRD and 135,230.00 LRD in zones LR02 and LR04, respectively. The LR02 FHAB diet costs 10% more than a nutritious diet (136,579.64 LRD) annually, whilst the LR04 FHAB diet costs 43% more than the annual NUT diet (95,275.49 LRD). The higher cost of the FHAB diet in LR04, relative to NUT, is due in equal parts to the adjustment for food availability and local consumption patterns. The FHAB diet excluded foods only available in one or two markets, which were selected for the NUT diet, and selected foods based on key informant interview consumption pattern and habit results. The higher cost of the diet in LR02 is reflective of its relative remoteness and lower food availability and, thus, higher food costs.

Livelihood zone	Diet type	Family size	Requirements met?	Average daily diet cost RAINY (LRD)	Average daily diet cost DRY (LRD)	Average daily diet cost (LRD)	Annual diet cost (LRD)
LR02 North/Central rice with cassava & market gardening	Nutritious (NUT)	5	Yes	366.40 (1.86 USD)	388.11 (1.97 USD)	374.19 (1.89 USD)	136,579.64 (691.51 USD)
	Food habits nutritious (FHAB)	5	Yes	378.37 (1.92 USD)	464.29 (2.35 USD)	410.75 (2.08 USD)	149,923.69 (759.07 USD)
LR04 Coastal Plain Cassava with Rice & Inland Fishing	Nutritious (NUT)	5	Yes	240.43 (1.22 USD)	297.82 (1.51 USD)	261.03 (1.32 USD)	95,274.49 (482.38 USD)
	Food habits nutritious (FHAB)	5	Yes	382.12 (1.93 USD)	349.73 (1.77 USD)	370.49 (1.88 USD)	135,230.00 (684.67 USD)

According to the World Bank Group's October 2019 Africa's Pulse report, Liberia's persistently high double-digit inflation rates are due to a large fiscal deficit and depreciation of the local currency (LRD) passed on to domestic prices. This is reflected in an increase in the cost of a nutritious diet, from 2019 rainy to 2020 dry season. When 2019 dry retrospective, 2019 rainy actual and 2020 dry actual costs are compared, there is an upward trend in the cost of a nutritious diet and, thus, an expectation that food costs will increase for the coming rainy season.



The results of the affordability analysis are similar to the 2019 CoD Assessment in that the FHAB diet is unaffordable to the very poor and poor wealth groups⁵ in both livelihood zones. In LR02, the FHAB diet cost equates to 198% and 143% of annual income before non-food expenditure is added for the very poor and poor, respectively. In LR04, the FHAB is 178% of annual income for the very poor and 121% of annual income for the poor, before NFE is added. The very poor in both LR02 and LR04 cannot afford a nutritious diet in either season: 176% rainy, 187% dry in LR02; 116% rainy, 145% dry in LR04, as a percentage of income before non-food expenditure. The poor group can afford a nutritious diet in both seasons in LR04 at 79% rainy and 98% dry as a percentage of income before NFE. However, when non-food expenditure is added to the NUT cost, the diet is more than 100% of annual income.

It is important to remember that by using the 2020 inflation rate (346.4%) to calculate income and expenditure, there is an assumption that there has been an increase in income of 23.6%, which is not necessarily realistic. When 2019 inflation rates are used, only the poor group can just barely afford the NUT diet in the rainy season, but the diet becomes unaffordable when non-food expenditure is added.

Recommendations

Whilst the same recommendations from the 2019 Liberia Cost of the Diet Assessment report still stand, a few are being emphasized in this addendum report, with two additions. **Rural communities must have a functioning local food system** that does **not** rely on imports. For this reason, nutrition-sensitive interventions, such as community gardening, aquaculture and snail rearing, are highly recommended. From what was observed through 2019 field visits, **intensive community development work is needed** to help communities realise their vision for themselves and their children, discover and develop livelihood strategies, and foster enthusiasm for improved local food and social systems.

Short-term:

1. **Promote consumption of all available free and wild foods.** Foods grown in the wild require no maintenance. Encourage cultivation of forest gardens - intentionally planted bush trees and plants that can be available for local utilisation - and consumption of all no cost foods (not bush meat).
2. **Find ways to make nutrient dense foods more affordable.** Bony fish, breadnut, butter beans, catfish, cassava, coconut, country beans, cow meat, dried baby fish, kpakutuweh beans, sardines, purple and yellow sweet potatoes, palm oils, and local greens (cassava, fever, palava sauce/plato, sweet potato leaves) are the most nutritious and available sources of fat, vitamin B12, fat, niacin, iron and zinc, but also increase cost and are still too expensive for most poor and very poor households at the quantities required for a nutritious diet. Livelihood opportunities to grow and/or produce these foods will contribute to lowering the cost of the diet significantly.
3. **Nutrition-specific conditional cash transfer to very poor and poor households.** Whilst not sustainable in the long-term, cash transfers provide a short-term solution for households unable to afford a nutritious and locally appropriate diet. A two-year transfer could bridge the affordability gap during the inception period of other planned project activities and associated 'conditions' could be tied to participation in said activities. An amount slightly higher than the monthly 4,500 LRD trialled in the 2019 CoD assessment report is recommended for very poor households.
4. **NEW! Nutrition-specific micronutrient powder intervention with new IEC strategy.** UNICEF's 2019 end-line coverage assessment reported that parents were not giving children the provided supplement because they felt they did not need it. If this intervention is to continue or be implemented in new areas, it must be accompanied by a *revised* information, education and communication (IEC) strategy because the last one was clearly unsuccessful. The recent Barrier Analysis, conducted by Concern in early 2020, and Nutrition Causal Analysis (Link NCA), conducted by Action Against Hunger from November 2019 to March 2020, may have identified reasons for unchanged negative behaviours and may be used to inform the new IEC strategy.

⁵ Very poor wealth group = 75,886 LRD annual income + 19,995.97 LRD NFE; Poor wealth group = 111,597.09 LRD annual income + 29,405.83 LRD NFE

5. **NEW! Updated Household Economy Analysis⁶**. An HEA usually precedes and informs a CoD assessment. While seven HEAs have been conducted in Liberia, the most recent is more than 10 years old. Conduct a baseline HEA in LR02, LR04 and LR08 to properly identify wealth groups and quantify livelihood strategies.

Long-term:

1. **Improved road network and market accessibility.** Most of the road in Liberia are dirt, which turns to mud during the rainy season. This will continue to prevent vehicles from accessing remote areas and the cost of transportation and gas will continue to rise. As the rainy season becomes longer due to climate change and unpredictable weather more common, this means rural communities will be inaccessible for longer and, thus, food insecure for longer. The road system *must* be improved – sooner rather than later - and will require extensive advocacy at both the local and national levels.
2. **Nutrition-sensitive community farming.** Community farming, including gardening, crop, vegetable and fruit production (e.g. breadnut and coconut). The very poor and poor groups in LR02, and many parts of LR04, must produce their own food. If road conditions do not improve, it is critical that communities in these zones protect themselves during the rainy season, when roads are inaccessible and the cost of food almost doubles. Further investigation into land accessibility and alternative ways to sustainably grow and cultivate crops and produce required.
3. **Nutrition-sensitive aquaculture and snail-rearing.** These interventions have the potential to significantly lower the cost of the diet, whilst providing income generating opportunities. Fish and snails provide the best sources of iron and vitamin B12, two of the main limiting nutrients. Further investigation into existing fishpond and aquaculture activities within the livelihood zones required.
4. **Alternative livelihood strategies for hunters.** Liberian hunters hold valuable knowledge about the forest (bush) and are more familiar with the ecosystem than anyone else. They are currently “in hiding” and sell hunted animals to highest bidders. Hunters must be offered alternative livelihood strategies if they are to stop doing work that has been passed down to them over generations, which threatens both the health of Liberians and the diversity of wildlife found within the country. Investigation into opportunities that might exist for this isolated group and how to harness their knowledge and expertise.

⁶ For more information: www.heacod.org or <http://foodeconomy.com/household-economy-analysis-services/baseline-assessment/>

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6. Annexes

Annex 1: Map of visited markets and market schedule

Map of visited markets within each livelihood zone in Liberia (FEWSNET, 2019):



Detailed schedule of 2020 visited markets and villages by date:

Day	Date	Market name	Village	Market day	County	District	Livelihood zone	Teams
1	12-Mar-20	Luewin	Luewin Town	Thursday	Grand Bassa	District 3	LR02	2
1	12-Mar-20	Boewin	Boewin Town	Thursday	Grand Bassa	District 4	LR02	1
2	13-Mar-20	Compound 3		Friday	Grand Bassa	District 3	LR04	3
3	14-Mar-20	Frank Digg's	St. John	Saturday	Grand Bassa	District 3	LR02	3
4	16-Mar-20	Yarpah	Yarpah Town	Monday	Rivercess	Nyorwein	LR04	2
4	16-Mar-20	Little Kola	Gbieh Town	Monday	Grand Bassa	District 4	LR04	1
5	17-Mar-20	Bokay		Tuesday	Grand Bassa	Owensgrove	LR04	2
5	17-Mar-20	Yarpleah	Yarpleah Town	Tuesday	Rivercess	Nyorwein	LR04	1
6	18-Mar-20	Bodowhea	Bodowhea Town	Wednesday	Rivercess	Jo River	LR02	2
6	18-Mar-20	Gbozahn	Gbozahn Town	Wednesday	Grand Bassa	District 4	LR04	1
7	19-Mar-20	Cotton Tree	Palm Bush Community	Thursday	Margibi	Firestone	LR08	2
7	19-Mar-20	Boegeezaye	Boegeezaye Town	Thursday	Rivercess	Doedain	LR02	1
8	20-Mar-20	Yarnwollie	Yarnwollie Town	Friday	Margibi	Gibi	LR08	2
8	20-Mar-20	Sayah	Sayah Town	Friday	Rivercess	Nyorwein	LR04	1

Annex 2: LR02 Food list

LR02 Food list with local name, English food list name, average price per 100g in rainy and dry seasons, annual average, percentage price change from 2019 rainy to 2020 dry season, and variation between retrospective dry season data (2019) and actual dry season data (2020), and percentage variation from 2019 dry season to 2020 dry season.

North/Central Rice with Cassava and Market Gardening Market Food List	Average Price Per 100g			Seasonal change (%)	Dry season - Annual variation		
	Rainy Actual	Dry Actual	Annual Average		2019 Retrospective	2020 Actual	Annual change (%)
Grains and grain-based products							
Baking flour (Wheat, flour, 72% extraction)	18.82	15.84	17.42	84%	14.41	15.84	110%
Boiled/roasted corn (Maize, cooked, CotD)							
Corn flour (Maize, flour, dry)	24.70	15.85	21.16	64%	22.24	15.85	71%
Corn meal (Corn flour, 96% extraction)	21.61		21.61		10.81		
Corn seed (Maize, dried, raw)	21.82	33.54	29.64	154%	11.26	33.54	298%
Country rice (Rice, brown, raw)	11.14	13.15	12.22	118%	8.30	13.15	158%
Rice, white, raw (Rice, white, raw)	14.93	15.06	15.00	101%	9.69	15.06	155%
Spaghetti (Pasta)	41.84	47.51	44.46	114%	31.85	47.51	149%
Roots and tubers							
Cassava, raw (Cassava, tuber, raw)	1.74	2.51	2.17	144%	0.74	2.51	339%
Cassava, roasted/boiled (Cassava, tuber, cooked)							
Eddoes (Cocoyam, tuber, raw)	9.50		9.50		8.69		
Fufu (Cassava, bread, fermented)	3.36	2.72	2.99	81%	2.28	2.72	119%
Garri (Cassava, root, dried meal)	14.68	10.94	12.54	75%	10.00	10.94	109%
Purple sweet potato, raw (Sweet potato, purple skin, pale yellow flesh, raw)		2.81	2.81			2.81	
Yam, raw (Yam, tuber, raw)	5.64	4.05	4.25	72%	3.61	4.05	112%
Yellow sweet potato, raw (Sweet potato, yellow, raw)	4.39	3.16	3.46	72%	3.51	3.16	90%
Legumes, nuts and seeds							
Benny seeds, dried, raw (Sesame, seeds, whole, dried, raw)	50.20	56.60	52.89	113%	27.98	56.60	202%
Bitter cola, dried (Colanut, dried, raw)	99.99	39.19	79.72	39%	87.03	39.19	45%
Bitter cola (Colanut, raw)	16.57	25.54	21.49	154%	10.89	25.54	235%
Black-eyed beans, raw (Cowpea, blackeyes, immature, raw)	23.51	22.83	23.04	97%	17.23	22.83	133%

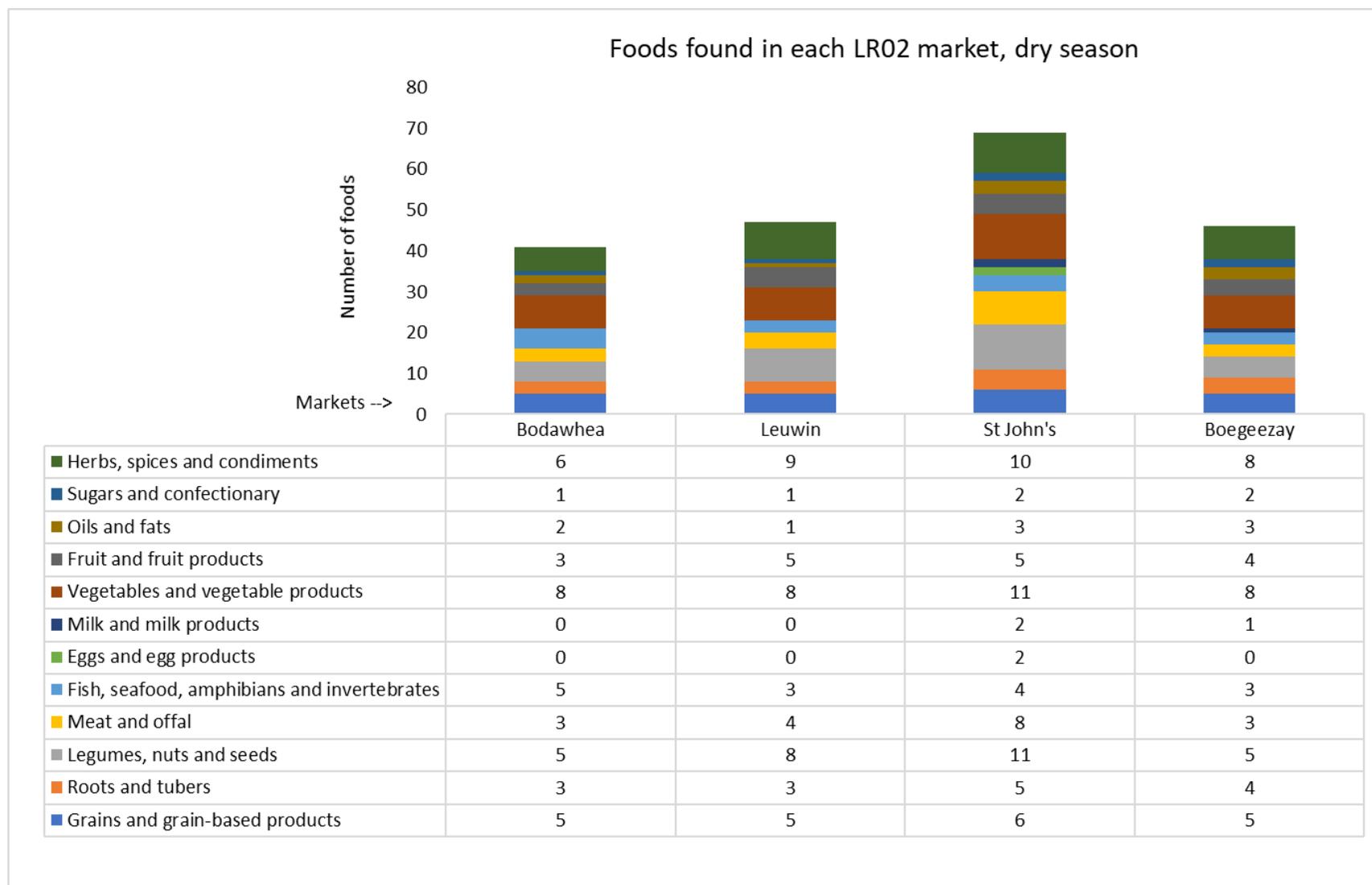
Butter beans (Bean, lima, dried)	46.44	16.72	39.01	36%	30.96	16.72	54%
Country beans (Bean, pinto, immature, raw)		14.06	14.06			14.06	
Kpakutuweh (Bean, adzuki, mature, raw)	25.21	19.51	21.58	77%	16.13	19.51	121%
Peanut paste (Groundnut paste)	55.98	44.25	48.65	79%	46.26	44.25	96%
Peanuts with shell (Peanut, with shell)	62.73		62.73		31.37		
Peas, (yellow or green split peas), dried, raw (Peas, split, mature, raw)	17.83	17.36	17.72	97%	10.50	17.36	165%
Pink peanuts, no shell, raw (Groundnut, rose, shelled, dried, raw)	51.51	40.11	47.49	78%	25.76	40.11	156%
Red peanuts, no shell, raw (Groundnut, red, shelled, dried, raw)	41.36	57.69	50.26	139%	27.57	57.69	209%
Meat and offal							
Chicken back (Chicken)		55.66	55.66			55.66	
Chicken breast dry (Chicken, breast, without skin, raw)	60.15		60.15		40.35		
Chicken feet (Chicken, feet, boiled)	43.97	52.06	47.71	118%	21.48	52.06	242%
Chicken meat, light meat, no skin, raw (Chicken, light meat, flesh, raw)	35.24	61.46	41.80	174%	27.81	61.46	221%
Chicken neck, with skin, raw (Chicken, neck, with skin, raw)	65.97	61.31	63.64	93%	32.98	61.31	186%
Chicken thigh meat, with skin, cooked (Chicken, thigh, with skin, cooked)	62.24		62.24		31.12		
Chicken wing meat, with skin raw (Chicken, wing meat, with skin, raw)	53.29	74.03	60.20	139%	38.90	74.03	190%
Cow bone (Beef, bone marrow)		64.13	64.13			64.13	
Cow tongue, raw (Beef, tongue, raw)		64.94	64.94			64.94	
Gazelle, dried (Water buck or gazelle, dried)							
Gazelle, raw (Gazelle, raw)		99.45	99.45			99.45	
Groundhog (Muskrat, raw)							
Pig feet (Pork, feet)	42.25	46.23	44.44	109%	27.74	46.23	167%
Pig meat, bone, raw (Pork, with bone)	41.16	59.20	47.17	144%	21.43	59.20	276%
Pork sausage (Pork, sausage)	73.53	107.14	90.34	146%	29.41	107.14	364%
Spare ribs, raw (Pork, back ribs, raw)	41.70	37.63	40.34	90%	31.25	37.63	120%
Turkey wing (Turkey wing, with skin, raw)		49.91	49.91			49.91	
Fish, seafood, amphibians and invertebrates							
Bony fish, fresh, raw (Fish, mackerel, raw)	28.08	35.87	33.37	128%	21.91	35.87	164%
Bony fish, smoked, dried (Fish, smoked, dried)	74.39	71.94	73.26	97%	47.95	71.94	150%
Bumble worms (Mopanie worm, canned)							

Catfish, dried (Fish, catfish, dried)	62.50		62.50		62.50		
Catfish, raw (Fish, catfish, channel, wild, raw)	25.19	33.91	29.55	135%	25.19	33.91	135%
Crab, river (Crab, fresh water)	103.09	63.29	83.19	61%	103.09	63.29	61%
Crayfish (Crayfish, wild, raw)							
Dried baby crayfish (Shrimp, very small, dried)							
Gbuka fish, raw (Fish, tilapia, raw)	90.76	36.51	69.06	40%	48.40	36.51	75%
Lobster (Lobster, spiny, raw)							
Sardines, canned in oil (Fish, sardines in oil, canned)	149.45	104.22	124.78	70%	103.65	104.22	101%
Small dried fish (Fish, dried, CotD)		143.24	143.24			143.24	
Snail (Snail, sea)		42.37	42.37			42.37	
Spring boe, whole (Frog)							
Zipper fish (Fish, African carp, raw)							
Eggs and egg products							
Boiled egg (Egg, chicken, cooked)	45.62	64.93	53.89	142%	52.13	64.93	125%
Raw egg (Egg, chicken, raw)		65.40	65.40			65.40	
Milk and milk products							
Milk, condensed, sweet (Milk, cow, canned, condensed, sweetened)	82.07		82.07		59.91		
Milk, evaporated, canned (liquid) (Milk, cow, canned, evaporated)	61.03	57.37	58.94	94%	33.59	57.37	171%
Milk, powdered (Milk, cow, powdered, whole)	85.71	126.19	120.41	147%	57.14	126.19	221%
Vegetables and vegeproducts							
Bitter ball, white eggplant (Eggplant, white, raw)	5.90	22.70	11.50	385%	4.77	22.70	476%
Breadnut, raw or cooked (Breadnut, raw)	3.85		3.85		1.93		
Careless green (Leaf, collards, raw)	7.77	5.23	5.59	67%	4.66	5.23	112%
Cassava leaf, Gbueevah (Leaf, cassava, raw)							
Cucumber (Cucumber, raw)	2.27		2.27		1.60		
Eggplant leaf (Leaf, eggplant, raw)		37.34	37.34			37.34	
Eggplant (Eggplant, raw)	4.15	10.96	6.12	264%	4.05	10.96	271%
Fever leaf, raw (Leaf, fever, raw)	3.40		3.40		1.70		
Gblafee leaf (Leaf, okra, raw)	1.55		1.55		1.55		
Kittily (Kittily, dried)		73.08	73.08			73.08	
Kittily (Kittily, eggplant seeds, raw)	7.76	35.90	16.20	463%	4.29	35.90	837%

Okra dust (Okra, dust)		144.14	144.14			144.14	
Okra, dried (Okra, dried)	108.06	57.33	82.69	53%	54.03	57.33	106%
Okra (Okra, raw)	6.41	28.79	15.28	449%	4.35	28.79	662%
Onion (Onion, raw)	35.86	32.02	34.45	89%	20.17	32.02	159%
Palava sauce, plato (Leaf, jute, raw)	2.48	5.27	4.44	213%	1.24	5.27	425%
Palm cabbage (African fan palm shoots)							
Plantain, cooked (Plantain, cooked)							
Plantain, raw (Plantain, all varieties)	7.59	9.11	8.42	120%	3.79	9.11	240%
Plantain, ripe, raw (Plantain, ripe, raw)		8.76	8.76			8.76	
Pumpkin, cooked (Pumpkin, squash, cooked)	2.32		2.32		3.10		
Pumpkin, raw (Pumpkin, squash, raw)	2.66	4.05	3.35	152%	1.76	4.05	230%
Spring onion (Onion, spring or scallion, raw)							
Sweet potato leaf (Leaf, sweet potato, raw)	0.76	3.19	2.92	420%	0.38	3.19	839%
Water greens (Malabar spinach, cooked)	3.58		3.58		1.75		
Worrh, mushroom (Mushroom, average)							
Fruit and fruit products							
Banana, green, Booe (Banana, white flesh)		2.77	2.77			2.77	
Banana, ripe or French banana (Banana, yellow flesh)	4.25	5.08	4.52	120%	4.44	5.08	114%
Butter pear (Avocado)		7.70	7.70			7.70	
Coconut (Coconut, mature kernel)	7.90	3.25	3.83	41%	2.63	3.25	124%
Common plum (Mango, deep orange flesh)							
Golden plum (Mango, green)	2.28		2.28		2.15		
Grapefruit (Grapefruit)							
Guava (Guava, fruit)		3.94	3.94			3.94	
Lemon, Gargouee (Tangerine)	7.50		7.50		7.50		
Monkey nut (Rambutan, average or from aceh)							
Orange (Orange)	5.03		5.03		5.38		
Palm fruit (African fan palm fruit)	1.00	1.88	1.77	188%	1.00	1.88	188%
Pawpaw (Papaya, fruit, ripe)	1.03	4.20	2.39	408%	0.78	4.20	538%
Pineapple pulp, Kweekpor (Pineapple, pulp)							
Pineapple, Kweekpor (Pineapple)		6.84	6.84			6.84	

Plum juice (Mango, juice)							
Queesuck (Cashew fruit)							
Ripe plum (Mango, ripe)							
Sausau, sour sauce (Sour sop)							
Tomato, Ceedoe (Tomato, red, ripe, raw)	12.73		12.73		7.73		
Watermelon (Watermelon, fruit)							
Oils and fats							
Agro oil (Oil, vegetable)	36.33	31.45	34.30	87%	21.63	31.45	145%
Palm kernel oil (Oil, palm, local)	24.97	23.41	23.93	94%	12.48	23.41	188%
Red oil (from fruit) (Oil, palm, red)	21.55	17.09	19.32	79%	13.34	17.09	128%
Sugars and confectionary							
Brown sugar (Sugar, brown)	244.44	31.50	55.16	13%	122.22	31.50	26%
Plantain chips (Crisp or chip, cassava, dried)	36.12	30.50	34.65	84%	21.86	30.50	140%
Sugar cane (Sugar, cane, refined)	25.41		25.41		25.03		
Herbs, spices and condiments							
Dried chilli pepper (Chilli pepper, dried)	181.23	319.30	234.58	176%	130.34	319.30	245%
Garlic dust (Garlic, powdered)	400.00		400.00		200.00		
Garlic, fresh (Garlic, raw)	218.81	313.02	256.49	143%	173.12	313.02	181%
Ginger root (Ginger, root, raw)		18.32	18.32			18.32	
Green pepper (Chilli, green, raw)	42.31	84.14	62.55	199%	49.09	84.14	171%
Lime (Lime)	8.22	16.46	10.97	200%	5.64	16.46	292%
Onion dust (Onion, powdered)	179.05	129.03	154.04	72%	104.79	129.03	123%
Pepper, storage pepper (Pepper, red, hot)	32.15	66.87	37.93	208%	22.06	66.87	303%
Salt, iodized (Salt, iodized)	11.25	13.16	12.70	117%	8.75	13.16	150%
Salt (Salt)	100.00	15.50	43.67	16%	100.00	15.50	16%
Tomato dust (Tomato, powder)	58.22	67.48	62.49	116%	41.60	67.48	162%
Tomato paste (Tomato paste, concentrated)	67.50	80.00	76.15	119%	43.75	80.00	183%
Vitta (Cube, beef, dry)	100.00	98.76	99.03	99%	100.00	98.76	99%

Annex 3: LR02 Food availability, dry season



Annex 4: LR02 Annual and seasonal diet summaries

Table 6: LR02 Energy-Only (EO) diet summary, annual

The edible weight and cost of the foods selected for an **average household of 5** for the whole year for an **energy only (EO) diet** with the percentage contributed by each food in terms of weight, cost, energy, protein and fat, the percentage contribution of each food for eight vitamins and four minerals and the percentage of the total target met for each nutrient, averaged across the seasons in the **LR02 North/Central Rice with Cassava & Market Gardening livelihood zone**

Energy-Only (EO) Food List	Quantity (Kg)	% quantity	Cost (LRD)	% cost	% energy	% protein	% fat	% vit A	% vit C	% vit B1	% vit B2	% niacin	% vit B6	% folic acid	% vit B12	% calcium	% iron	% zinc
Breadnut, raw or cooked (Breadnut, raw)	38	2.2	1,467	3.2	2.1	7.1	0.8	2.2	6.9	7.5	6.4	3.8	25.3	14.4	0.0	12.6	12.5	14.3
Breast milk	194	11.2	0	0.0	3.3	6.3	15.1	43.7	5.1	14.7	20.6	18.8	3.0	9.5	100.0	18.4	0.0	7.7
Cassava, raw (Cassava, tuber, raw)	436	25.2	9,038	19.8	17.3	15.6	2.3	2.5	86.5	62.8	66.1	66.1	63.2	60.1	0.0	63.2	48.0	49.2
Coconut (Coconut, mature kernel)	103	6.0	4,798	10.5	10.4	11.5	76.0	0.0	1.5	14.9	6.9	11.3	8.5	16.0	0.0	5.8	39.4	28.9
Fufu (Cassava, bread, fermented)	960	55.4	30,064	65.8	66.4	59.5	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red oil (from fruit) (Oil, palm, red)	2	0.1	343	0.7	0.5	0.0	4.0	51.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	1,734	100	45,709	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% target met					100	53	51	21	188	14	17	18	27	27	5	18	12	26

Table 7: LR02 Micronutrient Nutritious (NUT) diet summary, annual

The edible weight and cost of the foods selected for an **average household of 5** for the whole year for a **nutritious (NUT) diet** with the percentage contributed by each food in terms of weight, cost, energy, protein and fat, the percentage contribution of each food for eight vitamins and four minerals and the percentage of the total target met for each nutrient, averaged across the seasons in the **LR02 North/Central Rice with Cassava & Market Gardening livelihood zone**

Micronutrient Nutritious (NUT) Food List	Quantity (Kg)	% quantity	Cost (LRD)	% cost	% energy	% protein	% fat	% vit A	% vit C	% vit B1	% vit B2	% niacin	% vit B6	% folic acid	% vit B12	% calcium	% iron	% zinc
Benny seeds, dried, raw (Sesame, seeds, whole, dried, raw)	3	0.1	1,283	0.9	0.4	0.5	1.2	0.0	0.0	0.8	0.1	0.3	0.4	0.2	0.0	1.2	0.5	1.3
Bony fish, fresh, raw (Fish, mackerel, raw)	95	3.7	37,544	27.5	3.0	19.2	4.5	1.1	0.0	5.8	3.4	18.9	8.2	0.1	60.6	1.3	6.7	3.1
Breadnut, raw or cooked (Breadnut, raw)	234	9.1	8,994	6.6	13.1	14.3	2.2	0.9	10.0	5.6	3.3	3.9	20.4	12.6	0.0	11.0	8.7	17.7
Breast milk	194	7.6	0	0.0	3.3	2.1	7.1	3.0	1.2	1.8	1.7	3.2	0.4	1.4	5.0	2.6	0.0	1.6
Cassava, raw (Cassava, tuber, raw)	759	29.6	18,219	13.3	30.1	9.0	1.9	0.3	35.4	13.2	9.7	19.2	14.5	14.9	0.0	15.7	9.4	17.3
Catfish, raw (Fish, catfish, channel, wild, raw)	1	0.0	177	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Coconut (Coconut, mature kernel)	215	8.4	17,466	12.8	21.6	7.9	74.5	0.0	0.7	3.7	1.2	3.9	2.3	4.7	0.0	1.7	9.2	12.1
Country rice (Rice, brown, raw)	50	2.0	6,443	4.7	4.6	4.0	1.0	0.0	0.0	8.2	0.9	9.4	5.6	1.7	0.0	0.5	1.7	6.8
Fever leaf, raw (Leaf, fever, raw)	143	5.6	5,716	4.2	3.6	11.1	1.2	12.7	8.7	15.6	16.8	8.7	9.3	13.8	0.0	19.0	13.9	6.6
Fufu (Cassava, bread, fermented)	64	2.5	2,143	1.6	4.4	1.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kpakutuweh (Bean, adzuki, mature, raw)	4	0.1	694	0.5	0.3	0.7	0.0	0.0	0.0	0.7	0.2	0.4	0.3	1.8	0.0	0.1	0.3	1.2
Palava sauce, plato (Leaf, jute, raw)	213	8.3	11,300	8.3	3.2	8.6	0.6	17.2	26.5	13.9	28.9	9.6	13.8	20.6	0.0	36.8	15.8	6.3
Purple sweet potato, raw (Sweet potato, purple skin, raw)	198	7.7	6,609	4.8	5.3	1.3	0.5	0.2	10.8	6.7	3.1	5.9	8.9	1.8	0.0	3.0	5.0	5.3
Red oil (from fruit) (Oil, palm, red)	4	0.2	957	0.7	1.0	0.0	4.2	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Snail (Snail, sea)	9	0.3	11,640	8.5	0.2	1.0	0.2	0.0	0.1	0.3	0.6	1.4	0.1	0.1	34.1	0.0	4.3	11.7
Sweet potato leaf (Leaf, sweet potato, raw)	372	14.5	5,883	4.3	4.9	16.8	0.7	56.4	6.4	21.0	29.5	14.2	15.3	24.4	0.0	6.6	23.7	7.2
Yellow sweet potato, raw (Sweet potato, yellow, raw)	5	0.2	172	0.1	0.1	0.1	0.0	0.2	0.2	0.2	0.0	0.1	0.3	0.2	0.0	0.1	0.1	0.1
Total	100	100	136,580	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% target met					100	159	109	299	800	120	196	109	209	191	100	126	107	129

Table 8: LR02 Micronutrient Nutritious (NUT) diet summary, rainy season

The edible weight and cost of the foods selected for an **average household of 5** for one season for a **nutritious (NUT) diet** with the percentage contributed by each food in terms of weight, cost, energy, protein and fat, the percentage contribution of each food for eight vitamins and four minerals and the percentage of the total target met for each nutrient, for **rainy season** in the **LR02 North/Central Rice with Cassava & Market Gardening livelihood zone**

Micronutrient Nutritious (NUT) Food List - RAINY SEASON	Quantity (Kg)	% quantity	Cost (LRD)	% cost	% energy	% protein	% fat	% vit A	% vit C	% vit B1	% vit B2	% niacin	% vit B6	% folic acid	% vit B12	% calcium	% iron	% zinc
Benny seeds, dried, raw (Sesame, seeds, whole, dried, raw)	4	0.2	2,001	1.5	0.6	0.6	2.0	0.0	0.0	1.2	0.2	0.5	0.7	0.3	0.0	1.9	0.8	2.4
Bony fish, fresh, raw (Fish, mackerel, raw)	148	5.8	58,562	43.8	4.8	25.7	7.6	1.5	0.0	9.3	5.2	29.2	12.2	0.1	94.5	2.0	10.3	5.5
Breadnut, raw or cooked (Breadnut, raw)	364	14.2	14,029	10.5	20.5	19.1	3.7	1.3	17.4	9.0	5.0	6.0	30.3	18.9	0.0	17.3	13.2	31.3
Breast milk	194	7.6	0	0.0	3.3	1.8	7.7	2.6	1.4	1.8	1.7	3.1	0.4	1.3	5.0	2.6	0.0	1.8
Cassava, raw (Cassava, tuber, raw)	757	29.5	15,689	11.7	30.0	7.7	2.0	0.3	39.7	13.5	9.5	19.1	13.8	14.3	0.0	15.7	9.2	19.6
Catfish, raw (Fish, catfish, channel, wild, raw)	< 1	0.0	277	0.2	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.5	0.0	0.0	0.0
Coconut (Coconut, mature kernel)	176	6.9	19,892	14.9	17.8	5.6	66.4	0.0	0.7	3.2	1.0	3.2	1.8	3.7	0.0	1.4	7.4	11.3
Country rice (Rice, brown, raw)	14	0.5	1,550	1.2	1.3	1.0	0.3	0.0	0.0	2.3	0.2	2.6	1.5	0.4	0.0	0.1	0.4	2.1
Fever leaf, raw (Leaf, fever, raw)	223	8.7	8,916	6.7	5.6	14.8	2.0	16.8	15.2	24.9	25.6	13.5	13.8	20.7	0.0	29.8	21.2	11.7
Fufu (Cassava, bread, fermented)	98	3.8	3,302	2.5	6.8	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Palava sauce, plato (Leaf, jute, raw)	121	4.7	3,742	2.8	1.8	4.2	0.4	8.3	16.9	8.1	16.0	5.4	7.5	11.2	0.0	21.0	8.8	4.1
Red oil (from fruit) (Oil, palm, red)	7	0.3	1,419	1.1	1.5	0.0	6.7	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweet potato leaf (Leaf, sweet potato, raw)	459	17.9	4,358	3.3	6.1	17.8	0.9	59.3	8.8	26.6	35.6	17.4	18.0	28.9	0.0	8.2	28.6	10.1
Total	2,566	100	133,736	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% target met					100	186	100	351	713	117	201	110	219	199	100	126	110	113

Table 9: LR02 Micronutrient Nutritious (NUT) diet summary, dry season

The edible weight and cost of the foods selected for an average family of 5 for one season for a nutritious (NUT) diet with the percentage contributed by each food in terms of weight, cost, energy, protein and fat, the percentage contribution of each food for eight vitamins and four minerals and the percentage of the total target met for each nutrient, for dry season in the LR02 North/Central Rice with Cassava & Market Gardening livelihood zone.

Micronutrient Nutritious (NUT) Food List - DRY SEASON	Quantity (Kg)	% quantity	Cost (LRD)	% cost	% energy	% protein	% fat	% vit A	% vit C	% vit B1	% vit B2	% niacin	% vit B6	% folic acid	% vit B12	% calcium	% iron	% zinc
Breast milk	194	7.6	0	0.0	3.3	3.0	6.2	4.4	1.0	1.7	1.8	3.2	0.4	1.5	5.0	2.6	0.0	1.3
Cassava, raw (Cassava, tuber, raw)	761	29.6	22,738	16.1	30.2	12.9	1.6	0.4	29.8	12.7	10.2	19.6	15.8	16.2	0.0	15.6	9.8	14.3
Coconut (Coconut, mature kernel)	283	11.0	13,133	9.3	28.5	15.0	86.1	0.0	0.8	4.7	1.7	5.2	3.3	6.8	0.0	2.3	12.7	13.2
Country rice (Rice, brown, raw)	115	4.5	15,183	10.7	10.5	13.2	2.1	0.0	0.0	18.1	2.2	22.0	13.9	4.1	0.0	1.2	3.9	12.9
Fufu (Cassava, bread, fermented)	3	0.1	73	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kpakutuweh (Bean, adzuki, mature, raw)	10	0.4	1,933	1.4	0.8	2.9	0.0	0.0	0.0	1.9	0.6	1.0	0.8	5.5	0.0	0.3	0.9	2.8
Palava sauce, plato (Leaf, jute, raw)	376	14.7	24,801	17.5	5.8	21.8	0.9	44.1	39.3	23.5	53.5	17.2	26.7	39.3	0.0	64.9	29.2	9.2
Peas (yellow or green), dried, raw (Peas, split, raw)	22	0.8	3,734	2.6	1.9	7.8	0.2	0.1	0.1	6.5	1.2	2.4	0.9	5.2	0.0	0.6	1.8	3.6
Purple sweet potato, raw	550	21.4	18,415	13.0	14.8	5.1	1.2	0.8	25.3	17.9	9.0	16.8	27.2	5.4	0.0	8.4	14.6	12.2
Red oil (from fruit) (Oil, palm, red)	< 1	0.0	133	0.1	0.2	0.0	0.6	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Snail (Snail, sea)	24	1.0	32,431	22.9	0.6	4.1	0.6	0.1	0.1	0.8	1.7	4.0	0.3	0.3	95.0	0.1	12.4	26.9
Sweet potato leaf (Leaf, sweet potato, raw)	216	8.4	8,606	6.1	2.9	13.9	0.4	47.4	3.1	11.7	17.9	8.4	9.7	15.3	0.0	3.8	14.3	3.5
Yellow sweet potato, raw (Sweet potato, yellow, raw)	13	0.5	479	0.3	0.4	0.3	0.0	0.8	0.5	0.5	0.1	0.3	0.8	0.6	0.0	0.2	0.3	0.3
Total	2,568	100	141,659	100	100	100	100	100										
% target met					100	111	124	207	954	125	187	108	191	177	100	127	103	156

*The DRY NUT has included snail (1 market)

Table 10: LR02 Food Habits Nutritious (FHAB) diet summary, annual

The edible weight and cost of the foods selected for an average household of 5 for the whole year for a food habits nutritious (FHAB) diet with the percentage contributed by each food in terms of weight, cost, energy, protein and fat, the percentage contribution of each food for eight vitamins and four minerals and the percentage of the total target met for each nutrient, averaged across the seasons in the LR02 North/Central Rice with Cassava & Market Gardening livelihood zone

Food Habits Nutritious (FHAB) Food List	Quantity (Kg)	% quantity	Cost (LRD)	% cost	% energy	% protein	% fat	% vit A	% vit C	% vit B1	% vit B2	% niacin	% vit B6	% folic acid	% vit B12	% calcium	% iron	% zinc
Agro oil (Oil, vegetable)	2	0.1	697	0.5	0.5	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Benny seeds, dried, raw (Sesame, seeds, whole, dried, raw)	13	0.5	7,039	4.7	2.0	2.2	6.4	0.0	0.0	3.6	0.6	1.7	2.1	1.0	0.0	5.9	2.8	7.1
Bony fish, fresh, raw (Fish, mackerel, raw)	93	3.8	36,954	24.6	3.0	17.4	4.7	1.0	0.0	5.3	3.4	18.5	7.6	0.1	59.6	1.2	6.8	3.2
Breadnut, raw or cooked (Breadnut, raw)	280	11.5	10,793	7.2	15.8	15.8	2.8	1.0	12.9	6.3	4.0	4.6	23.1	14.2	0.0	12.5	10.6	22.2
Breast milk	194	8.0	0	0.0	3.3	1.9	7.6	2.7	1.3	1.7	1.8	3.1	0.4	1.3	5.0	2.5	0.0	1.6
Butter beans (Bean, lima, dried)	3	0.1	563	0.4	0.1	0.3	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.3	0.0	0.0	0.2	0.3
Cassava, raw (Cassava, tuber, raw)	508	20.8	12,211	8.1	20.1	5.5	1.3	0.2	25.6	8.3	6.6	12.8	9.1	9.3	0.0	9.9	6.4	12.1
Catfish, raw (Fish, catfish, channel, wild, raw)	2	0.1	747	0.5	0.1	0.3	0.1	0.0	0.0	0.2	0.0	0.1	0.0	0.0	1.2	0.0	0.1	0.1
Coconut (Coconut, mature kernel)	134	5.5	11,826	7.9	13.5	4.6	49.6	0.0	0.5	2.2	0.8	2.4	1.4	2.8	0.0	1.0	5.9	7.9
Country beans (Bean, pinto, immature, raw)	4	0.1	512	0.3	0.1	0.2	0.0	0.0	0.1	0.3	0.2	0.3	0.1	0.3	0.0	0.1	0.1	0.1
Country rice (Rice, brown, raw)	63	2.6	7,843	5.2	5.8	4.7	1.4	0.0	0.0	9.7	1.2	11.8	6.6	1.9	0.0	0.6	2.1	9.0
Fever leaf, raw (Leaf, fever, raw)	111	4.6	4,450	3.0	2.8	7.9	1.0	8.8	7.3	11.3	13.2	6.8	6.8	10.1	0.0	14.0	11.1	5.4
Fufu (Cassava, bread, fermented)	147	6.0	4,659	3.1	10.1	2.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gari (Cassava, root, dried meal)	16	0.7	1,767	1.2	1.3	0.4	0.1	0.0	2.0	2.0	0.2	1.2	2.3	0.4	0.0	0.3	0.6	0.8
Kpakutuweh (Bean, adzuki, mature, raw)	14	0.6	2,893	1.9	1.2	2.6	0.1	0.0	0.0	2.6	0.8	1.4	1.0	6.6	0.0	0.4	1.2	4.9
Palava sauce, plato (Leaf, jute, raw)	239	9.8	11,074	7.4	3.7	8.9	0.7	17.3	32.2	14.6	32.8	10.7	14.7	21.6	0.0	39.3	18.2	7.4
Palm kernel oil (Oil, palm, local)	15	0.6	3,633	2.4	3.3	0.0	14.8	10.2	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Peas (yellow or green), dried, raw (Peas, split, mature, raw)	17	0.7	3,020	2.0	1.5	4.0	0.2	0.0	0.1	5.1	1.0	1.9	0.6	3.7	0.0	0.4	1.4	3.7
Purple sweet potato, raw (Sweet potato, purple skin, raw)	133	5.4	4,440	3.0	3.6	0.8	0.3	0.1	7.8	4.2	2.1	4.0	5.7	1.1	0.0	1.9	3.5	3.7
Red oil (from fruit) (Oil, palm, red)	4	0.2	678	0.5	0.9	0.0	3.7	5.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sardines, canned in oil (Fish, sardines in oil, canned)	14	0.6	15,009	10.0	0.8	3.4	2.0	0.1	0.0	0.5	0.9	2.8	0.5	0.1	34.1	2.5	3.8	1.3
Sweet potato leaf (Leaf, sweet potato, raw)	372	15.3	6,880	4.6	4.9	15.5	0.7	50.4	6.9	19.7	29.9	14.2	14.5	22.8	0.0	6.3	24.2	7.6
Yellow sweet potato, raw (Sweet potato, yellow, raw)	59	2.4	2,237	1.5	1.8	0.9	0.1	2.2	3.3	2.2	0.6	1.6	3.3	2.4	0.0	1.0	1.2	1.6
Total	2,440	100	149,924	100	100	100	100	100										
% target met					100	173	102	335	740	128	194	110	221	204	100	133	105	123

Table 11: LR02 Food Habits Nutritious (FHAB) diet summary, rainy season

The edible weight and cost of the foods selected for an average household of 5 for one season for a food habits nutritious (FHAB) diet with the percentage contributed by each food in terms of weight, cost, energy, protein and fat, the percentage contribution of each food for eight vitamins and four minerals and the percentage of the total target met for each nutrient, for rainy season in the LR02 North/Central Rice with Cassava & Market Gardening livelihood zone

Food Habits Nutritious (FHAB) Food List - RAINY	Quantity	%	Cost	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
	(Kg)	quantity	(LRD)	cost	energy	protein	fat	vit A	vit C	vit B1	vit B2	niacin	vit B6	folic acid	vit B12	calcium	iron	zinc
Agro oil (Oil, vegetable)	2	0.1	625	0.4	0.4	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Benny seeds, dried, raw (Sesame, seeds, whole, dried, raw)	9	0.4	4,319	3.1	1.3	1.3	4.3	0.0	0.0	2.6	0.4	1.1	1.3	0.6	0.0	3.8	1.8	4.8
Bony fish, fresh, raw (Fish, mackerel, raw)	146	6.0	57,641	41.5	4.7	24.7	7.5	1.5	0.0	9.0	5.1	29.1	11.5	0.1	93.0	1.8	10.3	5.2
Breadnut, raw or cooked (Breadnut, raw)	437	17.9	16,836	12.1	24.6	22.5	4.5	1.5	21.3	10.6	6.0	7.3	34.6	22.2	0.0	19.1	16.1	35.9
Breast milk	194	7.9	0	0.0	3.3	1.8	7.7	2.6	1.4	1.8	1.7	3.2	0.4	1.3	5.0	2.4	0.0	1.7
Cassava, raw (Cassava, tuber, raw)	505	20.6	10,459	7.5	20.0	5.0	1.3	0.2	26.9	8.9	6.3	12.9	8.7	9.3	0.0	9.6	6.2	12.5
Catfish, raw (Fish, catfish, channel, wild, raw)	3	0.1	1,165	0.8	0.1	0.5	0.1	0.0	0.0	0.3	0.1	0.2	0.1	0.0	1.9	0.0	0.1	0.1
Coconut (Coconut, mature kernel)	132	5.4	14,841	10.7	13.3	4.1	49.6	0.0	0.5	2.3	0.7	2.4	1.3	2.7	0.0	1.0	5.6	8.0
Country rice (Rice, brown, raw)	39	1.6	4,384	3.2	3.6	2.6	0.9	0.0	0.0	6.5	0.7	7.4	3.9	1.2	0.0	0.4	1.3	5.8
Fever leaf, raw (Leaf, fever, raw)	174	7.1	6,942	5.0	4.4	11.3	1.6	13.1	12.0	19.2	19.8	10.7	10.2	15.8	0.0	21.4	16.8	8.7
Fufu (Cassava, bread, fermented)	163	6.7	5,466	3.9	11.2	2.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kpakutuweh (Bean, adzuki, mature, raw)	5	0.2	1,312	0.9	0.4	0.9	0.0	0.0	0.0	1.0	0.3	0.5	0.4	2.5	0.0	0.2	0.5	1.9
Palava sauce, plato (Leaf, jute, raw)	209	8.6	6,488	4.7	3.2	7.1	0.6	14.4	29.8	13.9	27.5	9.5	12.3	19.0	0.0	33.6	15.5	6.8
Palm kernel oil (Oil, palm, local)	17	0.7	4,255	3.1	3.8	0.0	17.4	11.3	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red oil (from fruit) (Oil, palm, red)	2	0.1	361	0.3	0.4	0.0	1.7	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweet potato leaf (Leaf, sweet potato, raw)	409	16.7	3,890	2.8	5.4	15.5	0.8	52.9	8.0	23.6	31.5	15.7	15.3	25.2	0.0	6.8	25.9	8.6
Total	2,445	100	138,984	100														
% target met					100	190	100	351	700	118	203	108	231	203	100	137	108	119

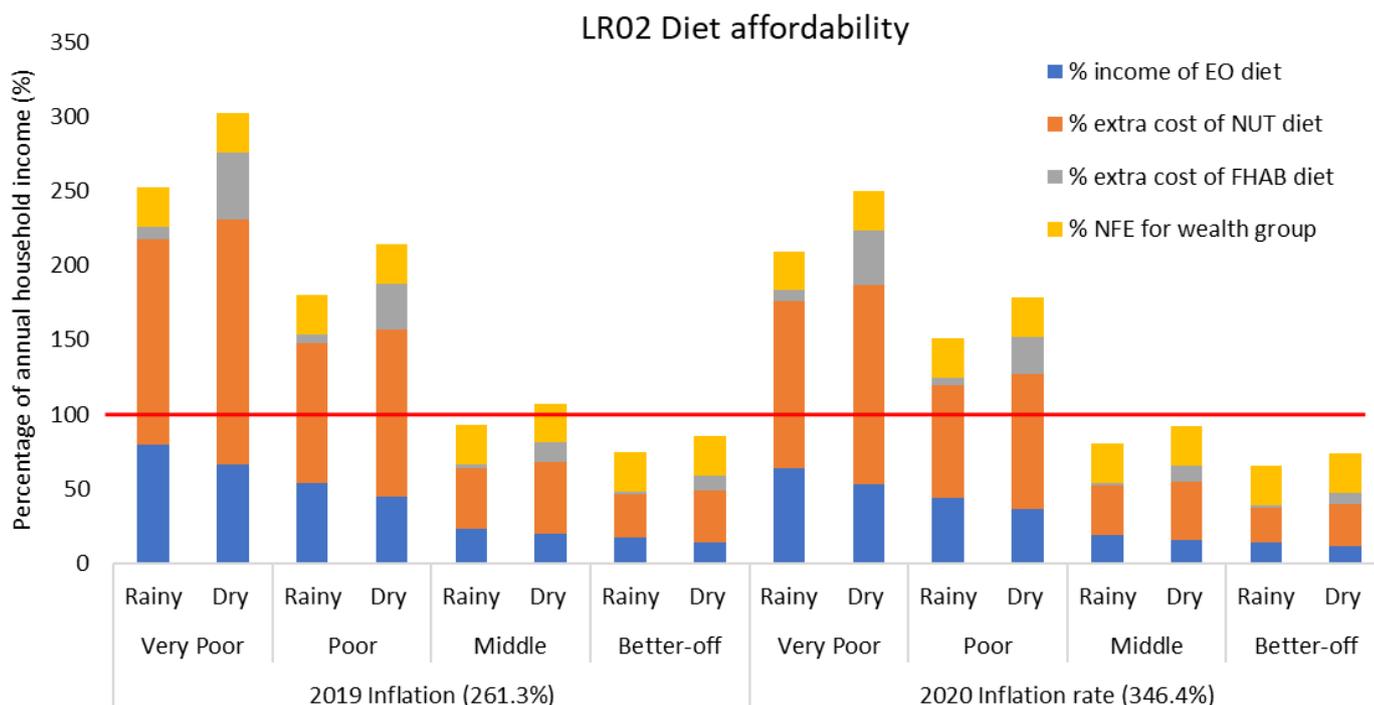
Table 12: LR02 Food Habits Nutritious (FHAB) diet summary, dry season

The edible weight and cost of the foods selected for an average household of 5 for one season for a food habits nutritious (FHAB) diet with the percentage contributed by each food in terms of weight, cost, energy, protein and fat, the percentage contribution of each food for eight vitamins and four minerals and the percentage of the total target met for each nutrient, for dry season in the LR02 North/Central Rice with Cassava & Market Gardening livelihood zone

Food Habits Nutritious (FHAB) Food List - DRY	Quantity	%	Cost	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
	(Kg)	quantity	(LRD)	cost	energy	protein	fat	vit A	vit C	vit B1	vit B2	niacin	vit B6	folic acid	vit B12	calcium	iron	zinc
Agro oil (Oil, vegetable)	3	0.1	824	0.5	0.6	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Benny seeds, dried, raw (Sesame, seeds, whole, dried, raw)	21	0.9	11,900	7.0	3.1	4.4	10.0	0.0	0.0	5.1	1.1	2.6	3.7	1.5	0.0	9.8	4.7	10.7
Breast milk	194	8.0	0	0.0	3.3	2.3	7.4	2.9	1.2	1.4	1.9	3.1	0.4	1.3	5.0	2.6	0.0	1.5
Butter beans (Bean, lima, dried)	9	0.4	1,568	0.9	0.3	0.9	0.0	0.0	0.0	0.5	0.2	0.8	0.2	0.9	0.0	0.1	0.5	0.7
Cassava, raw (Cassava, tuber, raw)	513	21.1	15,339	9.1	20.3	6.7	1.3	0.2	23.6	7.3	7.2	12.7	10.0	9.4	0.0	10.5	6.8	11.5
Coconut (Coconut, mature kernel)	139	5.7	6,440	3.8	14.0	5.7	49.8	0.0	0.5	2.0	0.9	2.5	1.5	2.8	0.0	1.1	6.4	7.7
Country beans (Bean, pinto, immature, raw)	10	0.4	1,426	0.8	0.2	0.6	0.1	0.0	0.3	0.8	0.5	0.8	0.4	0.9	0.0	0.2	0.4	0.3
Country rice (Rice, brown, raw)	107	4.4	14,022	8.3	9.7	9.5	2.3	0.0	0.0	14.2	2.1	19.5	12.0	3.2	0.0	1.1	3.7	14.2
Fufu (Cassava, bread, fermented)	118	4.9	3,219	1.9	8.2	2.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gari (Cassava, root, dried meal)	45	1.9	4,923	2.9	3.7	1.3	0.3	0.0	5.0	5.0	0.6	3.3	7.0	1.2	0.0	1.0	1.6	2.1
Kpakutuweh (Bean, adzuki, mature, raw)	29	1.2	5,718	3.4	2.5	6.7	0.2	0.0	0.0	4.7	1.8	2.8	2.3	13.8	0.0	0.9	2.8	9.7
Palava sauce, plato (Leaf, jute, raw)	292	12.0	19,266	11.4	4.5	13.2	0.9	23.1	35.9	15.6	43.5	12.8	19.4	26.2	0.0	50.2	23.3	8.6
Palm kernel oil (Oil, palm, local)	11	0.4	2,522	1.5	2.4	0.0	10.5	8.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Peas, (yellow or green split peas), dried, raw (Peas, split, purple sweet potato, raw (Sweet potato, purple skin, pale	48	2.0	8,414	5.0	4.3	13.6	0.5	0.1	0.1	12.5	2.9	5.1	1.9	10.1	0.0	1.3	4.1	9.6
Red oil (from fruit) (Oil, palm, red)	7	0.3	1,242	0.7	1.7	0.0	7.1	12.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sardines, canned in oil (Fish, sardines in oil, canned)	40	1.7	41,819	24.7	2.3	11.3	5.3	0.4	0.0	1.1	2.6	7.6	1.5	0.3	95.0	7.3	11.1	3.5
Sweet potato leaf (Leaf, sweet potato, raw)	306	12.6	12,220	7.2	4.0	15.4	0.6	45.4	5.2	14.1	26.6	11.4	12.9	18.6	0.0	5.4	21.0	5.9
Yellow sweet potato, raw (Sweet potato, yellow, raw)	166	6.8	6,232	3.7	5.0	2.9	0.3	6.8	8.3	5.3	1.7	4.2	9.9	6.5	0.0	2.8	3.5	4.2
Total	2,430	100	169,466	100														
% target met					100	143	105	307	812	147	179	112	205	206	100	128	100	131

Annex 5: LR02 Diet affordability, comparison of 2019 and 2020 inflation rate

Figure 7: Comparison of the affordability of the diets in dry and rainy seasons for four wealth groups in LR02, including essential NFE as % of annual household income, using 2019 and 2020 inflation rates



Seasonal variation by wealth group, using 2019 and 2020 inflation rates

LR02 Inflation Year	Wealth group	Season	% income of EO diet	% extra cost of NUT diet	% extra cost of FHAB diet	% NFE for wealth group
2019 Inflation (261.3%)	Very Poor	Rainy	79.2	138.5	8.5	26.4
		Dry	65.9	164.8	45.3	26.4
	Poor	Rainy	53.9	94.2	5.8	26.4
		Dry	44.8	112.1	30.8	26.4
	Middle	Rainy	23.2	40.6	2.5	26.4
		Dry	19.3	48.3	13.3	26.4
	Better-off	Rainy	16.8	29.4	1.8	26.4
		Dry	14.0	35.0	9.6	26.4
2020 Inflation rate (346.4%)	Very Poor	Rainy	64.1	112.1	6.9	26.4
		Dry	53.3	133.4	36.6	26.4
	Poor	Rainy	43.6	76.2	4.7	26.4
		Dry	36.2	90.7	24.9	26.4
	Middle	Rainy	18.8	32.9	2.0	26.4
		Dry	15.6	39.1	10.7	26.4
	Better-off	Rainy	13.6	23.8	1.5	26.4
		Dry	11.3	28.3	7.8	26.4

Annex 6: LR04 Food list

LR04 Food list with local name, English food list name, average price per 100g in the rainy and dry seasons, annual average, percentage price change from 2019 rainy to 2020 dry season, and variation between retrospective dry season data (2019) and actual dry season data (2020), and percentage variation from 2019 dry to 2020 dry season.

Coastal Plain Cassava with Rice and Inland Fishing Market Food List	Average Price Per 100g			Seasonal change (%)	Dry season - Annual variation		
	Rainy	Dry	Annual Average		2019 Retrospective	2020 Actual	Annual change (%)
Grains and grain-based products							
Baking flour (Wheat, flour, 72% extraction)	17.56	17.70	17.62	101%	11.47	17.70	154%
Brown bread (Bread, wheat, wholemeal)	18.73	48.08	33.41	257%	9.37	48.08	513%
Corn meal (Corn flour, 96% extraction)	35.32	24.37	31.95	69%	24.16	24.37	101%
Corn raw, stick (Maize, on the cob, yellow)		10.63	10.63			10.63	
Corn seed (Maize, dried, raw)	30.71	39.15	35.40	127%	21.91	39.15	179%
Country rice (Rice, brown, raw)	12.22	13.30	12.58	109%	10.54	13.30	126%
Rice, white, raw (Rice, white, raw)	14.17	13.76	13.99	97%	8.77	13.76	157%
Spaghetti (Pasta)	41.43	41.48	41.45	100%	31.09	41.48	133%
Roots and tubers							
Acra ground pea (Tiger nut, tuber dried)		38.89	38.89			38.89	
Boiled potato, cooked (Potato, cooked)	61.57		61.57		30.79		
Cassava flour (Cassava, flour)	29.61		29.61		19.74		
Cassava, raw (Cassava, tuber, raw)	2.46	3.00	2.67	122%	1.69	3.00	178%
Cassava, roasted, boiled (Cassava, tuber, cooked)							
Eddoes (Cocoyam, tuber, raw)	15.61	15.11	15.36	97%	13.35	15.11	113%
Fufu (Cassava, bread, fermented)	3.31	2.90	3.16	88%	2.42	2.90	120%
Garri (Cassava, root, dried meal)	12.92	9.34	11.41	72%	9.06	9.34	103%
Purple sweet potato, raw (Sweet potato, purple skin, pale yellow flesh, raw)	5.51	3.65	4.58	66%	3.82	3.65	96%
Yam, raw (Yam, tuber, raw)	6.71	5.52	6.48	82%	5.43	5.52	102%
Yellow sweet potato, raw (Sweet potato, yellow, raw)	6.39	9.22	6.86	144%	3.76	9.22	245%
Legumes, nuts and seeds							
Benny seeds, dried, raw (Sesame, seeds, whole, dried, raw)	57.59	47.52	53.98	83%	34.41	47.52	138%
Bitter cola, dried (Colanut, dried, raw)	215.49	31.20	162.84	14%	139.06	31.20	22%

Bitter cola (Colanut, raw)	29.22	24.64	27.49	84%	16.75	24.64	147%
Black beans (Bean, black)	41.37		41.37		27.58		
Black-eyed beans, raw (Cowpea, blackeyes, immature, raw)	22.35	23.52	22.90	105%	14.16	23.52	166%
Butter beans (Bean, lima, dried)	35.90	36.08	35.97	101%	25.72	36.08	140%
Country beans (Bean, pinto, immature, raw)		18.58	18.58			18.58	
Kpakutuweh (Bean, adzuki, mature, raw)	21.86	22.77	22.27	104%	14.24	22.77	160%
Lentils (Lentil, dried, raw)	55.05		55.05		41.29		
Peanut paste (Groundnut paste)	60.22	49.71	56.31	83%	38.52	49.71	129%
Peanuts with shell (Peanut, with shell)	43.42	23.63	36.83	54%	21.71	23.63	109%
Peas, (yellow or green split peas), dried (Peas, split, mature, raw)	17.41	24.55	19.79	141%	12.75	24.55	193%
Pink peanuts, no shell, raw (Groundnut, rose, shelled, dried, raw)	40.05	52.79	45.84	132%	28.64	52.79	184%
Red peanuts, no shell, raw (Groundnut, red, shelled, dried, raw)	51.43	58.35	53.08	113%	28.79	58.35	203%
Meat and offal							
Chicken back (Chicken)		42.03	42.03			42.03	
Chicken breast dry (Chicken, breast, without skin, raw)	51.38	46.23	49.67	90%	41.46	46.23	112%
Chicken feet (Chicken, feet, boiled)	56.90	39.32	51.40	69%	36.68	39.32	107%
Chicken leg (Chicken, leg)	54.29	37.69	49.31	69%	24.45	37.69	154%
Chicken meat, light meat, no skin, raw (Chicken, light meat, flesh, raw)	43.53	53.11	48.32	122%	21.77	53.11	244%
Chicken meat, light meat, with skin, cooked (Chicken, light meat, flesh and skin, cooked)	37.66		37.66		28.25		
Chicken meat, light meat, with skin, raw (Chicken, light meat, flesh and skin, raw)	33.80	35.21	34.71	104%	33.80	35.21	104%
Chicken neck, with skin, raw (Chicken, neck, with skin, raw)	32.78	36.05	34.96	110%	32.78	36.05	110%
Chicken sausage (Frankfurter)	58.82		58.82		29.27		
Chicken thigh meat, no skin, raw (Chicken, thigh meat, without skin, raw)	35.37		35.37		35.37		
Chicken thigh meat, with skin, raw (Chicken, thigh, with skin, raw)	23.27	53.16	45.69	228%	23.27	53.16	228%
Chicken thigh meat, with skin, cooked (Chicken, thigh, with skin, cooked)	45.48		45.48		45.48		
Chicken wing meat, no skin, raw (Chicken, wing meat, without skin, raw)	33.49	68.29	50.89	204%	33.49	68.29	204%
Chicken wing meat, with skin raw (Chicken, wing meat, with skin, raw)	53.17	49.57	52.49	93%	33.81	49.57	147%
Cow bone (Beef, bone marrow)		30.47	30.47			30.47	
Cow meat, boneless, raw (Beef, meat, with fat, boneless, raw)	35.47		35.47		17.73		

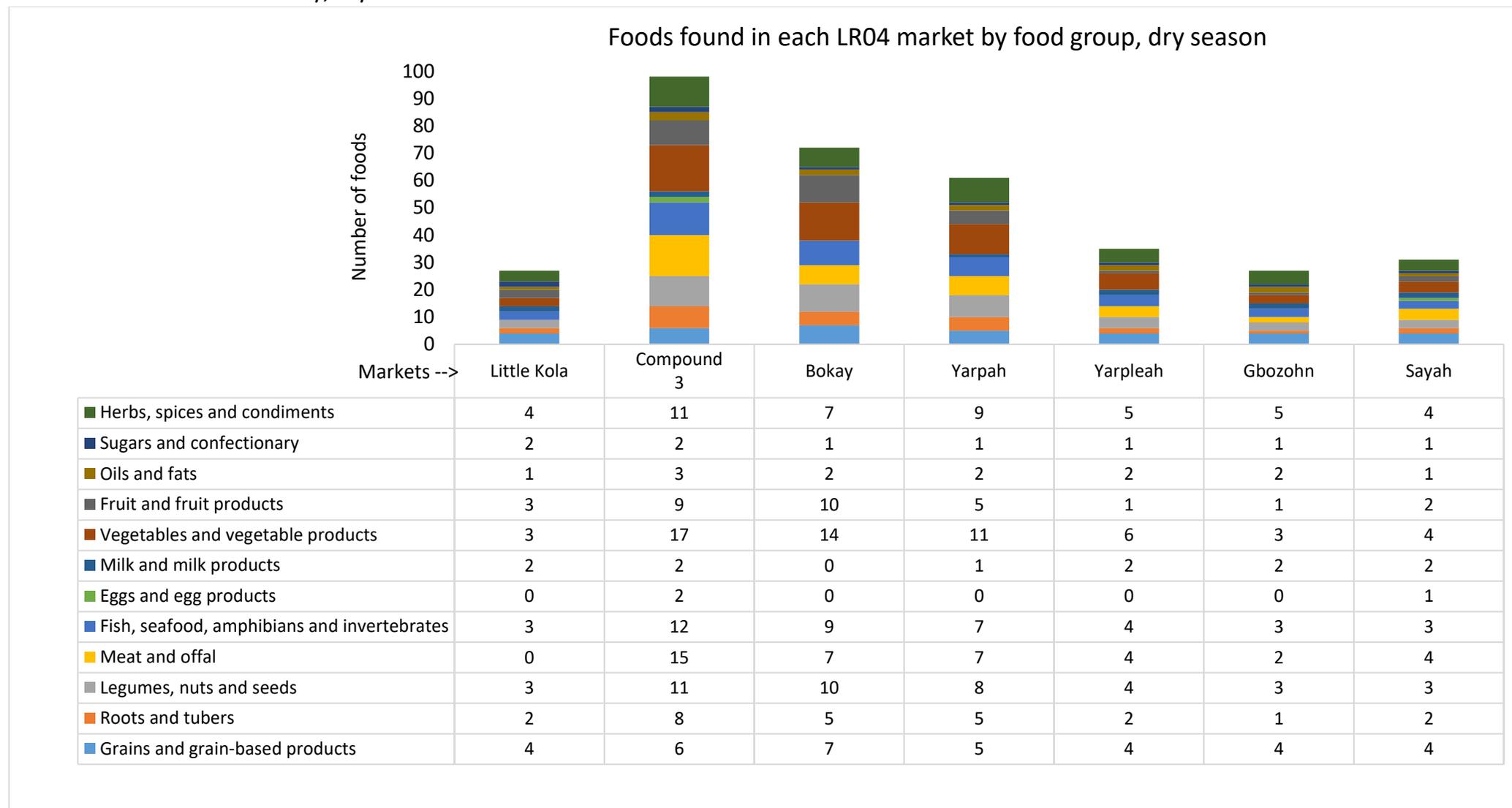
Cow skin (Beef or pork, skin, raw)		85.36	85.36		57.87	85.36	148%
Cow tongue (Beef, tongue, raw)		83.80	83.80			83.80	
Gazelle, dried (Water buck or gazelle, dried)	130.20		130.20				
Gazelle, raw (Gazelle, raw)							
Groundhog (Muskrat, raw)							
Pig feet (Pork, feet)	40.07	38.28	39.32	96%	24.08	38.28	159%
Pig meat, bone, raw (Pork, with bone)	36.82	31.23	35.42	85%	35.53	31.23	88%
Pork sausage (Pork, sausage)		58.82	58.82		16.85	58.82	349%
Spare ribs, raw (Pork, back ribs, raw)	33.71	51.10	41.89	152%		51.10	
Turkey neck (Turkey neck, with skin, raw)		31.02	31.02			31.02	
Turkey wing (Turkey wing, with skin, raw)		50.96	50.96			50.96	
Turkey (Turkey)	75.04		75.04		37.52		
Fish, seafood, amphibians and invertebrates							
Bony fish, fresh, raw (Fish, mackerel, raw)	29.26	35.18	31.68	120%	17.95	35.18	196%
Bony fish, smoked, dried (Fish, smoked, dried)	71.95	74.26	72.62	103%	44.14	74.26	168%
Bumble worms, grubs (Mopanie worm, canned)							
Cassava fish (Fish, croaker, atlantic, raw)	91.33	169.85	138.44	186%	79.31	169.85	214%
Catfish, dried (Fish, catfish, dried)	73.96	118.77	96.36	161%	73.96	118.77	161%
Catfish, raw (Fish, catfish, channel, wild, raw)	41.96		41.96		20.98		
Clam (Clam, raw)	54.86		54.86		21.94		
Crayfish (Crayfish, wild, raw)		185.72	185.72			185.72	
Dried baby fish (Fish, cichlids, dried)	76.93	96.17	88.47	125%	42.84	96.17	224%
Dried small crayfish (Shrimp, small, dried)	203.68	308.75	256.22	152%	101.84	308.75	303%
Gbuka fish, raw (Fish, tilapia, raw)	159.07	117.88	140.76	74%	103.62	117.88	114%
Kangbea (Fish, dried, CotD (Atlantic Flying Fish))		140.40	140.40			140.40	
Kiss-meat (Periwinkle)	4.22	5.90	5.48	140%	5.18	5.90	114%
Red snapper fish, raw (Fish, red snapper)	31.24		31.24		62.48		
River crab, dried (Crab, fresh water, dried)		58.15	58.15			58.15	
River crab (Crab, fresh water)	47.34	59.71	52.29	126%	25.40	59.71	235%
Sardina raw (Fish, sardine, raw)	30.42	20.89	25.65	69%	30.42	20.89	69%

Sardines, canned in oil (Fish, sardines in oil, canned)	180.16	122.59	159.22	68%	131.75	122.59	93%
Shark meat, raw (Fish, shark)	96.76	120.97	99.45	125%	60.44	120.97	200%
Small dried fish (Fish, dried, CotD)	71.29	90.08	85.61	126%	56.64	90.08	159%
Snail (Snail, sea)	18.24	29.40	25.34	161%	10.84	29.40	271%
Stinker fish (Fish, ray)		72.46	72.46			72.46	
Zipper fish (Fish, african carp, raw)	58.43		58.43		49.19		
Eggs and egg products							
Boiled egg (Egg, chicken, cooked)	48.60	51.45	49.33	106%	40.16	51.45	128%
Raw egg (Egg, chicken, raw)	51.53	51.84	51.63	101%	29.02	51.84	179%
Milk and milk products							
Condensed milk, sweetened (Milk, condensed, sweetened)	75.47	98.72	81.29	131%	49.58	98.72	199%
Milk, evaporated, canned (liquid) (Milk, cow, canned, evaporated)	59.31	67.99	63.14	115%	54.83	67.99	124%
Milk, powdered (Milk, cow, powdered, whole)	141.37	102.19	122.41	72%	87.55	102.19	117%
Vegetables and vegetable products							
Bitter ball, white eggplant (Eggplant, white, raw)	9.32	25.53	15.91	274%	5.35	25.53	477%
Breadnut, raw or cooked (Breadnut, raw)	6.48	8.98	6.82	139%	3.82	8.98	235%
Cabbage (Cabbage, raw)	13.09		13.09		5.24		
Careless green (Leaf, collards, raw)	6.80	8.64	7.85	127%	5.49	8.64	157%
Cassava leaf, Gbueevah (Leaf, cassava, raw)	1.33	2.40	1.82	180%	0.67	2.40	358%
Cucumber (Cucumber, raw)	5.87	5.22	5.75	89%	3.24	5.22	161%
Eggplant leaf (Leaf, eggplant, raw)	15.03		15.03		15.03		
Eggplant (Eggplant, raw)	6.76	9.41	7.74	139%	4.45	9.41	211%
Fever leaf, raw (Leaf, fever, raw)	7.97		7.97		4.97		
Gblafee leaf (Leaf, okra, raw)	1.79	10.37	3.93	579%	0.89	10.37	1165%
Kittily dust (Kittily, eggplant seeds, powder)		81.20	81.20			81.20	
Kittily, dried (Kittily, dried)		110.23	110.23			110.23	
Kittily (Kittily, eggplant seeds, raw)	27.80		27.80		13.66		
Large country bitter ball (Chayote, fruit, raw)		2.00	2.00			2.00	
Okra dust (Okra, dust)		142.20	142.20			142.20	
Okra, dried (Okra, dried)	177.78	172.10	174.00	97%	88.89	172.10	194%

Okra (Okra, raw)	15.03	38.97	23.10	259%	8.73	38.97	446%
Onion (Onion, raw)	30.62	33.95	31.63	111%	20.04	33.95	169%
Palava sauce, plato (Leaf, jute, raw)	8.30	6.36	7.43	77%	3.77	6.36	169%
Palm cabbage (African fan palm shoots)							
Plantain, raw (Plantain, all varieties)	10.63		10.63		5.31		
Plantain, ripe, raw (Plantain, ripe, raw)	9.42	8.24	8.90	87%	6.71	8.24	123%
Pumpkin, cooked (Pumpkin, squash, cooked)		4.48	4.48			4.48	
Pumpkin, raw (Pumpkin, squash, raw)	3.20	5.13	3.66	160%	2.84	5.13	181%
Sweet potato leaf (Leaf, sweet potato, raw)	2.41	2.10	2.30	87%	1.34	2.10	157%
Water greens (Malabar spinach, cooked)	6.85	9.34	7.87	136%	3.49	9.34	268%
Worrh, mushroom (Mushroom, average)							
Fruit and fruit products							
Apple, bush (Rose apple)	6.52	8.95	7.84	137%	5.06	8.95	177%
Banana, green, booe (Banana, white flesh)	5.60	5.82	5.67	104%	3.17	5.82	184%
Banana, ripe, French banana (Banana, yellow flesh)	4.86	4.25	4.69	87%	2.19	4.25	194%
Breadfruit (Breadfruit)		1.66	1.66			1.66	
Butter pear (Avocado)		7.24	7.24			7.24	
Cherry, bush (Currant, red and white)	2.27		2.27		1.28		
Coconut, whole (Coconut, mature kernel)	4.78	5.80	5.55	121%	2.94	5.80	197%
Common plum (Mango, deep orange flesh)		7.66	7.66			7.66	
Country spice (Dattock, dried pulp)	92.45		92.45		46.23		
Golden plum (Mango, green)	2.54		2.54		2.41		
Grapefruit (Grapefruit)	3.50		3.50		2.26		
Guava (Guava, fruit)		14.10	14.10			14.10	
Lemon, Gargouee (Tangerine)	12.79		12.79		6.39		
Monkey nut (Rambutan, average or from aceh)							
Orange (Orange)	5.31		5.31		4.27		
Palm fruit (African fan palm fruit)	3.07	2.60	2.87	85%	2.38	2.60	109%
Pawpaw (Papaya, fruit, ripe)	3.40	2.25	2.73	66%	4.31	2.25	52%
Pineapple juice, Kweekpor juice (Pineapple, juice)							

Pineapple pulp, Kweekpor pulp (Pineapple, pulp)							
Pineapple, Kweekpor (Pineapple)	8.99	9.19	9.12	102%	4.50	9.19	204%
Queesuck (Cashew fruit)		4.93	4.93			4.93	
Ripe plum (Mango, ripe)		17.43	17.43			17.43	
Sausau, sour sauce (Sour sop)		2.99	2.99			2.99	
Tomato, ceedoe (Tomato, red, ripe, raw)	20.64		20.64		10.32		
Watermelon (Watermelon, fruit)		8.10	8.10			8.10	
Oils and fats							
Agro oil (Oil, vegetable)	34.37	35.03	34.67	102%	23.71	35.03	148%
Coconut oil (Oil, coconut)							
Palm kernel oil (Oil, palm, local)	40.98	17.34	29.16	42%	31.25	17.34	55%
Red oil (from fruit) (Oil, palm, red)	23.36	18.72	21.52	80%	15.42	18.72	121%
Sugars and confectionary							
Brown sugar (Sugar, brown)	33.24	34.49	34.01	104%	20.56	34.49	168%
Plantain chips (Crisp or chip, cassava, dried)	39.38	46.77	41.49	119%	19.69	46.77	238%
Sugar cane (Sugar, cane, refined)	26.31	7.61	22.71	29%	13.79	7.61	55%
Herbs, spices and condiments							
Dried chilli pepper (Chilli pepper, dried)	265.05	285.78	272.26	108%	285.78	136.33	48%
Garlic dust (Garlic, powdered)	600.00	304.17	363.33	51%	304.17	500.00	164%
Garlic, fresh (Garlic, raw)	237.50	221.67	233.18	93%	221.67	150.65	68%
Ginger root (Ginger, root, raw)	24.42	25.75	25.35	105%	25.75	11.47	45%
Green pepper (Chilli, green, raw)	59.51	72.29	69.34	121%	72.29	29.76	41%
Lime (Lime)	15.52	6.77	13.50	44%	6.77	13.21	195%
Onion dust (Onion, powdered)	219.84	116.54	168.19	53%	116.54	109.92	94%
Pepper, storage pepper (Pepper, red, hot)	55.69	44.23	53.67	79%	44.23	32.45	73%
Salt, iodized (Salt, iodized)	11.25	10.50	10.82	93%	10.50	15.68	149%
Salt (Salt)	35.36	12.52	16.67	35%	12.52	17.68	141%
Tomato dust (Tomato, powder)	37.18	53.74	42.70	145%	53.74	26.43	49%
Tomato paste (Tomato paste, concentrated)	74.10	85.00	78.25	115%	85.00	54.10	64%
Vitta (Cube, beef, dry)	84.14	100.00	93.16	119%	100.00	62.82	63%

Annex 7: LR04 Food availability, dry season



Annex 8: LR04 Annual and seasonal diet summaries

Table 13: LR04 Energy-only (EO) diet summary, annual

The edible weight and cost of the foods selected for an average household of 5 for the whole year for an energy only (EO) diets with the percentage contributed by each food in terms of weight, cost, energy, protein and fat, the percentage contribution of each food for eight vitamins and four minerals and the percentage of the total target met for each nutrient, averaged across the seasons in the LR04 Coastal Plain Cassava with Rice & Inland Fishing livelihood zone.

Energy-Only (EO) Food List	Quantity (Kg)	% quantity	Cost (LRD)	% cost	% energy	% protein	% fat	% vit A	% vit C	% vit B1	% vit B2	% niacin	% vit B6	% folic acid	% vit B12	% calcium	% iron	% zinc
Breadfruit (Breadfruit)	136	6.6	2,822	5.5	3.8	2.7	0.9	0.0	12.0	6.5	2.1	10.0	0.0	0.0	0.0	2.0	6.6	0.0
Breast milk	194	9.5	0	0.0	3.3	2.7	17.8	3.8	2.5	2.2	2.1	6.2	0.9	2.0	100.0	2.7	0.0	4.5
Cassava leaf, Gbueevah (Leaf, cassava, raw)	689	33.7	10,781	21.2	17.3	68.4	14.6	77.0	85.4	90.8	95.5	83.0	98.6	97.3	0.0	95.1	92.1	92.1
Coconut, whole (Coconut, mature kernel)	21	1.0	1,438	2.8	2.1	1.0	18.3	0.0	0.1	0.4	0.1	0.8	0.5	0.7	0.0	0.2	1.2	3.4
Fufu (Cassava, bread, fermented)	960	46.9	30,377	59.7	66.4	25.3	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Palm kernel oil (Oil, palm, local)	20	1.0	3,402	6.7	4.4	0.0	46.2	19.2	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Sugar cane (Sugar, cane, refined)	27	1.3	2,073	4.1	2.7	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total	2,047	100	50,891	100	100	100	100	100										
% target met					100	124	43	237	392	99	166	55	95	131	5	122	78	44

Table 14: LR04 Micronutrient nutritious (NUT) diet summary, annual

The edible weight and cost of the foods selected for an average household of 5 for the whole year for a nutritious (NUT) diet with the percentage contributed by each food in terms of weight, cost, energy, protein and fat, the percentage contribution of each food for eight vitamins and four minerals and the percentage of the total target met for each nutrient, averaged across the seasons in the LR04 Coastal Plain Cassava with Rice & Inland Fishing livelihood zone.

Micronutrient nutritious (NUT) Food List	Quantity (Kg)	% quantity	Cost (LRD)	% cost	% energy	% protein	% fat	% vit A	% vit C	% vit B1	% vit B2	% niacin	% vit B6	% folic acid	% vit B12	% calcium	% iron	% zinc
Breadfruit (Breadfruit)	37	1.4	770	0.8	1.0	0.5	0.1	0.0	1.5	1.1	0.3	1.3	0.0	0.0	0.3	1.0	0.0	
Breadnut, raw or cooked (Breadnut, raw)	150	5.7	9,710	10.2	8.4	8.1	1.5	0.7	5.9	2.6	1.5	2.4	12.4	5.9	0.0	4.3	4.3	9.6
Breast milk	194	7.4	0	0.0	3.3	1.8	7.7	3.3	1.1	1.3	1.3	3.1	0.4	1.0	5.0	1.6	0.0	1.3
Butter pear (Avocado)	76	2.9	7,405	7.8	3.1	1.4	11.3	0.2	1.1	1.6	1.8	4.8	4.0	3.7	0.0	0.3	0.6	2.8
Cassava leaf, Gbueevah (Leaf, cassava, raw)	957	36.3	18,668	19.6	24.1	65.4	8.8	94.0	53.6	75.8	80.9	56.6	59.1	67.8	0.0	77.1	72.4	37.5
Cassava, raw (Cassava, tuber, raw)	748	28.4	23,670	24.8	29.6	7.8	2.0	0.3	32.2	9.5	6.9	18.3	13.5	10.8	0.0	9.3	7.2	14.4
Coconut, whole (Coconut, mature kernel)	178	6.7	12,827	13.5	17.9	5.8	67.0	0.0	0.6	2.3	0.7	3.1	1.8	2.9	0.0	0.9	5.9	8.5
Country rice (Rice, brown, raw)	14	0.5	1,741	1.8	1.3	1.0	0.3	0.0	0.0	1.7	0.2	2.6	1.5	0.3	0.0	0.1	0.4	1.6
Fufu (Cassava, bread, fermented)	139	5.3	4,186	4.4	9.6	2.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gblafee leaf (Leaf, okra, raw)	64	2.4	1,437	1.5	0.7	1.6	0.2	1.2	3.3	3.3	4.9	0.5	4.0	4.5	0.0	5.6	0.6	3.2
Large country bitter ball (Chayote, fruit, raw)	52	2.0	1,217	1.3	0.3	0.4	0.1	0.0	0.6	0.4	0.3	0.9	0.8	2.9	0.0	0.3	0.2	2.2
Sardina raw (Fish, sardine, raw)	12	0.4	4,681	4.9	0.3	2.0	0.3	0.1	0.0	0.1	0.5	4.0	2.3	0.0	34.1	0.2	1.4	1.0
Snail (Snail, sea)	16	0.6	8,951	9.4	0.4	1.6	0.4	0.1	0.1	0.4	0.8	2.5	0.2	0.1	60.9	0.0	5.9	17.8
Sweet potato leaf (Leaf, sweet potato, raw)	< 1	0.0	12	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	2,637	100	95,274	100	100	100	100	100										
% target met					100	180	100	270	867	165	272	113	220	261	100	209	138	152

Table 15: LR04 Micronutrient nutritious (NUT) diet summary, rainy season

The edible weight and cost of the foods selected for an average household of 5 for one season for a nutritious (NUT) diet with the percentage contributed by each food in terms of weight, cost, energy, protein and fat, the percentage contribution of each food for eight vitamins and four minerals and the percentage of the total target met for each nutrient, for rainy season in the LR04 Coastal Plain Cassava with Rice & Inland Fishing livelihood zone.

Micronutrient Nutritious (NUT) Food List - RAINY	Quantity (Kg)	% quantity	Cost (LRD)	% cost	% energy	% protein	% fat	% vit A	% vit C	% vit B1	% vit B2	% niacin	% vit B6	% folic acid	% vit B12	% calcium	% iron	% zinc
Breadnut, raw or cooked (Breadnut, raw)	234	9.0	15,146	17.3	13.1	11.8	2.4	1.0	8.7	3.8	2.2	3.8	18.0	8.8	0.0	6.0	6.1	12.9
Breast milk	194	7.4	0	0.0	3.3	1.7	7.7	3.1	1.1	1.2	1.2	3.1	0.3	0.9	5.0	1.4	0.0	1.1
Cassava leaf, Gbueevah (Leaf, cassava, raw)	1036	39.7	16,213	18.5	26.0	66.0	9.5	93.8	54.7	76.2	81.2	62.3	59.3	69.6	0.0	75.3	71.5	35.0
Cassava, raw (Cassava, tuber, raw)	737	28.2	21,578	24.6	29.2	7.2	2.0	0.3	29.9	8.7	6.3	18.4	12.4	10.1	0.0	8.3	6.5	12.2
Coconut, whole (Coconut, mature kernel)	204	7.8	13,925	15.9	20.5	6.2	76.9	0.0	0.6	2.4	0.8	3.7	1.9	3.1	0.0	0.9	6.2	8.4
Country rice (Rice, brown, raw)	22	0.9	2,716	3.1	2.0	1.5	0.5	0.0	0.0	2.5	0.3	4.1	2.2	0.5	0.0	0.1	0.5	2.2
Fufu (Cassava, bread, fermented)	60	2.3	1,976	2.3	4.1	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gblafee leaf (Leaf, okra, raw)	100	3.8	2,241	2.6	1.0	2.3	0.3	1.8	4.9	4.7	7.0	0.7	5.7	6.7	0.0	7.8	0.8	4.3
Snail (Snail, sea)	24	0.9	13,961	15.9	0.6	2.3	0.7	0.1	0.1	0.6	1.1	3.9	0.2	0.2	95.0	0.1	8.4	23.8
Total	2,611	100	87,757	100	100	100	100	100										
% target met					100	193	100	293	920	177	294	111	238	275	100	231	152	176

*the RAINY NUT diet has included gblafee leaf (1 market) and snail (2 markets)

Table 16: LR04 Micronutrient nutritious (NUT) diet summary, dry season

The edible weight and cost of the foods selected for an average household of 5 for one season for a nutritious (NUT) diet with the percentage contributed by each food in terms of weight, cost, energy, protein and fat, the percentage contribution of each food for eight vitamins and four minerals and the percentage of the total target met for each nutrient, for dry season in the LR04 Coastal Plain Cassava with Rice & Inland Fishing livelihood zone

Micronutrient Nutritious (NUT) Food List - DRY	Quantity (Kg)	% quantity	Cost (LRD)	% cost	% energy	% protein	% fat	% vit A	% vit C	% vit B1	% vit B2	% niacin	% vit B6	% folic acid	% vit B12	% calcium	% iron	% zinc
Breadfruit (Breadfruit)	103	3.9	2,146	2.0	2.9	1.6	0.3	0.0	4.6	3.4	1.1	3.6	0.0	0.0	0.0	1.1	3.4	0.0
Breast milk	194	7.2	0	0.0	3.3	2.1	7.7	3.9	1.3	1.5	1.5	3.0	0.4	1.1	5.0	2.0	0.0	1.9
Butter pear (Avocado)	211	7.9	20,631	19.0	8.7	4.4	31.6	0.6	3.4	5.2	5.9	12.9	13.0	11.3	0.0	0.9	1.9	10.8
Cassava leaf, Gbueevah (Leaf, cassava, raw)	816	30.4	23,053	21.2	20.5	64.1	7.5	94.5	51.3	75.0	80.2	46.8	58.7	63.9	0.0	81.6	74.7	45.0
Cassava, raw (Cassava, tuber, raw)	767	28.6	27,408	25.2	30.4	9.2	2.0	0.4	37.1	11.3	8.2	18.3	16.2	12.2	0.0	11.9	8.9	20.9
Coconut, whole (Coconut, mature kernel)	131	4.9	10,866	10.0	13.2	4.9	49.4	0.0	0.5	1.9	0.6	2.2	1.6	2.4	0.0	0.8	5.3	8.8
Fufu (Cassava, bread, fermented)	280	10.5	8,133	7.5	19.4	5.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Large country bitter ball (Chayote, fruit, raw)	144	5.4	3,390	3.1	0.7	1.2	0.2	0.0	1.8	1.3	0.9	2.4	2.6	8.9	0.0	0.9	0.8	8.5
Sardina raw (Fish, sardine, raw)	32	1.2	13,042	12.0	0.9	6.6	1.0	0.3	0.0	0.2	1.5	10.7	7.5	0.1	95.0	0.8	4.9	4.1
Sweet potato leaf (Leaf, sweet potato, raw)	1	0.0	35	0.0	0.0	0.1	0.0	0.3	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.0
Total	2,682	100	108,703	100	100	100	100	100										
% target met					100	157	100	229	772	142	234	116	189	236	100	168	114	108

*The RAINY NUT has included breadfruit (1 market) and large country bitter ball (1 market)

Table 17: LR04 Food habits nutritious (FHAB) diet summary, annual

The edible weight and cost of the foods selected for an average household of 5 for the whole year for a food habits nutritious diet with the percentage contributed by each food in terms of weight, cost, energy, protein and fat, the percentage contribution of each food for eight vitamins and four minerals and the percentage of the total target met for each nutrient, averaged across the seasons in the LR04 Coastal Plain Cassava with Rice & Inland Fishing livelihood zone

Food habits nutritious (FHAB) Food List	Quantity (Kg)	% quantity	Cost (LRD)	% cost	% energy	% protein	% fat	% vit A	% vit C	% vit B1	% vit B2	% niacin	% vit B6	% folic acid	% vit B12	% calcium	% iron	% zinc
Agro oil (Oil, vegetable)	11	0.5	3,869	2.9	2.6	0.0	11.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bony fish, fresh, raw (Fish, mackerel, raw)	95	4.0	39,310	29.1	3.1	15.8	4.8	1.2	0.0	4.3	2.9	16.9	7.5	0.1	60.9	1.0	5.8	3.0
Breadnut, raw or cooked (Breadnut, raw)	173	7.3	11,215	8.3	9.7	8.7	1.7	0.7	8.1	3.0	2.1	2.5	13.8	8.0	0.0	6.4	5.5	12.7
Breast milk	194	8.2	0	0.0	3.3	1.7	7.6	3.1	1.3	1.3	1.5	2.8	0.4	1.2	5.0	2.0	0.0	1.5
Butter pear (Avocado)	45	1.9	4,435	3.3	1.9	0.8	6.7	0.1	0.8	1.0	1.3	2.6	2.3	2.6	0.0	0.2	0.4	1.9
Cassava leaf, Gbueevah (Leaf, cassava, raw)	745	31.3	14,239	10.5	18.7	47.3	6.7	68.0	49.6	59.3	74.3	40.5	44.2	61.4	0.0	77.1	62.1	33.3
Cassava, raw (Cassava, tuber, raw)	519	21.8	16,438	12.2	20.5	5.0	1.4	0.2	26.6	6.6	5.7	11.7	9.0	8.7	0.0	8.3	5.5	11.4
Chicken neck, with skin, raw (Chicken, neck, with skin, raw)	< 1	0.0	19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coconut, whole (Coconut, mature kernel)	137	5.8	10,035	7.4	13.8	4.1	50.7	0.0	0.5	1.7	0.7	2.2	1.4	2.6	0.0	0.9	5.0	7.5
Country rice (Rice, brown, raw)	48	2.0	6,240	4.6	4.4	3.1	1.1	0.0	0.0	5.7	0.7	8.0	4.8	1.3	0.0	0.4	1.3	6.3
Fufu (Cassava, bread, fermented)	150	6.3	4,770	3.5	10.4	2.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Garri (Cassava, root, dried meal)	70	2.9	6,512	4.8	5.7	1.5	0.5	0.0	8.6	6.9	0.8	4.6	9.6	1.8	0.0	1.2	2.0	3.2
Kpakutuweh (Bean, adzuki, mature, raw)	6	0.3	1,431	1.1	0.5	1.1	0.0	0.0	0.0	0.9	0.3	0.6	0.4	2.8	0.0	0.2	0.5	2.1
Palm kernel oil (Oil, palm, local)	4	0.2	694	0.5	0.9	0.0	4.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Peas, (yellow or green split peas), dried (Peas, split, mature, raw)	13	0.6	2,347	1.7	1.2	2.8	0.2	0.0	0.0	3.1	0.6	1.3	0.5	2.6	0.0	0.3	0.9	2.6
Purple sweet potato, raw (Sweet potato, purple skin, pale yellow flesh, raw)	36	1.5	1,546	1.1	1.0	0.2	0.1	0.0	2.1	0.9	0.5	0.9	1.5	0.3	0.0	0.4	0.8	0.9
Snail (Snail, sea)	9	0.4	8,077	6.0	0.2	0.8	0.2	0.0	0.1	0.2	0.5	1.3	0.1	0.1	34.1	0.0	3.7	11.3
Sweet potato leaf (Leaf, sweet potato, raw)	121	5.1	3,479	2.6	1.6	4.5	0.2	18.8	2.3	5.0	8.2	4.1	4.5	6.7	0.0	1.7	6.6	2.3
Total	2,378	100	135,230	100	100	100	100	100										
% target met					100	194	102	291	729	164	230	123	229	224	100	162	125	133

* Breadfruit, cow bone, glabfee leaf, large country bitter ball and turkey neck were excluded from the annual diet, as each were only found in one or two markets in both seasons. Dried baby fish, sardines, small dried fish and snail were excluded from the rainy season, whilst fever leaf was excluded from the dry season. These items were either not found or only found in one or two markets in the specific season.

Table 18: LR04 Food habits nutritious (FHAB) diet summary, rainy season

The edible weight and cost of the foods selected for an average household of 5 for one season for a food habits nutritious (FHAB) diet with the percentage contributed by each food in terms of weight, cost, energy, protein and fat, the percentage contribution of each food for eight vitamins and four minerals and the percentage of the total target met for each nutrient, for rainy season in the LR04 Coastal Plain Cassava with Rice & Inland Fishing livelihood zone

Food Habits Nutritious (FHAB) Food List - RAINY	Quantity (Kg)	% quantity	Cost (LRD)	% cost	% energy	% protein	% fat	% vit A	% vit C	% vit B1	% vit B2	% niacin	% vit B6	% folic acid	% vit B12	% calcium	% iron	% zinc
Agro oil (Oil, vegetable)	18	0.7	6,035	4.3	4.1	0.0	17.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bony fish, fresh, raw (Fish, mackerel, raw)	149	6.1	61,317	44.0	4.8	21.2	7.5	1.7	0.0	6.6	4.2	25.7	11.6	0.1	95.0	1.4	8.4	5.1
Breadnut, raw or cooked (Breadnut, raw)	270	11.0	17,493	12.5	15.2	11.7	2.7	1.0	12.8	4.7	3.0	3.9	21.2	11.5	0.0	8.9	8.0	21.2
Breast milk	194	7.9	0	0.0	3.3	1.5	7.5	2.8	1.3	1.3	1.4	2.7	0.4	1.1	5.0	1.8	0.0	1.6
Cassava leaf, Gbueevah (Leaf, cassava, raw)	841	34.3	13,157	9.4	21.1	45.9	7.5	69.9	56.7	66.3	76.7	44.7	49.2	63.9	0.0	77.7	65.3	40.3
Cassava, raw (Cassava, tuber, raw)	505	20.6	14,788	10.6	20.0	4.2	1.3	0.2	26.2	6.4	5.0	11.1	8.7	7.8	0.0	7.2	5.0	11.9
Chicken neck, with skin, raw	< 1	0.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coconut, whole (Coconut, mature kernel)	139	5.7	9,471	6.8	14.0	3.6	51.0	0.0	0.5	1.8	0.6	2.2	1.4	2.4	0.0	0.8	4.7	8.1
Country rice (Rice, brown, raw)	18	0.7	2,202	1.6	1.6	1.0	0.4	0.0	0.0	2.1	0.3	2.9	1.8	0.5	0.0	0.1	0.5	2.5
Fufu (Cassava, bread, fermented)	159	6.5	5,251	3.8	11.0	2.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kpakutuweh (Bean, adzuki, mature, raw)	6	0.3	1,368	1.0	0.5	0.9	0.0	0.0	0.0	0.9	0.3	0.5	0.4	2.5	0.0	0.1	0.4	2.2
Peas, yellow or green, dried (Split peas, mature, raw)	21	0.9	3,660	2.6	1.9	3.7	0.2	0.0	0.1	4.8	0.9	2.0	0.7	3.7	0.0	0.4	1.3	4.4
Red oil (from fruit) (Oil, palm, red)	4	0.2	895	0.6	0.9	0.0	3.8	6.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweet potato leaf (Leaf, sweet potato, raw)	126	5.2	3,806	2.7	1.7	4.0	0.3	18.0	2.4	5.2	7.8	4.2	4.7	6.5	0.0	1.6	6.4	2.5
Total	2,449	100	139,473	100	100	100	100	100										
% target met					100	226	102	319	720	165	252	125	232	243	100	182	135	124

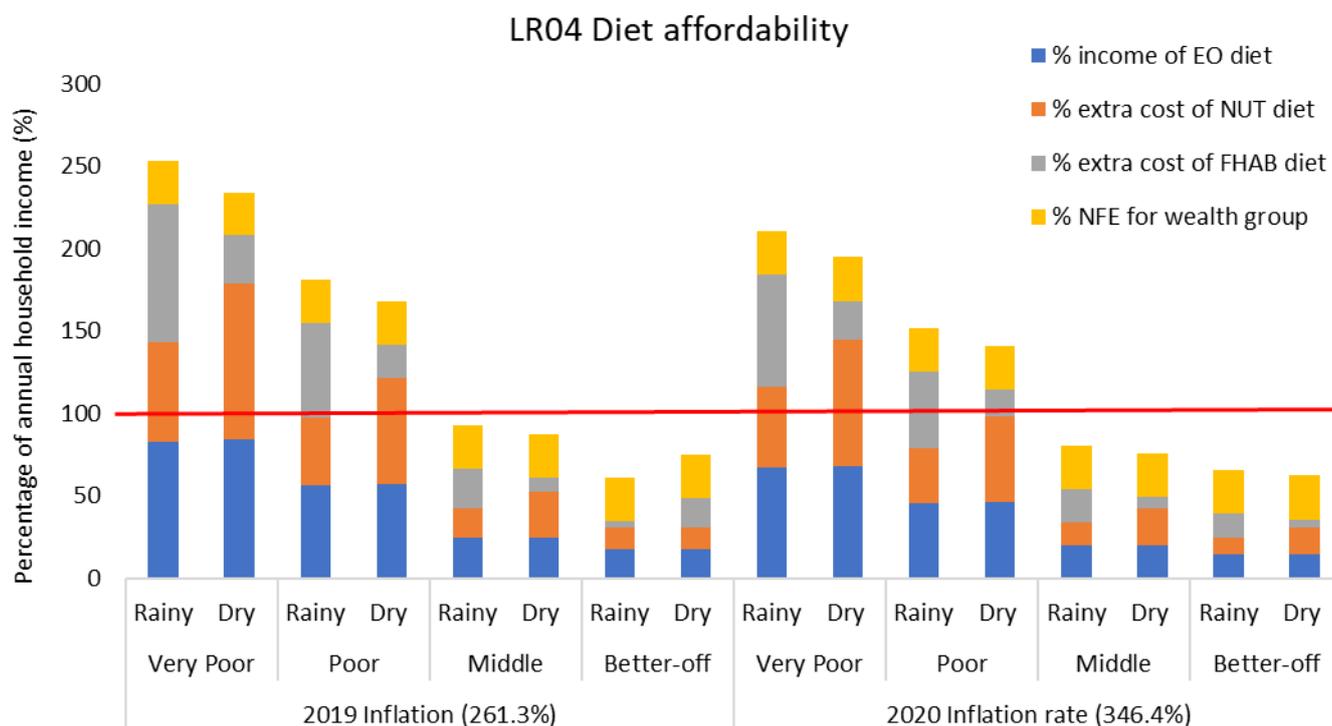
Table 19: LR04 Food habits nutritious (FHAB) diet summary, dry season

The edible weight and cost of the foods selected for an average household of 5 for one season for a food habits nutritious (FHAB) diet with the percentage contributed by each food in terms of weight, cost, energy, protein and fat, the percentage contribution of each food for eight vitamins and four minerals and the percentage of the total target met for each nutrient, for dry season in the LR04 Coastal Plain Cassava with Rice & Inland Fishing livelihood zone

Food Habits Nutritious (FHAB) Food List - DRY	Quantity (Kg)	% quantity	Cost (LRD)	% cost	% energy	% protein	% fat	% vit A	% vit C	% vit B1	% vit B2	% niacin	% vit B6	% folic acid	% vit B12	% calcium	% iron	% zinc
Breast milk	194	8.6	0	0.0	3.3	2.4	7.7	3.8	1.3	1.3	1.8	2.9	0.4	1.4	5.0	2.6	0.0	1.3
Butter pear (Avocado)	126	5.6	12,356	9.7	5.2	3.0	18.9	0.3	2.1	2.7	4.3	7.6	6.6	8.4	0.0	0.7	1.2	4.7
Cassava leaf, Gbueevah (Leaf, cassava, raw)	573	25.4	16,172	12.7	14.4	51.4	5.3	63.5	37.4	46.5	68.9	32.4	34.8	55.6	0.0	75.4	55.0	22.8
Cassava, raw (Cassava, tuber, raw)	543	24.1	19,385	15.2	21.5	7.4	1.4	0.3	27.3	7.0	7.1	12.8	9.7	10.7	0.0	11.1	6.6	10.7
Coconut, whole (Coconut, mature kernel)	133	5.9	11,043	8.7	13.4	5.7	50.2	0.0	0.5	1.7	0.8	2.3	1.4	3.0	0.0	1.1	5.6	6.5
Country rice (Rice, brown, raw)	101	4.5	13,454	10.5	9.2	9.4	2.3	0.0	0.0	12.3	1.9	17.6	10.5	3.3	0.0	1.0	3.3	11.8
Fufu (Cassava, bread, fermented)	135	6.0	3,911	3.1	9.3	3.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Garri (Cassava, root, dried meal)	194	8.6	18,144	14.2	15.8	6.0	1.4	0.2	23.4	19.5	2.6	13.5	27.6	5.8	0.0	4.3	6.4	7.9
Kpakutuweh (Bean, adzuki, mature, raw)	7	0.3	1,543	1.2	0.6	1.6	0.0	0.0	0.0	1.0	0.4	0.6	0.5	3.5	0.0	0.2	0.6	2.0
Palm kernel oil (Oil, palm, local)	11	0.5	1,934	1.5	2.5	0.0	11.4	10.8	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Purple sweet potato, raw (Sweet potato, purple skin, raw)	99	4.4	4,307	3.4	2.7	0.7	0.3	0.1	5.8	2.5	1.6	2.8	4.2	0.9	0.0	1.5	2.5	2.3
Snail (Snail, sea)	24	1.1	22,503	17.6	0.6	3.3	0.7	0.1	0.2	0.6	1.7	3.7	0.2	0.3	95.0	0.1	11.8	28.2
Sweet potato leaf (Leaf, sweet potato, raw)	110	4.9	2,895	2.3	1.5	5.8	0.2	20.9	2.0	4.7	9.0	3.9	4.2	7.3	0.0	1.9	6.9	1.8
Total	2,251	100	127,650	100	100	100	100	100										
% target met					100	137	100	239	744	161	191	118	223	190	100	128	109	149

Annex 9: LR04 Diet affordability, comparison of 2019 and 2020 inflation rate

Figure 8: The dry season affordability of the diets for four wealth groups in LR04, including essential NFE, as a percentage of household income



Seasonal variation by wealth group for 2019 and 2020

LR04 Inflation Year	Wealth group	Season	% income of EO diet	% extra cost of NUT diet	% extra cost of FHAB diet	% NFE for wealth group
2019 Inflation (261.3%)	Very Poor	Rainy	82.8	60.6	83.7	26.3
		Dry	83.8	94.8	29.2	26.3
	Poor	Rainy	56.3	41.2	56.9	26.3
		Dry	57.0	64.5	19.8	26.3
	Middle	Rainy	24.3	17.8	24.5	26.3
		Dry	24.6	27.8	8.6	26.3
	Better-off	Rainy	17.6	12.9	3.9	26.4
		Dry	17.6	12.9	17.8	26.3
2020 Inflation rate (346.4%)	Very Poor	Rainy	67.0	49.0	67.8	26.4
		Dry	67.9	76.7	23.6	26.4
	Poor	Rainy	45.6	33.3	46.1	26.4
		Dry	46.1	52.2	16.1	26.4
	Middle	Rainy	19.6	14.4	19.9	26.4
		Dry	19.9	22.5	6.9	26.4
	Better-off	Rainy	14.2	10.4	14.4	26.4
		Dry	14.4	16.3	5.0	26.4

Annex 10: Impact of multiple micronutrient powder intervention

Table 20: Impact of a multiple micronutrient powder intervention on the average daily cost of the diet for a Child (either sex) 12-23 months in rainy and dry seasons, average daily cost and annual cost.

Livelihood zone	Diet type	With / Without / Proportion	Average daily diet cost RAINY (LRD)	Average daily diet cost DRY (LRD)	Average daily diet cost (LRD)	Annual diet cost (LRD)
LR02 North/Central rice with cassava & market gardening	Energy only (EO)	No MNP	7.06	5.71	6.57	2,399.38
		With MNP	7.06	5.71	6.57	2,399.38
		% of EO	-	-	-	-
	Nutritious (NUT)	No MNP	19.26	24.35	21.09	7,698.25
		With MNP	10.51	13.85	11.71	4,274.32
		% of NUT	55%	57%	56%	56%
	Food habits nutritious (FHAB)	No MNP	19.31	25.14	21.4	7,811.42
		With MNP	10.09	14.62	11.71	4,275.55
		% of FHAB	52%	58%	55%	55%
LR04 Coastal Plain Cassava with Rice & Inland Fishing	Energy only (EO)	No MNP	6.95	6.09	6.64	2,424.32
		With MNP	6.95	6.09	6.64	2,424.32
		% of EO	-	-	-	-
	Nutritious (NUT)	No MNP	12.1	17.31	13.97	5,099.19
		With MNP	10.13	12.99	11.16	4,072.70
		% of NUT	84%	75%	80%	80%
	Food habits nutritious (FHAB)	No MNP	20.31	18.62	19.70	7,191.45
		With MNP	10.3	13.04	11.28	4,117.96
		% of FHAB	51%	70%	57%	57%

Table 21: Impact of a multiple micronutrient powder intervention on the cost of the diet for an average household of 5 in rainy and dry seasons, average daily cost and annual cost.

Livelihood zone	Diet type	With / Without / Difference	Average daily diet cost RAINY (LRD)	Average daily diet cost DRY (LRD)	Average daily diet cost (LRD)	Annual diet cost (LRD)
LR02 North/Central rice with cassava & market gardening	Energy only (EO)	No MNP	133.30	110.81	125.23	45,709.01
		With MNP	133.30	110.81	125.23	45,709.01
		% of EO	-	-	-	-
	Nutritious (NUT)	No MNP	366.40	388.11	374.19	136,579.64
		With MNP	355.8	377.6	363.62	132,721.76
		% of NUT	97%	97%	97%	97%
	Food habits nutritious (FHAB)	No MNP	378.37	464.29	410.75	149,923.69
		With MNP	369.15	424.12	388.88	141,941.24
		% of FHAB	98%	91%	95%	95%
LR04 Coastal Plain Cassava with Rice & Inland Fishing	Energy only (EO)	No MNP	139.31	139.64	139.43	50,891.28
		With MNP	139.31	141.08	139.95	51,080.12
		% of EO	-	-	-	-
	Nutritious (NUT)	No MNP	240.43	297.82	261.03	95,274.49
		With MNP	238.38	295.23	258.78	94,455.69
		% of NUT	99%	99%	99%	99%
	Food habits nutritious (FHAB)	No MNP	382.12	349.73	370.49	135,230.00
		With MNP	372.11	344.15	362.07	132,156.51
		% of FHAB	97%	98%	98%	98%

Table 22: Percentage contribution of selected micronutrients on selected diets for a child (either sex) 12-23 months through provision of multiple micronutrient powder (1 gram sachet daily).

The percentage contribution of selected nutrients through provision of **1 gram of multiple micronutrient powder (MNP) sachet per day to 1 x Child (either sex) 12-23 months** for three periods (rainy season, dry season, annual) in the **LR02 North/Central Rice with Cassava & Market Gardening** and **LR04 Coastal Plain Cassava with Rice & Inland Fishing** livelihood zones.

Livelihood zone	Diet	Period	Quantity (Kg)	% quantity	Cost (LRD)	% cost	% energy	% protein	% fat	% vit A	% vit C	% vit B1	% vit B2	% niacin	% vit B6	% folic acid					% iron	% zinc
																%	%	%	%	%		
LR02 North/Central rice with cassava & market gardening	Energy-only (EO)	Rainy season	< 1	0.1	0	0.0	0.0	0.0	0.0	60.1	58.5	81.7	72.9	72.2	91.0	66.6	63.6	0.0	100.0	86.5		
		Dry season	< 1	0.1	0	0.0	0.0	0.0	0.0	60.1	58.5	81.7	72.9	72.2	91.0	66.6	63.6	0.0	100.0	86.5		
		Annual	< 1	0.1	0	0.0	0.0	0.0	0.0	60.1	58.5	81.7	72.9	72.2	91.0	66.6	63.6	0.0	100.0	86.5		
	Nutritious (NUT)	Rainy season	< 1	0.1	0	0.0	0.0	0.0	0.0	40.9	17.3	61.4	43.8	56.2	46.5	31.4	63.6	0.0	97.5	65.4		
		Dry season	< 1	0.1	0	0.0	0.0	0.0	0.0	47.0	17.6	58.6	42.3	55.0	51.1	30.8	63.6	0.0	97.2	65.1		
		Annual	< 1	0.1	0	0.0	0.0	0.0	0.0	42.9	17.4	60.4	43.2	55.7	48.0	31.2	63.6	0.0	97.4	65.3		
	Food habits nutritious (FHAB)	Rainy season	< 1	0.1	0	0.0	0.0	0.0	0.0	40.9	22.3	60.4	44.6	62.2	45.1	30.1	63.6	0.0	98.7	62.7		
		Dry season	< 1	0.1	0	0.0	0.0	0.0	0.0	46.6	16.9	56.6	41.6	54.5	46.8	31.7	63.6	0.0	97.0	65.5		
		Annual	< 1	0.1	0	0.0	0.0	0.0	0.0	42.8	20.0	59.0	43.5	59.2	45.7	30.7	63.6	0.0	98.1	63.7		
LR04 Coastal Plain Cassava with Rice & Inland Fishing	Energy-only (EO)	Rainy season	< 1	0.1	0	0.0	0.0	0.0	0.0	60.1	58.5	81.7	72.9	72.2	91.0	66.6	63.6	0.0	100.0	86.5		
		Dry season	< 1	0.1	0	0.0	0.0	0.0	0.0	60.1	58.5	81.7	72.9	72.2	91.0	66.6	63.6	0.0	100.0	86.5		
		Annual	< 1	0.1	0	0.0	0.0	0.0	0.0	60.1	58.5	81.7	72.9	72.2	91.0	66.6	63.6	0.0	100.0	86.5		
	Nutritious (NUT)	Rainy season	< 1	0.1	0	0.0	0.0	0.0	0.0	40.9	19.1	51.3	38.8	51.8	45.9	28.0	63.6	0.0	96.1	63.7		
		Dry season	< 1	0.1	0	0.0	0.0	0.0	0.0	40.9	18.0	51.0	40.8	50.5	50.1	30.9	63.6	0.0	96.2	66.6		
		Annual	< 1	0.1	0	0.0	0.0	0.0	0.0	40.9	18.7	51.2	39.5	51.3	47.3	29.0	63.6	0.0	96.1	64.7		
	Food habits nutritious (FHAB)	Rainy season	< 1	0.1	0	0.0	0.0	0.0	0.0	40.9	21.1	52.2	39.5	53.6	44.6	28.2	63.6	0.0	96.2	63.5		
		Dry season	< 1	0.1	0	0.0	0.0	0.0	0.0	40.9	22.1	52.7	39.5	52.6	47.5	28.6	63.6	0.0	96.6	66.4		
		Annual	< 1	0.1	0	0.0	0.0	0.0	0.0	40.9	21.4	52.4	39.5	53.2	45.6	28.3	63.6	0.0	96.3	64.5		