



Developing Food-Based Recommendations for Complementary Feeding Using Locally Available Foods at the Household Level in Matabeleland North, Zimbabwe

Technical Assistance for the Amalima Loko Resilience Food Security Activity (RFSA)



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Recommended Citation

USAID Advancing Nutrition. 2023. *Developing Food-Based Recommendations for Complementary Feeding Using Locally Available Foods at the Household Level in Matabeleland North, Zimbabwe: Technical Assistance for the Amalima Loko Resilience Food Security Activity (RFSA)*. Arlington, VA: USAID Advancing Nutrition.

Cover Photo: Care group lesson on child feeding, Tsholotsho district. Credit: Pamela Murakwani/Amalima Loko.

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Acknowledgments

This report, *Developing Food-Based Recommendations for Complementary Feeding Using Locally Available Foods at the Household Level in Matabeleland North, Zimbabwe*, was written by Jen Burns, USAID Advancing Nutrition, and Pamela Ncube-Murakwani, Amalima Loko program.

We would like to thank Kavita Sethuraman, Chris Vogliano, Karin Christiansen, Shaneka Thurman, Lisa Sherburne, Ann Miceli, Susan van Keulen-Cantella, Heather Davis, and Jimmy Bishara, who contributed to this work. We thank USAID Bureau for Humanitarian Assistance colleagues Mike Manske, Themba Nduna, and Andrea Warren for their collaboration and feedback. We also extend special thanks to the Amalima Loko project staff who informed the development of these tools and carried out the field exercises in Zimbabwe: Patricia Ndebele, Priviledge Manenji, Tinashe Faith Marange, and Bekezela Ncube.

Acronyms

ASF	animal source food
BHA	USAID Bureau for Humanitarian Assistance
CNFA	Cultivating New Frontiers in Agriculture
CU5	children under five
DGLV	dark-green leafy vegetable
DV	daily value
FAO	Food and Agriculture Organization of the United Nations
FBR	food-based recommendation
FGD	focus group discussion
GoZ	Government of Zimbabwe
IP	implementing partners
IYCF	infant and young child feeding
MoHCC	Ministry of Health and Child Care
NA	not available
NCA	nutrition causal analysis
NGO	nongovernmental organization
PLW	pregnant and lactating women
RFSA	resilience food security activity
TIPs	trials of improved practices
UNICEF	United Nations Children’s Fund
WASH	water, sanitation, and hygiene
WFP	World Food Programme
WHO	World Health Organization
VHW	village health worker
VSLA	Village Savings and Loan Association
WRA	women of reproductive age

Executive Summary

Background on Technical Assistance to Amalima Loko

While significant reductions in wasting and underweight have been made in Zimbabwe, a large number of children are still not growing as they should in an optimal environment. More than 24 percent of children are stunted, and micronutrient deficiencies are prevalent among children under five (CU5) (ZIMSTAT and UNICEF 2019). Vitamin A deficiency affects 19 percent of children, 72 percent are iron-deficient (31 percent anemic), and as many as 72 percent of children are iodine-deficient (MoHCC 2015). Sub-optimal complementary feeding and caring practices are likely a contributing factor, based on the sharp increase in stunting prevalence at about 8 months and peaking at 24 months (GoZ, MoHCC 2014). Approximately 11 percent of children 6–23 months of age in Zimbabwe receive a minimum acceptable diet, and less than 68 percent of children receive the appropriate number of meals per day for their age (ZIMSTAT and UNICEF 2019).

The USAID-funded Amalima Loko program, a five-year (2020–2025) Resilience Food Security Activity (RFSA) operating in five districts of Zimbabwe’s Matabeleland North province, aims to improve the nutritional status and practices among women of reproductive age (WRA) and CU5. As part of a package of multi-sectoral efforts to improve nutrition indicators, Amalima Loko envisioned developing local food-based recommendation (FBRs) to utilize locally available foods and support caregivers in addressing sub-optimal feeding practices, building off previous program experience. Furthermore, the Amalima Loko program is operating in a new geography and aims to ensure they are developing context-specific materials for program use.

Through technical assistance provided by the USAID Advancing Nutrition project to the Amalima Loko program, we supported the field team in applying an approach for developing tailored FBRs using locally available foods that caregivers can use at the household level to improve young child feeding practices. This work contributes towards achieving one of the Amalima Loko’s program *priority behaviors*, as outlined in their behavioral profile, which consists of several sub-behaviors: *Caregivers feed CU5 (age 6–59 months) an adequate quantity (amount/meal and frequency) and variety of nutrient-rich foods for both meals and snacks.*

The specific objectives were for USAID Advancing Nutrition to provide technical assistance to the Amalima Loko RFSA to develop the following:

1. Develop a context assessment and FBRs design guide: The guide will be general enough for program staff to repeat the process in multiple areas of the country with different food environments and cultural practices, and to develop FBRs for different program beneficiaries (CU5, adolescents, pregnant and lactating women [PLW]). The approach is user-friendly and can be carried out rapidly in selected program areas, depending on existing data, and depending on practices to test through household behavior trials. Users can select from modules of the guide to use for their program purposes.
2. Develop program materials (template): The learning from the context assessment and a nutrition composition analysis will be inserted in a book/program template, using context-appropriate images and languages that can be used in multi-sectoral activities.
3. Develop a brief training guide for using the program materials/book: A brief guide will be developed for Amalima Loko program staff to use to train their Care Group leaders, Male Champions, and Farmer Group leaders, to use in supporting beneficiaries to adopt these food-based recommendations in their program activities.

This report is intended to inform USAID Bureau for Humanitarian Assistance (BHA)-funded resilience food security activities (RFSA) implementing partner programs carrying out community-based work with the aim of improving complementary feeding practices.

Food-Based Recommendations Approach

USAID Advancing Nutrition developed an approach to developing FBRs for implementation at the community and household level, drawing on global resources and experiences in other countries. The approach comprises a number of steps to orient field practitioners to the local context and identify solutions to addressing program priority behaviors. Those steps include reviewing secondary data sources and identifying sub-optimal dietary factors relevant to program objectives. Key resources included national policies, strategies, and surveys; program studies and assessments; resources produced by other nongovernmental organizations (NGOs) working in the same area; and global guidance that could be adapted for the program context. Quantitative and qualitative data related to program priority behaviors were then analyzed to identify factors that may affect these priority behaviors. These include structural, social, and internal factors, such as availability and accessibility of nutrient-rich food, cost, household decision-making, workload, cultural beliefs around young child feeding, among others. Next, we developed a Key Foods List drawing on a number of resources, including seasonal availability calendars, market surveys, and community focus group discussions (FGDs) to identify foods that are locally available. Using the Key Foods List, we carried out meal preparation exercises to observe the preparation of typical meals, and to gather data for use in developing recommended modifications to current feeding practices. To develop new and modified dietary practices, we used pile-sorting exercises to explore current practices and perceptions around food preparation and feeding practices. Specific types and amounts of foods were then analyzed to identify combinations with improved nutrient content, particularly addressing key nutrients of concern. Finally, using the Trials of Improved Practices methodology, households tried new or modified behaviors around dietary diversity, frequency of feeding, amount of food, and caregiver roles in young child feeding to determine which are most feasible and acceptable. We also investigated constraints on participants' willingness to change behaviors, and their motivations for trying and sustaining the new practices. Recommendations were made for applying all of this learning to different program interventions that have the potential to address the determinants of the program objectives.

Summary of Findings

Overall, we found that this approach worked to identify and tailor FBRs to the local contexts, and the results from the trials of improved practices (TIPs) indicate that many of the recommendations were feasible and acceptable. The learning generated in each step of the approach informed FBRs related to dietary diversity, and meal frequency and amounts (specific to the priority behavior), as well as factors that influence these optimal child feeding practices.

Children's meals often consist of a staple (grain) and one, or sometimes two, additional foods, often plant based. Children 6–11 months typically receive starchy and less diverse meals, whereas older children are offered more diverse food, including animal source foods (ASF). The household trials showed that most caregivers were willing and able to add nutrient-rich ASF, legumes, and fruits and vegetables to children's meals, as well as offer healthy snacks between meals, based on what they had available in their homes. Across all age groups children receive two meals, and sometimes three per day, depending on food availability and caregiver's time. Knowledge of the amount of food to offer to a child by age range is low, and caregivers typically do not measure food when cooking and serving children. Children usually receive meals from their own bowl and plate.

Availability and accessibility to foods are primary determinants of diversity, amount, and frequency of young child feeding. Caregivers who had the food at home and did not have to purchase it at markets were able to add new foods to their child's meal. The time and skills to prepare nutrient-rich foods

influences whether they are used, particularly indigenous foods. Cultural beliefs around eggs causing epilepsy or affecting children's teeth, meat causing greediness, and peanut butter affecting the reproductive system, restrict what caregivers feed children. Religion influences nutrition and health practices, as well as perceptions of indigenous foods. Men primarily manage household income, and make decisions around purchasing or selling livestock. Other household members are also involved in decisions around food purchasing, preparation, and actual feeding of young children: aunts, grandmothers, siblings, other wives. Finally, indigenous foods are valued because they are available for all people to consume, do not have to be purchased, and are considered "healthy"; while some are viewed as "poor people's foods," with little desire to gather them. Despite the various constraints, using a menu of options of nutrient-rich foods during the household trial, families were successful in adding a small quantity of ASF, legumes, and vegetables and fruits to their children's daily meals. Furthermore, when caregivers received the support of other household members to try a new practice, households were more successful.

Discussion

It is possible for caregivers to improve complementary feeding practices using locally available foods, provided they can access the seasonally available foods; have the knowledge, skills, and time to prepare them; and the family and community support for putting the behaviors into practice. Caregivers were very willing and successful in adding ASF, legumes, and fruits and vegetables to their child's meals, and offering snacks between meals. Measuring when cooking, and serving children appropriate amounts of food was feasible, though this is not common practice. Appropriate frequency of feeding throughout the day may be possible but it depends on several factors, such as food availability and caregiver's time. Cultural beliefs around foods continue to influence those that caregivers are willing to try offering children.

Caregivers face a number of challenges in using locally available nutrient-rich foods for young child feeding. Those factors include workload burden; food availability; cost of foods; skills and knowledge to prepare foods (particularly indigenous foods); social norms around feeding certain foods; and gender norms and decision-making within households. As such, there is large variation in access to food and resources at the household level, requiring options for caregivers to select. Caregivers need support in knowing and accessing the types of nutrient-rich locally available foods, and the amounts and frequency with which to feed children by age. Because children are fed differently by age, context-appropriate recommendations are needed to increase the likelihood of adoption. Furthermore, various household members play unique roles in young child feeding, which makes it important to identify the different roles each family member can take to improve practices.

The experience of working with the Amalima Loko program highlighted a few key points. One, a multi-sectoral approach is needed to address young child feeding practices. Two, a participatory approach with caregivers is needed to contextualize global recommendations. Three, offering a menu of food options permits the household to identify what works for them, based on resources at their disposal, and to select various roles household members can play to adopt improved practices. Four, small amounts of indigenous foods can contribute significantly to meeting the nutrient requirements of children 6–11 and 12–23 months of age. And five, while the focus of this work was on developing and testing recommendations with regard to food consumption among children 6–23 months of age, programs should continue to promote continued breastfeeding through two years of age and beyond, knowing that breast milk contributes a significant amount towards meeting energy and nutrient requirements.

Recommendations

Recommendations for the Amalima Loko program focus on addressing both barriers to improving the priority behavior, as well as facilitators to promote priority behavior throughout the various program activities. Many of the recommendations can be carried out through existing program platforms, using materials developed as a result of this work (see annex 2). The materials include a list of locally available foods by food group, amounts to offer, and frequency of feeding, by age range 6–11 and 12–23 months. In addition, there are suggested roles for household members regarding food gathering, purchasing, preparation, feeding, and other household chores—key practices to support households to adopt. Specific Amalima Loko program platforms through which to promote improved practices and address determinants of young child feeding include Care groups, Community Health & Nutrition dialogues, Male Champions, and Farmer Groups. Overall recommendations are outlined below.

1. The drivers of sub-optimal IYCF practices in Matabeleland North are multifaceted. As a result, a variety of program interventions will continue to address factors related to optimal infant and young child feeding (IYCF), as outlined in this report, while there will need to be consideration for other multi-sectoral support that was not studied during this technical assistance (water, sanitation, and hygiene [WASH], health, microfinance, agricultural production).
2. Given the time burden of women’s workload, it is critical that households and community members are engaged with young child feeding or helping with household chores. Those roles will be determined in negotiations with various household members during household visits, considering food gathering; purchasing, preparation, processing, and feeding food; and gathering water and firewood. Male Champions and health and nutrition dialogue sessions are also a key channel to engage influential community members.
3. To improve household availability and access to nutrient-rich foods, Lead Farmers, Village Health Workers, and Lead Mothers will continue to support households in accessing the tools and capacity to produce and preserve foods. The government’s Health Harvest training will be a primary channel. Linkages with village savings and loans associations (VSLAs) are also a useful opportunity.
4. Dietary diversity will be addressed during household counseling visits or different peer group sessions, using the menu of suggested foods to guide the caregiver in choosing foods based on what they have available in their household. In addition, improving knowledge and skills of how to prepare indigenous foods will be addressed through the Healthy Harvest food preservation training to be rolled out through the Care Groups.
5. Factors influencing meal frequency, namely workload constraints, will be addressed through the program’s Male Champions platforms as men discuss ways in which they can assist with household chores; and through Health and Nutrition Community Dialogues as different household and community members commit to a role for them to play in food access. In addition, the Care Groups are a platform through which members will practice time-efficient techniques to food preservation practices through the rollout of the Healthy Harvest training.
6. The amount of food to offer will be addressed during household counseling visits, using the menu of foods in amounts appropriate for the child’s age, as well as through using locally available measuring units.
7. Norms around food for children will be addressed during Health and Nutrition Community Dialogues and household counseling visits, when members share successful experiences with feeding young children foods such as eggs, meat, and peanut butter.

Conclusion

From September 2022–March 2023, USAID Advancing Nutrition provided technical assistance to the Amalima Loko program in applying an approach for developing FBRs using locally available foods to improve young child feeding practices. This step-wise approach assisted a field team in reviewing the existing literature and gathering additional information to identify sub-optimal young child feeding practices and multi-causal drivers, and to test solutions to apply to their multi-sectoral program. This work resulted in a guide for use throughout the program life cycle, and draft materials with recommendations for 6–11 and 12–23 months of age to use in program activities. Improving young child feeding practices requires a multi-sectoral approach and involvement from many individuals at the household and community level. Other RFSAs could apply the same approach to developing context-specific recommendations to improve young child feeding practices.

Background to the Technical Assistance

Introduction

It is estimated that more than 50 children out of every 1,000 born in Zimbabwe will die before their fifth birthday (UNICEF 2021). High rates of malnutrition are a leading underlying cause. While significant reductions in wasting and underweight have been made in the past 30 years in Zimbabwe, a large number of children are still not growing as normally as they could in an optimal environment. More than 24 percent of children are stunted, with nearly the same number affected in Matabeleland North (ZIMSTAT and UNICEF 2019). Virtually no improvement has been made in addressing stunting in the past two decades (GoZ, MoHCC 2014). Micronutrient deficiencies are prevalent across all age groups, but particularly among children under five (CU5). Vitamin A deficiency affects 19 percent of CU5, 72 percent are iron-deficient (31 percent anemic), and as many as 72 percent of children are iodine-deficient (MoHCC 2015). Sub-optimal complementary feeding and care practices are likely a contributing factor, based on the sharp increase in stunting prevalence at about 8 months and peaking at 24 months (GoZ, MoHCC 2014). Approximately 11 percent of children 6–23 months of age in Zimbabwe receive a minimum acceptable diet (ZIMSTAT and UNICEF 2019). The situation is even more dire in Matabeleland North (5 percent). Nationally, less than 68 percent of children receive the appropriate number of meals per day for their age, with only 61 percent in Matabeleland North. Only 8 percent of children in Matabeleland North receive food from 5 of 8 food groups, compared to 17 percent nationwide. While Matabeleland North is considered one of the livestock-rearing provinces, it has the highest percentage of households that do not consume protein-rich foods (36 percent) nor iron-rich foods (50 percent) (GoZ, Food and Nutrition Council 2017). Generally, sub-optimal infant and young child feeding (IYCF) and caring practices in Zimbabwe are caused by a combination of factors, including poverty and low purchasing power, migration, and caregivers' lack of time and resources to obtain and prepare nutritious foods for young children.

The United States Agency for International Development (USAID) Bureau for Humanitarian Assistance (BHA) funds two multi-year resilience food security activities (RFSA) in Zimbabwe, to address food insecurity and malnutrition in two highly vulnerable regions of the country. One of these two awards, Amalima Loko, a RFSA implemented in Matabeleland North, requested technical assistance from USAID Advancing Nutrition to support them in developing an approach to improve food-based recommendations (FBRs) using locally available foods that caregivers can use at household level to improve IYCF practices. This is in addition to technical assistance from USAID Advancing Nutrition to the Amalima Loko Program for other aspects of their project, including implementation research on the quality of peer groups.

While implementing partners (IPs) often use generic global and national IYCF communication materials in their programs to improve IYCF practices, they often do not have the tools and knowledge for how to make those materials more context specific. Other limitations to globally available tools include requiring intensive in-person training; English language skills; time-intensive and complex methodologies; cost; and lack of support in using the tools. The context matters when aiming to reduce malnutrition and improve the underlying caring and feeding practices. Context-specific foods need to be identified, household and community influencers need to be engaged, and social and gender norms need to be understood, among other factors. Currently in Zimbabwe, community-based counselors are trained using a generic national IYCF training package to facilitate IYCF support groups, conduct action-oriented sessions, and provide individual IYCF counseling (GoZ, Food and Nutrition Council 2017). These generic materials—similar to any community-based program materials—need to be contextualized for different program locations to acknowledge the availability of different resources, foods, and cultural practices. Contextualizing these materials requires conducting assessments to identify potential context-specific drivers of sub-optimal practices, and testing solutions to improve those practices. Furthermore,

experience shows that offering options to caregivers, rather than more prescriptive recommendations, can result in better adoption of improved practices (Helen Keller International 2023).

To support Amalima Loko, we prepared an approach to developing FBRs for use in IYCF programming for implementation at the community and household level, drawing on global resources and experiences in other countries and resources developed by USAID Advancing Nutrition (USAID Advancing Nutrition 2020). The process includes (1) reviewing existing secondary data related to IYCF practices that the program aims to improve; (2) using a number of primary data collection methodologies to better understand current feeding practices and identify locally available foods; (3) conducting nutrient composition analysis to develop FBRs; (4) testing the feasibility and acceptability of these proposed FBRs; (5) modifying the FBRs based on the results of testing, as needed; and (6) identifying multi-sectoral opportunities for integrating these FBRs and improving practices. This report presents this approach, and the results of applying the approach, with the Amalima Loko RFSA. To carry out this work, technical assistance was delivered through a technical assistance mechanism under the USAID Advancing Nutrition Project.

A technical assistance activity was established in January 2021 under the USAID Advancing Nutrition project. Through funding provided by USAID BHA, USAID Advancing Nutrition provides technical assistance to IPs of RFSA programs during their refinement year period, and throughout the life of the award, for research design and guidance, training, tool development, and nutrition-related program implementation support.

Previous Support to Amalima Loko

USAID Advancing Nutrition supported BHA and two RFSA IPs in Zimbabwe during Refine and Implement inception and culmination workshops in 2021 and 2022. For the culmination workshop, USAID Advancing Nutrition collaborated with BHA/Washington, BHA/Zimbabwe, the IDEAL/Program Cycle Support, Pro-WASH, and SCALE Associate Awards to provide multi-sectoral technical support both before and during the Zimbabwe Refine & Implement Culmination Workshop. More specifically, USAID Advancing Nutrition supported BHA/Washington, BHA/Zimbabwe, and Amalima Loko and Takunda RFSA IPs in learning from the R&I research, determining program implementation modifications and continued learning plans, and identifying opportunities for building partners' capacity in implementing their projects.

During the culmination workshop, BHA emphasized the importance of knowing the cultural context and incorporating that learning into program activities. BHA noted that wild foods contribute significantly to the typical diet, especially edible plants and fruits, in project areas in Zimbabwe. In addition, there was interest in how the project would incorporate learning around consumption of underutilized foods into nutrition activities beyond households' gardens (e.g., care groups, social and behavior change platforms) to address barriers to children's and women's dietary diversity.

As part of the continued learning plans, the Amalima Loko RFSA team confirmed their intention to study the new contexts in which they are operating to promote locally available nutritious foods to improve dietary diversity. While the project anticipated completing a Nutrition Causal Analysis (NCA) in August 2022 to yield information on IYCF practices as part of their refinement year studies, Amalima Loko requested additional support from USAID Advancing Nutrition to analyze these findings and gather additional, community-level context-specific information to inform program activities in the new districts of implementation. The RFSA team requested support from USAID Advancing Nutrition to strengthen their capacity on how to use a more systematic and standardized approach to reviewing existing data,

and collecting context-specific data to develop FBRs for young children that are tested and shown to be feasible before including them in their multi-sectoral program activities.

Technical Assistance Request

Amalima Loko is a five-year (2020–2025) RFSA led by Cultivating New Frontiers in Agriculture (CNFA), funded by BHA. The program seeks to elevate the livelihoods of more than 67,000 vulnerable households across five districts of Zimbabwe’s Matabeleland North province, namely Tsholotsho, Nkayi, Lupane, Binga, and Hwange districts. The goal for the activity is to improve food and nutrition security through improved food access and sustainable watershed management. The program has three purposes:

- Purpose 1: Enhanced and inclusive local ownership over food security and resilience planning and development.
- Purpose 2: Improved health and availability of soil, water, and plant resources within the watershed.
- Purpose 3: Improved human health and livelihoods.

Improving health and nutrition for WRA and CU5, which includes intermediate objectives to improve nutritional adequacy among WRA and CU5, and to improve adoption and care; nutrition; health; and WASH practices among WRA and CU5, fits under purpose 3.

As part of a package of multi-sectoral efforts to improve nutrition indicators, Amalima Loko envisioned developing local FBRs¹ to use locally available foods and support caregivers in addressing sub-optimal feeding practices to improve food and nutrition security, building from previous program experience.

While previous Zimbabwe Development Food Security Activities program experiences were successful in using FBRs or recipes to promote improved nutrition, food unavailability, and the lack of a field-friendly standardized approach to identifying and testing feasible FBRs, has “affected the momentum in knowledge transfer on the use of local foods for a balanced child diet.”² Furthermore, Amalima Loko is operating in a new geography and wanted to ensure they are developing context-specific materials for program use.

The technical assistance provided by USAID Advancing Nutrition contributed to achieving one of Amalima Loko’s program priority behaviors: Caregivers feed CU5 (age 6–59 months) an adequate quantity (amount/meal and frequency) and variety of nutrient-rich foods for both meals and snacks. While the program has this priority behavior, the focus of the work shifted throughout this collaborative work, resulting in recommendations for children 6–23 months of age. USAID Advancing Nutrition recommended narrowing this age range, given the learning throughout this process that there is some variation in children’s dietary practices at an early age compared to older children. This is in line with global evidence of the window of opportunity for preventing stunting.

The objectives were for USAID Advancing Nutrition to provide technical assistance to the Amalima Loko RFSA to develop the following:

- I. **Develop a context assessment and FBRs design guide:** The guide will be general enough for program staff to repeat the process in multiple areas of the country with different food environments and cultural practices, and to develop FBRs for different program beneficiaries

¹ Local FBRs for improving dietary practices will be determined by identifying improvements that contribute towards filling gaps in nutrient requirements and meeting global standards for young child feeding practices (such as dietary diversity, frequency of meals, adequate amount of food).

² As cited by field staff on the current Amalima Loko program and in the [Mid-Term Evaluation Report, Zimbabwe Development Food Assistance Programs: ENSURE and Amalima \(World Vision and CNFA 2016\)](#).

(CU5, adolescents, PLW). The approach is user-friendly and can be carried out rapidly in selected program areas, depending on existing data, and depending on practices to test through household behavior trials. Users can select from modules of the guide to use for their program purposes.

2. **Develop program materials (template):** The learning from the context assessment and a nutrition composition analysis will be inserted in a book/program template, using context-appropriate images and languages that can be used in multi-sectoral activities.
3. **Develop a brief training guide for using the program materials/book:** A brief guide will be developed for Amalima Loko program staff to use to train their Care Group leaders, Male Champions, and Farmer Group leaders to use in supporting beneficiaries to adopt these food-based recommendations in their program activities.

USAID Advancing Nutrition was to collaborate with the Amalima Loko program staff to develop the three products outlined above, and to apply them within their program districts (see Scope of Work in annex 5). For this technical assistance, the Amalima Loko program narrowed the focus to two districts that would benefit from further analysis and program material development: Lupane and Binga districts in Matabeleland North. The intention was for the RFSA team to be supported by USAID Advancing Nutrition in applying the approach in two focus areas and, subsequently, the RFSA team would repeat the process and carry it out on their own in the other districts, as needed. It would follow the collaboration with USAID Advancing Nutrition. This would be particularly useful as they consider developing materials to use at different times of the year, to reflect the seasonality of various foods.

To ensure continuity between this specific technical assistance and other support being provided by USAID Advancing Nutrition to the Amalima Loko program—namely, implementation research on the quality of peer groups—these findings will be used to refine program interventions to promote FBRs, where possible. The implementation research study started by exploring the perspectives of Care Group promoters, Lead Mothers, and Neighbor Women on the quality of groups. Amalima Loko and groups used these findings to draft solutions, which groups are testing and refining. The research identified several opportunities to promote the FBRs through Care Groups, including cooking demonstrations, peer-to-peer sharing between Neighbor Women who have children ages 6–24 months, and engaging Neighbor Women without children in the age range to support others in their community. These opportunities were integrated into the training and group activities component of this technical assistance.

Food-Based Recommendations Approach

Methods and Process

USAID Advancing Nutrition, in collaboration with Amalima Loko, carried out a step-by-step process to develop FBRs. We began with a review of existing secondary data to identify any gaps in information related to the local programming context for which primary data collection would be required. For primary data collection, we used mixed methods throughout this process to explore food availability and accessibility, including community members' perspectives and experiences around young child feeding. At the community level, we used focus group discussions (FGDs), meal preparation exercises, pile-sorts, and semi-structured interviews with individuals to collect data. For each method, we used purposive sampling. In each selected community, the Amalima Loko team worked with Care Group Lead Mothers and Village Leaders to select caregivers from project participant households, to capture the socio-economic diversity of project participants in the community. Further details are noted under each section below.

Introduction to the Process and Steps

Developing FBRs for household-level programming is useful when the objective is to improve dietary practices using locally available resources. But, to develop and test tailored FBRs, this requires following an approach that uses a series of steps to enable field practitioners to gain a sound understanding of the local context. For Amalima Loko, the priority behavior under which this process was carried out was: *Caregivers feed CU5 (age 6–59 months) an adequate quantity (amount/meal and frequency) and variety of nutrient-rich foods for both meals and snacks.* The approach was adapted from global guidance and experiences applied in other country contexts (Burns 2020; PAHO and WHO 2013). The process comprises the steps listed in figure 1.

USAID Advancing Nutrition and Amalima Loko worked together to apply this process and steps, and the findings from applying this process are presented in the sections of the report that follow.

Step 1: Review Secondary Data

Ia. Secondary Data Sources

The objective of this step was to identify and review existing data relevant to Amalima Loko's priority behavior: *Caregivers feed CU5 (ages 6–59 months) an adequate quantity (amount/meal and frequency) and variety of nutrient-rich foods for both meals and snacks.* Between November 1 and December 9, 2022, USAID Advancing Nutrition and Amalima Loko reviewed national policies, strategies, and surveys; studies and assessments

Figure 1. Process for Developing FBRs

-
- 1: Review Secondary Data**
 - Secondary data sources
 - Identification of sub-optimal dietary factors
 - 2: Develop a Key Foods List**
 - Foods list
 - Seasonal food availability calendar
 - Market mapping exercise
 - Community focus group
 - 3: Observe Common Meal Preparation**
 - Meal preparation exercise
 - Pile sorting exercise
 - 4: Analyze and Refine Food Combinations**
 - Nutrient analysis
 - 5: Test Recommendations**
 - Set the stage
 - Establish needed background
 - Try the behaviors
 - Assess the outcomes
 - Analyze and make recommendations
 - 6: Apply Learning to the Program**
 - 7: Use the Training Guide for Programming**

carried out by the current program; resources produced by other nongovernmental organizations (NGOs) working in the same area; and global guidance that could be adapted for the program context. See annex I for a full list of resources reviewed.

Ib. Identify Sub-Optimal Dietary Factors

After key secondary data resources were identified, we jointly reviewed these data to identify the sub-optimal dietary and caring practices that may affect the priority behavior the program hopes to address. The aim was to hone in on the sub-optimal practices, and identify gaps that needed to be studied further through participatory community-based exercises, as well as to focus the nutrient composition analysis and proposed modifications to be studied through household-level trials of improved practices (TIPs).

Over time, the field team decided to only study the new districts in which the program is operating (Lupane and Binga districts), as well as to further focus on developing recommendations only for children 6–23 months, as opposed to 6–59 months of age. Information was analyzed considering factors such as socio-economic status, biological sex, and other characteristics (i.e., livelihood, ethnicity/religion). See the findings section for that information.

In addition, USAID Advancing Nutrition developed a table outlining potential factors (or determinants) that have the potential to improve the priority behavior, drawing on frameworks from other program experiences (USAID Advancing Nutrition 2020), and factors from the program’s behavioral profile.³ Between November 1 and December 9, the Amalima Loko team filled out the table using secondary data, organizing the information by Binga and Lupane districts (where available), and regionally or nationally. Factors that relate to the Amalima Loko RFSA include—

- **Structural factors:** Accessibility and availability to and cost of nutrient-rich foods; food or nutrition policies; ASF consumption; and caregivers’ time to prepare nutrient-rich meals and snacks
- **Social factors:** Norms around feeding practices; workload; decision-making of caregivers (food purchases, food preparation, intra-household distribution of food); control of income among caregivers; status of women (movement, approval), among other social determinants
- **Internal factors:** Self-efficacy of caregiver to prepare nutrient-rich foods; skills to prepare nutrient-rich foods; perceived value of indigenous foods; caregivers’ attitude toward preparing nutrient-rich foods; caregivers’ aspirations for their children 6–59 months; and childcare practices that affect child feeding
- **Supporting actors and actions:** Institutional; community (traditional and religious leaders); household (primary and secondary caregivers); practicing a new behavior with support from a community member or household member; and the value of printed materials to serve as reminders.

See Table I in the findings section for the learning from this exercise.

Step 2: Develop a Key Foods List

2a. Key Foods List

This step created a Key Foods List that would be drawn upon in developing FBRs for the target population. Foods were identified based on refinement year research; district- and community-level studies of foods available in the project communities (market surveys and 24-hour dietary recalls on

³ During the culmination phase of the refinement year, the Amalima Loko program developed behavioral profiles on 15 priority behaviors that outlined behaviors, factors that may prevent or support practice of those behaviors, supporting actors and actions, and possible program strategies through which those behaviors would be addressed. This work directly addressed one of those priority behaviors (Think | BIG n.d.).

food availability, acceptability, and price variation); and learning from the Community Focus Group exercise, which is described below (Amalima Loko 2022; WFP and Food and Nutrition Council 2022). Between November 10 and 15, 2022, the Amalima Loko team developed the initial Key Foods List using a table template provided by USAID Advancing Nutrition. The foods in the Key Foods List were organized using the Government of Zimbabwe (GoZ) Ministry of Health's (MOH) four food groups, noting cost and seasonal availability. Table 2 in the findings section illustrates the Key Foods List. The GOZ MOH promotes the consumption of a 'Four-Star Diet' concept. This concept was promoted by the United Nations Children's Fund (UNICEF) and is aligned to the Food Square and MyPlate concept, which are tools to communicate dietary guidelines through understandable visual cues (Marume, Archary, and Mahomed 2023). The concept highlights that four food groups should be consumed to achieve a balanced diet for children 6–23 months.

Four-Star Diet:

- animal-source foods (meat, chicken, fish, liver), and eggs, milk and milk products
- staples (maize, wheat, rice, millet, and sorghum)
- roots and tubers (cassava, potatoes, legumes and pulses (beans, lentils, peas, groundnuts, sesame)
- fruits and vegetables, (mango, papaya, passion fruit, oranges, dark-green leaves, carrots, yellow sweet potato and pumpkin, banana, pineapple, watermelon, tomatoes, avocado, eggplant, and cabbage).

2b. Seasonal Food Availability Calendar

A seasonal food availability calendar is used to identify when different foods are available in the community or a certain program area. This information provides important considerations for the nutrient composition analysis when developing a variety of FBRs and adjusting those based on seasonal availability. Detailed guidance on developing seasonal calendars for any food groups are available (Alliance of Bioversity International and CIAT 2020). Results from the seasonal calendar exercise should be coupled with a market mapping exercise (see below), given that availability, accessibility, and affordability (e.g., the cost of a food or level-of-effort involved to obtain or gather a food) are closely linked and should be considered when developing FBRs.

This exercise was completed using the Amalima Loko refinement year research. Secondary data on the availability of foods by season was used to complete the Key Foods List.

2c. Market Mapping Exercise

The market mapping exercise identifies the types of foods that are locally available, accessible, and affordable in the markets in the program area. Data concerning the seasonal availability, the costs of foods that make up the different food groups, as well as the consumer preferences and characteristics of food retailers help determine which fruits, vegetables, ASF, and staple foods to consider when developing FBRs.

Amalima Loko gathered information on foods that are available by season and their cost during their refinement year research. The NCA had a market study component used to identify culturally acceptable, locally sourced, and affordable nutrient-rich foods that are available in the Amalima Loko program areas. This market analysis included price trends, access, and availability of nutrient-rich foods, and any shocks affecting the market for these commodities. This helped to limit the locally available foods in Binga and Lupane to add to the Key Foods List.

2d. Community Focus Group Discussions

The objective of the community FGDs was to obtain details from community members about foods available in the community, confirming those identified through the secondary data review. This includes foods produced or grown at home, raised, purchased, and gathered (including neglected and underutilized foods). FGDs were conducted in Binga and Lupane districts between December 14–17, 2022, and followed by two days for analysis. USAID Advancing Nutrition provided the templates for the data collection, and questions were adjusted by the Amalima Loko team based on the context. Caregivers participating in Care Groups were selected to participate in the FGDs, ensuring a mix of all ages, including both younger mothers and elders, to reflect the usual caregivers of young children. In addition, a variety of community members with different livelihoods and religions were invited to participate. The team intentionally invited those who were from diverse types of households, including female-headed households, pastoral, agro-pastoral, migratory families, monogamous, polygamous, Christian, and agnostic, among others. A total of four FGDs, each with 10–15 women, were conducted. Tools were adapted to focus on the gaps in information identified through the secondary data review, and accounting for cultural and environmental factors in the two districts from which data were collected.

During FGDs, caregivers were asked the following questions:

1. What do people in this community grow at home (gardens and fields)?
2. What do people in this community raise at home?
3. What do you buy at the market?
4. Which foods can you preserve to last for some time? List preservation methods (dry/ferment).
5. How are these affected by the time of the year?
6. What foods can you collect from the wild within your community?
7. Are any traditional foods becoming less commonly consumed?
8. What is the perception of traditional foods in this community?

New foods that were identified during the FGDs were added to the Key Foods List.

Step 3: Observe Common Meal Preparation

3a. Meal Preparation Exercise

The meal preparation exercise gathered caregivers in a community setting to observe the preparation of typical meals intended for the target population, to gather data for use in the nutrient composition analysis, and to develop recommended modifications to current feeding practices. This process was followed by a pile-sorting exercise (step 3b) to better understand practices and perceptions around food preparation and feeding practices.

USAID Advancing Nutrition provided a meal preparation exercise form to facilitate the data collection. Instructions were provided



Cooking demonstration in a community in Daluka village, Lupane district. Photo Credit: Tinashe Marange/Amalima Loko

influencing young child feeding, such as age, gender, access to and availability of food, among other factors. USAID Advancing Nutrition provided the templates for the data collection, and questions were adjusted by the Amalima Loko team based on the context. The pile-sorting exercise was conducted in tandem with the same participants as the meal preparation exercise and, therefore, caregivers of children ranging from 6–59 months of age were present. To focus the discussion around feeding practices by age group, caregivers were divided into similar groups as those used for the meal preparation exercise, but questions focused on IYCF practices by 6–11 months, 12–23 months, and 2 years and older.



FGD with caregivers of children 6–23 months in Dandanda, Lupane district. Photo Credit: Priviledge Manenji/Amalima Loko

Questions asked during the exercise included—

1. How do you cook for your child?
 - Do you prepare an individual meal, or a household pot for everyone?
 - Do you have a pot for children only?
2. Does it differ by age of child?
3. Does it differ for boys and girls?
4. Show cards of the foods in the food groups. Ask the following questions per food group:
 - For (insert food group), show the cards that you are most likely to feed your child. Why?
 - For (insert food group), show the cards that you are least likely to feed your child. Why?
5. Probe among caregivers:
 - Sort the cards by the most expensive to least expensive
 - Sort the cards by available all year to rarely available
 - Sort the cards by easiest to purchase in the market to hardest to purchase in the market
 - Sort the cards by easiest to raise at home to hardest to raise at home
 - Sort the cards by easiest to collect in the community
 - Which of these foods could you feed your child every day? How much?
 - Which of these foods could you feed your child several times every week? How much?
 - Which of these foods could you feed your child only once a week? How much?
 - Which of these foods can you rarely feed your child? How much?
 - Which of these foods could you give your child as a snack?

- Which of these foods would you be willing to add as a small addition to your child’s own plate/bowl after ladling out food from the pot?
- Which of these foods are preferred foods for boys? For girls?
- Who in the household decides which foods are prepared for your child? And, how frequently they are fed?
- Who in the household decides how much to serve your child? And, in what order are the children served?



Clockwise from upper left: Moringa worms, flying termites (izinhlwa), dried vegetables (umfushwa), snot apples (uxhakuxhaku), pumpkin leaves (ibhobola), baobab fruit (umkhomo). Credit: Priviledge Manenji/Amalima Loko.

Step 4: Analyze and Refine Food Combinations

4a. Nutrient Composition Analysis

The objective of the nutrient composition analysis was to enhance typical meals and/or prioritize foods to promote those that will deliver essential nutrients and provide adequate intakes among a target population. Key foods to consider during the analysis were drawn from the previous steps, including the secondary data review, market analysis, community FGDs, meal preparation exercise, and pile-sorting exercise. Considering nutrient gaps in the target population—focusing primarily on addressing diets low in iron and vitamin A—scenarios were run to identify possible modifications to current feeding practices. The enriched meals or prioritized food combinations were then tested through household behavior trials (TIPs) to ensure they were available, accessible, feasible, and acceptable to households in the program context.

USAID Advancing Nutrition held a three-day virtual workshop with the Amalima Loko team January 17–19, 2023. During this time, the USAID Advancing Nutrition Optimizing Local Diets Tool was introduced to the field team, including instructions for using it, to conduct nutrient compositions analyses. By inputting locally available foods, the tool analyzes combinations of foods, at specific amounts, that can help the target population meet their unique nutritional requirements. Using the foods from the Key Foods List, and learnings identified through the formative steps 1 through 3, the aim was to identify

small modifications to typical meals served to children 6–23 months of age that could contribute to closing nutrient gaps, primarily looking at vitamin A and iron, but also prioritizing where combinations of foods also met daily requirements for critical micronutrients, such as zinc and calcium. Based on the differences in how children are fed between 6–11 and 12–23 months of age, we jointly decided to analyze locally available foods compared to nutrient requirements by these age groups. Aligning analyses and recommendations with how children are currently fed in the context is likely to increase the adoption of improved practices. Furthermore, focusing on these age ranges also aligned with the Amalima Loko program objectives of improving IYCF practices during the first 1,000 days.

To conduct the analyses, guidance was offered to the Amalima Loko field team to consider combinations of foods that are considered most available; least expensive; sourced from diverse food groups; most likely to be given to a child; and that caregivers said they would be willing to try adding to typical meals. The analysis helped determine which quantity and combination of foods could contribute toward meeting the nutrient needs of the population at each meal. Following the workshop, the Amalima Loko team conducted analyses and shared those with USAID Advancing Nutrition to review and propose food combinations that were then tested through household behavior trials (TIPs).

Step 5: Test Recommendations

The objective of this step was to test some of the FBRs generated from the nutrient composition analysis in step 4, and other supportive behaviors defined in steps 2 and 3. This step used TIPs and we aimed to do the following:

1. Test participants' responses to recommendations for improving behaviors (e.g., modified feeding practices, inclusion of new ingredients, altered preparation), and determine the most feasible and acceptable.
2. Investigate the constraints on participants' willingness to change behaviors and their motivations for trying and sustaining the new practices.

These FBRs and supportive practices have the potential to positively impact the nutritional status of infants and young children, but they require a change in behavior by the caregiver(s) or supporting actors. After barriers and/or facilitators to adopt the improved recipes are identified, modifications can be made before promoting the improved practice through designated project activities. The test of recommendations is necessary for observing how caregivers and supporting actors carry out proposed recommendations under typical conditions. It is a consultative, bi-directional process, involving participants in the decision-making about the behaviors to promote. TIPs were created to help programs understand and predict with some confidence which behaviors would (or would not) be feasible for people to practice under current circumstances, and why; as well as what support may be needed to help people practice the behaviors. As households test new behaviors, they naturally adapt to their needs and find new solutions. Each visit to households iteratively builds on the previous one to identify what is truly feasible.

To achieve this step of the process, the team prepared materials to carry out the five phases of the methodology:

Table 1. Carrying Out the Five Phases of the Methodology

Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Set the Stage	Establish Needed Background	Try the Behaviors	Assess the Outcomes	Analyze and Make Recommendations
<ol style="list-style-type: none"> 1. Understand country context based on existing information. 2. Make ideal behavior recommendations. 3. Draft initial TIPs menu. 	<ol style="list-style-type: none"> 1. Gather information to understand household problems and current practices through interviews and observations. 2. Refine list of problems. 3. Tailor TIPs menu recommendations. 	<ol style="list-style-type: none"> 1. Counsel on possible behaviors to try. 2. Negotiate 1–2 new practices that the participant is willing to try. 3. Track distribution of practices. 	<ol style="list-style-type: none"> 1. Understand what participant was and was not able to do. 2. Learn from the participant about the most important barriers, supports, and perceived benefits. 3. Solicit suggestions from the participant about how to modify, how to promote, and how to ensure adoption. 	<ol style="list-style-type: none"> 1. Summarize critical information. 2. Determine strategies and interventions. 3. Determine measures and milestones.

Given that the Amalima Loko team had experience with using the TIPs methodology under the former Amalima program, as a refresher, USAID Advancing Nutrition provided the field team with a series of videos on carrying out steps in the methodology. We then carried out a series of preparatory calls to assist them with preparing their materials for the field exercise. The Amalima Loko field team adapted the most recent version of the abbreviated TIPs methodology tools for their program context. More specifically, they developed a Country Context Specifics list; TIPs Menu; Checklist for Assessing Practices and Appropriate Counseling Recommendations; Distribution of Practices Tracking Table; Summary of Actions and Agreements; Assessment Summary and Recommendations and Measures of Success; and TIPs household questionnaire forms.

The TIPs interviews were carried out over 10 days in February 2023 through a household behavior trial at the homes of the selected participants. The entire TIPs process, from preparing field materials, selecting households to participate, carrying out interviews, and analyzing the learning took four weeks. Interviews with caregivers were semi-structured interviews, either individual or small group interviews, depending on the availability of other household members (husbands, grandmothers). The team used purposive sampling in Binga and Lupane to identify households with children under 2. As Lupane is a more homogenous population, it had a smaller sample size. In Binga districts, there are polygamous and monogamous households, urban and rural households, and fishing and farming communities. Table 2

presents the final sample size, which included 10 households from Lupane and 21 households from Binga.

Table 2. Sample Size of TIPs Interviews in the Two Districts

Number of Households with Children Aged 6–11 Months or 12–23 Months	Binga	Lupane	Overall
6–11 months	9	4	13
12–23 months	13	6	19
Total	22	10	32

Menu of Behaviors and Foods

Using the USAID Advancing Nutrition Optimizing Local Diets Tool and nutrition and behavioral data from the program districts, Amalima Loko tested the following FBRs and supportive behaviors. See table 3.

Table 3. Food-Based Recommendations and Supporting Behaviors that Were Tested

Food-Based Recommendations
<ul style="list-style-type: none"> • Add x amount egg/ x amount kapenta/ x amount mopane worms/milk/meat to child’s bowl of porridge/sadza daily. • Refer to the menu of foods.
<ul style="list-style-type: none"> • Add groundnuts/cowpeas/ pumpkin seeds/sugar beans to child’s bowl of sadza daily. • Refer to the menu of foods.
<ul style="list-style-type: none"> • Add monkey orange/tamarind/moringa powder/baobab fruit/mango/banana to child’s meal daily. • Refer to the menu of foods.
<ul style="list-style-type: none"> • Add 1–2 nutritious snacks (sweet potato, fruits etc.) for between meals. • Refer to the menu of foods.

Supporting Behaviors that Were Tested

- Other household members assist with chores.
 - Husband/older siblings collect firewood/water in bulk.
 - Grandmother assists in feeding/preparing meals for the child.
- In-laws have joint discussion about foods to feed a child.
 - Work together to prepare food for child.
- Caregiver measures amount of food at preparation.
 - Caregiver measures amount of food consumed by the child using local cup with marking.
 - Offer 2–3 teaspoons (6–8 months old) to ½ cup (9–11 months old) at each meal to child 6–11 months.
 - Offer ¾ to 1 cup at each meal to child 12–23 months.

The tools were pilot-tested in Binga district on February 6, 2023. Initial field visits were carried out February 7–8, 2023, and follow-up visits February 13–15, 2023. Thirty-two interviews were conducted during the initial visits and 31 interviews during the follow-up visits. Each interview was approximately 90 minutes long. Table 4 in the findings section presents the number of informants that were asked, and either tried or did not try specific behaviors.

To support the implementing partner team, we provided a series of adaptable tools that could be useful to plan for and organize data during household visits, summarize the data, and make recommendations. The tools included the following. These are available in the guide in annex 4:

- TIPs menu, which outlines detailed problems that households may face, possible priority behaviors to address those problems, and then motivations that might encourage a participant to try the possible priority behaviors.
- Checklist for Assessing Practices and Appropriate Counseling Recommendations organizes the current practices, counseling approaches used, and recommends behavior.
- Distribution of Practices Tracking Table tracks the number of people who were asked to try a behavior, willing to try a behavior, and those who have plans to continue trying a behavior in the future. In addition, USAID Advancing Nutrition had regular check-ins with the team and reviewed their learning and analysis to help troubleshoot any issues.

Step 6. Apply Learning to the Program

This step provides draft program materials and suggestions for how the learning from the first five steps can be applied to the community-based program. This includes the learning from the review of secondary data and collection of primary data at the community and household level. The suggestions are in line with the priority behavior studied throughout this process, and are divided to focus on quantity (amount/meal and frequency) for both meals and snacks; variety of nutrient-rich foods; and other factors (determinants) as outlined in earlier steps (i.e., helping with household chores, food purchases, food preservation) by age group. USAID Advancing Nutrition designed a draft program

material template containing some of the learning and it is available in annex 2. It includes a list of foods by food group, including amounts to offer and frequency of feeding, by ages 6–11 and 12–23 months. In addition, there are suggested roles that others in the household can play regarding food gathering, purchasing, preparation, feeding, and household chores. These would be practices to support households in adopting through the various program platforms.

As outlined early on by the Amalima Loko field team, we describe the various program platforms through which the learning can be promoted in using the draft program material template. Those platforms are detailed in the recommendations section. As these are findings generated from an exercise carried out at one point in time in two districts, the draft materials will need to be further tailored to the audience reached through the various program platforms. The intention is for the Amalima Loko field team to further adapt these materials, as needed, for use in other districts.

Step 7. Use the Training Guide for Programming

This step provides a brief training guide for the Amalima Loko field team to use in preparing leaders of Care Groups and Male Champions, among other community-based groups and platforms, to effectively conduct peer group sessions that promote consumption of locally available foods for children 6–23 months of age. The Amalima Loko program staff intends to use the learning generated throughout this process, and the draft program material template (annex 2) to engage different types of peer leaders and change agents to support positive adoption of behaviors at the community and household level. A draft agenda for a one-day participatory training for the leaders, with five participatory exercises to use with their peers, is available in annex 3 (step 7). As this is a draft training guide, it needs to be tailored to the peer group being reached. Finally, as with the draft program material template (annex 2), the Amalima Loko field team should further adapt these materials, as needed, for use in other districts.

Findings

Presented below are the findings for the Amalima Loko program from the learning generated throughout the process to develop the FBRs. This includes the review of secondary data and collection of primary data at the community and household level.

Step 1. Review Secondary Data

Identify Sub-Optimal Dietary Factors

The most recent national nutrition survey found that 26 percent of CU5 in Zimbabwe are stunted, with a very similar prevalence in Lupane and Binga district (23 percent and 24 percent, respectively) (GoZ, Food and Nutrition Council 2018). While only 2.9 percent of children are affected by wasting across the country (ZIMSTAT and UNICEF 2019), Lupane and Binga districts have some of the highest rates in the country (5.9 percent and 6.2 percent, respectively) (GoZ Food and Nutrition Council 2022). From 2018 to 2021, severe acute malnutrition rates jumped from 0.4 percent to 3.9 percent in Lupane district, and from 0.2 percent to 6.2 percent in Binga district, likely due in part to the COVID-19 pandemic and other environmental crises.

Contributing to these trends are sub-optimal feeding and caring practices. Nationally, 4 percent of children 6–23 months of age receive a minimum acceptable diet, which is similar to that found in the Amalima Loko baseline survey (8 percent) (IMPEL 2022), and district vulnerability assessments (5.7 percent) (GoZ Food and Nutrition Council 2022). Only 25 percent of children receive a diverse diet (consume foods from five out of eight of the food groups, including breast milk), and 41 percent receive the recommended minimum number of meals per day. As outlined in table 2, while a large majority continue to be breastfed, consumption of vitamin A-rich fruits and vegetables is low (39 percent), including dairy products (32 percent), legumes and nuts (19 percent), and flesh foods (7 percent). This is in line with regional and national data. Furthermore, available trend data for Zimbabwe suggests that the vitamin A supplementation coverage rate is highly variable, and is currently estimated at 29 percent nationally, indicating that dietary sources of vitamin A-rich foods are important (World Bank 2023).

The national household dietary diversity score, a proxy for food access and an estimate of the quality of dietary intake, was only 5 out of 12, the same as that found in Matabeleland North (GoZ Food and Nutrition Council 2018). On a daily basis, the majority of households consume mainly cereals, with meat, eggs, dairy products, and pulses least frequently consumed. The food consumption score—a composite score based on households' dietary diversity, food frequency, and relative nutritional importance of different food groups—indicates that nationally 17 percent of households have a poor-quality diet. Matabeleland North has the highest proportion of households consuming a poor-quality diet (37 percent), described as consumption of cereals seven days a week, vegetables five to six days a week, sugar three to four days a week, oils/fats one day a week, and no animal proteins (GoZ Food and Nutrition Council 2018). Similar findings were identified in Amalima Loko's baseline survey for the program area, where 21 percent of households had poor food consumption, 26 percent borderline food consumption, and approximately half the population had an acceptable score (IMPEL 2022). Across the country, Matabeleland North has the highest proportion of households who never consume vitamin A-rich foods or iron-rich foods. Similarly, the province has the highest proportion of households who never consume protein-rich foods, from either animal or plant sources.

Eighty-one percent of households report experiencing moderate to severe food insecurity throughout the year. During difficult times of the year when access to cash and resources is limited, households report that the most common coping strategies include the inability to eat healthy and nutritious food (85 percent), eat only a few kinds of foods (82 percent), skip meals (74 percent), are worried they would not have enough food to eat (71 percent), are hungry but did not eat (59 percent), and go without eating for a whole day (49 percent), among other experiences (IMPEL 2022). See table 4.

Table 4. Baseline Evaluation of the Amalima Loko RFSA in Zimbabwe (2022)


Description	Mean
Minimum acceptable diet, children 6–23 months	8%
Female	8%
Male	9%
Minimum dietary diversity	
Breastfed	26%
Minimum meal frequency	
Breastfed	41%
Diet of minimum diversity, children 6–23 months	25%
Female	28%
Male	22%
Food groups consumed	
Breast milk	89%
Other fruits and vegetables	73%
Eggs	60%
Vitamin A-rich fruits and vegetables	39%
Dairy products	32%
Grains, roots, and tubers	31%
Legumes and nuts	19%
Flesh foods*	7%




* Flesh foods include wild animals, such as birds, wild pigeons, wild fowl, wild boar, monkey, rodents, and wild goat.

Additional Factors That Influence Nutrition Behaviors



Using the table provided by USAID Advancing Nutrition (table 5), the Amalima Loko field team categorized information from their refinement year studies and program baseline survey to analyze factors that may be barriers and enablers of the priority behavior, and to inform possible programming recommendations and approaches. Those highlighted in red are barriers that need to be overcome, while those highlighted in green are motivators that could be leveraged throughout the program. Other areas not highlighted are considered to still be useful as they relate to the priority behavior.

Table 5. Additional Factors That Influence Nutrition Behaviors



Which Factors Make It Easier or More Difficult to Practice the Priority Behavior?	District 1: Lupane	District 2: Binga	Cross-district or National Level
Structural			
 Accessibility to nutrient-rich foods ¹	<ul style="list-style-type: none"> • High cost of ASF. • Lack of local markets. • Poor production of nutritious foods. • Seasonality influences cost. 	<ul style="list-style-type: none"> • High cost of ASF. • Lack of local markets (an even bigger challenge in Binga due to distance issues, very few markets). • Poor production of nutritious foods. • Only one ward in Binga has fair production. • Seasonality influences cost. 	<p>Across all 4 districts:</p> <ul style="list-style-type: none"> • Limited access to income sources, encourages migration outside of Zimbabwe. • Low crop production. • Women obtain food from own production, wild fruit/tuber gathering, hunting, and fishing: 80%. • Purchase food at the market: 67%. • Borrow, barter, exchange for labor or receive food as gifts from friends or relatives: 33%. • Receive food aid: 28%. • Receive food from South Africa: 6%.






Which Factors Make It Easier or More Difficult to Practice the Priority Behavior?	District 1: Lupane	District 2: Binga	Cross-district or National Level
 Availability ¹	<ul style="list-style-type: none"> Distances to markets. Seasonality limits availability of production and gathering foods. Food production is a challenge due to water shortages/erratic rains. Lack of money to purchase nutrient-rich food. Few food preservation techniques. 	<ul style="list-style-type: none"> Distance to markets. Seasonality limits availability of production and gathering foods. Food production is a challenge due to water shortages/erratic rains. Lack of money to purchase nutrient-rich food. Few food preservation techniques. Underutilized foods: fish (for business, little for consumption), tamarind, moringa. 	<p>Across all 4 districts:</p> <ul style="list-style-type: none"> Dietary diversity is reported to be lowest during winter months (May–July), when the household diet is predominantly based on plain sadza or rice and dried vegetables. Vegetable gardening during winter months is meant to complement household diets but due to low rainfall and/or unavailability of water the harvest may not cover the household’s dietary needs. Low rainfall affects the availability of wild fruits.
 Cost ²	<ul style="list-style-type: none"> Lack of money to purchase nutrient-rich food due to few livelihood opportunities. 	<ul style="list-style-type: none"> Lack of money to purchase nutrient-rich food due to few livelihood opportunities. 	<p>Across all 4 districts:</p> <ul style="list-style-type: none"> Grain and relish shortages are rampant during the dry season due to low harvests and price volatility.
 Food or Nutrition Policies ³	<ul style="list-style-type: none"> Blanket Supplementary Feeding Program for PLWs and CU2. Micronutrient powders distribution. Vitamin A supplementation. 	<ul style="list-style-type: none"> Blanket Supplementary Feeding Program for PLWs and CU2. Micronutrient powders distribution. Vitamin A supplementation. 	<p>National level:</p> <ul style="list-style-type: none"> Mandatory fortification of processed staple foods—sugar (vitamin A), cooking oil (vitamin A and D), maize meal, and wheat flour (A, B1, B2, B3, B6, B12, folic acid, iron, and zinc). Promotion of three biofortified food


Which Factors Make It Easier or More Difficult to Practice the Priority Behavior?	District 1: Lupane	District 2: Binga	Cross-district or National Level
			crops: orange maize (vitamin A), Nua 45 beans (zinc and iron), and maize (protein).
<ul style="list-style-type: none"> Caregivers' time to prepare nutrient-rich meals 	<ul style="list-style-type: none"> Women have very little time to prepare meals. 	<ul style="list-style-type: none"> Women have very little time to prepare meals. In many polygamous households it is the responsibility of the mother/wife to source food (in some households). 	
<ul style="list-style-type: none"> Caregivers' time to prepare nutrient-rich snacks 	<ul style="list-style-type: none"> A common snack is <i>mahewu</i> (water mixed with pureed sadza) sometimes with sugar added. Wild fruits in season. Young mothers prefer salty/sugary snacks. 	<ul style="list-style-type: none"> A common snack is <i>mahewu</i> (water mixed with pureed sadza) sometimes with sugar added. Wild fruits in season. Young mothers prefer salty/sugary snacks. 	

Which Factors Make It Easier or More Difficult to Practice the Priority Behavior?	District 1: Lupane	District 2: Binga	Cross-district or National Level
Social			
 Norms around feeding practices ⁴	<p>Several cultural taboos:</p> <ul style="list-style-type: none"> • Children should not eat meat (they will be greedy). • Eggs (they will get fits/convulsions). • Cowpeas cause stomach pain/bloating. 	<p>Several cultural taboos:</p> <ul style="list-style-type: none"> • Children should not eat meat (they will be greedy) or grow up without manners. • Eggs (they will get fits/convulsions). • Peanut butter may cause sterility in children. 	<p>Across all 4 districts:</p> <ul style="list-style-type: none"> • Optimal meal frequency believed to protect against developing <i>kwashiorkor</i>. • Serving cold meals can lead to <i>kwashiorkor</i>. • Feeding the child too frequently could develop a big belly and, consequently, <i>kwashiorkor</i>. • Perceived poor child feeding practices—feeding a child <i>ilaja</i> (cold leftover sadza from previous day), and boiled dried maize grain <i>igwadla</i>. • Serving children sadza and okra considered inadequate complementary foods.
 Workload	<ul style="list-style-type: none"> • Workload is very high for women. • In peri-urban and urban areas the men are more supportive of workload burden. 	<ul style="list-style-type: none"> • Workload is very high for women, particularly in polygamous marriages where there is no sharing of duties or helping one another. 	<p>Across all 4 districts:</p> <ul style="list-style-type: none"> • Lower child meal frequency associated with heavy women’s workload. • Workload increases in rainy season, and perception of higher child vulnerability. • Higher workload associated with

Which Factors Make It Easier or More Difficult to Practice the Priority Behavior?	District 1: Lupane	District 2: Binga	Cross-district or National Level
			<p>higher caregiver stress.</p> <ul style="list-style-type: none"> • Children left with grandmothers and older siblings while mother engages in income-generating opportunities. • Men refrain from engaging in household chores—linked with witchcraft.
<ul style="list-style-type: none"> • Decision-making of caregivers (food purchases, food preparation, intra-household distribution of food) 	<ul style="list-style-type: none"> • Women have limited decision-making power about what food is sold or consumed. • Women need permission to slaughter a chicken. 	<ul style="list-style-type: none"> • Women have limited decision-making power about what food is sold or consumed. • In polygamous marriages, the man decides how food is divided. • Favorite wives tend to get/receive more, regardless of the number of children of the wife. • Some men think that women cannot participate in decisions once a bride price is paid. 	<p>Across all 4 districts:</p> <ul style="list-style-type: none"> • Household food consumption decisions: women decide in 80% of households, grandmothers in 11%, husband and wife decide together in 8%, husband decides in 4%. • Decision-making power for income, purchasing or selling livestock (cattle, goats, chickens) is primarily with men. • Women can only sell chickens if they earned money to purchase them. • For trips to the market or any trip outside the village, a husband's permission is needed.
<ul style="list-style-type: none"> • Control of income among caregivers 	<ul style="list-style-type: none"> • Women have very few income sources and little control of income (husband has control). 	<ul style="list-style-type: none"> • Women have very few income sources and little control of income (husband has control). • Bartering is common. 	

Which Factors Make It Easier or More Difficult to Practice the Priority Behavior?	District 1: Lupane	District 2: Binga	Cross-district or National Level
 Status of women (movement, approval)	<ul style="list-style-type: none"> Women need approval, less so in the urban areas (informing rather than approval). 	<ul style="list-style-type: none"> Women need approval (movement such as going to the market). 	
Other social factors	Polygamy is not common.	Polygamy is common.	Average household has 3–5 children, while polygamous households were reported to have up to 8–12 children.
Internal			
 Self-efficacy of caregiver to prepare nutrient-rich foods	<ul style="list-style-type: none"> Low self-efficacy due to lack of availability, high cost, low knowledge. 	<ul style="list-style-type: none"> Low self-efficacy due to lack of availability, high cost, low knowledge. Look down on locally grown foods like moringa. 	Across all 4 districts: <ul style="list-style-type: none"> Children in the care of young mothers or grandmothers were identified as particularly vulnerable to undernutrition. Young mothers feed sugary foods and ready-made <i>mahewu</i> due to the lack of knowledge and immaturity. Young mothers have less time to cook for their children.
Skills to prepare nutrient-rich foods	Lack of knowledge and skills—esp. around locally available/indigenous foods.	Lack of knowledge and skills—esp. around locally available/indigenous foods.	

Which Factors Make It Easier or More Difficult to Practice the Priority Behavior?	District 1: Lupane	District 2: Binga	Cross-district or National Level
 Perceived value of indigenous foods	<ul style="list-style-type: none"> Little knowledge on these. 	<ul style="list-style-type: none"> Look down on locally grown foods like moringa. Not sufficient knowledge on these. 	Across all 4 districts: pounded pumpkin seeds and tamarind used to enrich the porridge—subject to community mockery.
 Knowledge of nutrient-rich foods	Very limited knowledge.	Very limited knowledge.	
 Caregivers' attitude towards preparing nutrient-rich foods	Perceived as time-consuming—they will give children leftover sadza from the night before, sugary snacks, mahewu, same food every day.	Perceived as time-consuming—they will give children left over sadza from the night before, sugary snacks, mahewu, same food every day.	
 Caregivers' aspirations for their children 6–59 months	For a child to be healthy—an ideal baby breastfeeds well, eats well, gains weight.	For a child to be healthy—an ideal baby breastfeeds well, eats well, gains weight.	A healthy child is energetic, responsive to stimulation, plays with other children, eats well, and reaches milestones at expected ages.
 Childcare practices that affect child feeding		<ul style="list-style-type: none"> The practice of leaving the child with siblings was common, children were left under the care of siblings aged 10 years or older. Mothers who go grass cutting or fishing leave the children behind with siblings. 	

Which Factors Make It Easier or More Difficult to Practice the Priority Behavior?	District 1: Lupane	District 2: Binga	Cross-district or National Level
Supporting Actors and Actions			
 Institutional	Ministry of Health and Child Care (MoHCC), village health workers (VHWs), Amalima Loko, and other partners (few other partners doing nutrition)	MoHCC, VHWs, Amalima Loko, and other partners (few other partners doing nutrition)	
Community (traditional and religious leaders)	<ul style="list-style-type: none"> • Chiefs • Councilors • Village heads • Kraal heads • Religious leaders 	<ul style="list-style-type: none"> • Chiefs • Councilors • Village heads • Kraal heads • Religious leaders 	
Household (primary and secondary caregivers)	<ul style="list-style-type: none"> • Husbands • Mothers-in-law • Grandmothers • Other family members: aunts, uncles, grandfathers 	<ul style="list-style-type: none"> • Husbands • Other wives (polygamous marriage) • Mothers-in-law • Grandmothers • Other family members: aunts, uncles, grandfathers 	Perception that grandmothers and fathers, who hold decision-making power in the household, inhibit adoption of optimal young child feeding and caring practices.
Practicing a new behavior with support from a community member	<ul style="list-style-type: none"> • Peers • Village health workers • Lead Mothers 	<ul style="list-style-type: none"> • Peers • Village health workers • Lead Mothers 	

Which Factors Make It Easier or More Difficult to Practice the Priority Behavior?	District 1: Lupane	District 2: Binga	Cross-district or National Level
	<ul style="list-style-type: none"> • Lead Farmers 	<ul style="list-style-type: none"> • Lead Farmers 	
Practicing a new behavior with support from a household member	<ul style="list-style-type: none"> • Husbands • Mothers-in-law • Grandmothers • Other family members: aunts, uncles, grandfathers 	<ul style="list-style-type: none"> • Husbands • Other wives (polygamous marriage) • Mothers-in-law • Grandmothers • Other family members: aunts, uncles, grandfathers 	
Printed materials to serve as reminders	<ul style="list-style-type: none"> • VHWs and Lead Mothers – training materials (Care Groups) • Mothers/caregivers (will have recipe books) 	<ul style="list-style-type: none"> • VHWs and Lead Mothers – training materials (Care Groups) • Mothers/caregivers (will have recipe books) 	

¹ Availability: market distance/frequency, gathering foods, raising food, seasonality of foods, livelihood of nutrient-rich foods

² Cost definition: caregiver/household perception of ability to buy foods within the defined food groups at markets.

³ Note if in-kind food aid, locally available fortified foods, or home fortification with micronutrient supplements are available.

⁴ This may include how boys and girls are fed differently.

Factors highlighted in red may be barriers that need to be overcome to address the priority behavior, including accessibility, availability, and cost of nutrient-rich foods; caregivers' time to prepare nutrient-rich meals and snacks; norms around feeding practices; workload; decision-making of caregivers; control of income among caregivers; status of women; self-efficacy of caregiver to prepare nutrient-rich foods; skills and knowledge to prepare nutrient-rich foods; perceived value of indigenous foods; caregivers' attitude toward preparing nutrient-rich foods; and childcare practices that affect child feeding.

Accessibility: Nutrient-rich foods, particularly ASFs, are difficult to access due to a lack of markets, low production, cost, and seasonal constraints. The Amalima Loko baseline survey and NCA found that, in general, consumption of ASF is low, and some report it is virtually non-existent (in Binga district) (Amalima Loko 2022; IMPEL 2022). The NCA found that across all four program districts, one in seven children consumed milk or milk products, one in five consumed meat, and almost no children consumed eggs. In a Barrier Analysis, consumers of ASF found the behavior easy to practice as they had the livestock and did not depend on purchasing it at the market. Non-consumers found the practice difficult as they did not have the money to purchase these foods (CNFA 2022a).

In addition, few opportunities to engage in livelihood activities limits access to income, which has been exacerbated in recent years due to the COVID-19 pandemic (CNFA 2022). With few income-generating opportunities, migration to neighboring countries is common, which increases the workload for those left behind, including childcare. This commonly falls on elders in the household, such as grandmothers. A NCA found that 80 percent of women sourced food from their own production or in gathering, hunting, or fishing. Purchasing food at the market was the next most common way to access food (67 percent), while others borrowed, bartered, or received food in exchange for labor (33 percent). Twenty-eight percent of women relied on food aid to cover their dietary needs. Finally, a small proportion rely on food to be sent from South Africa (8 percent) (Amalima Loko 2022).

Availability: In Amalima Loko program areas, households' availability of nutrient-rich foods is heavily influenced by the season. Dietary diversity is reported to be lowest during winter months (May–July), during which the household diet is predominantly based on plain sadza or rice and dried vegetables. Vegetable gardening during winter months is meant to complement household diets, but due to low rainfall and/or unavailability of water, yields are limited. In the Community Visioning Study, caregivers described how gardens are used to grow vegetables for sale, and are limited to a select number of plants (tomatoes and dark-green leafy vegetables [DGLV]). Yet, some households don't have gardens because of a lack of water. Extended dry seasons also affect the availability of wild fruits, such as wild medlar (umviyo), wild ebony (mdlawuzo), and chocolate berry (umtshwankela). As such, in recent years, households have adopted a number of strategies to offset the limited availability of foods, including reducing meal frequency (from three to two meals a day), eating less diverse diets like sadza and vegetables, borrowing food, and prioritizing feeding children instead of adults (Amalima Loko 2022).

In both Lupane and Binga, lack of access to markets to sell or buy commodities contributes to low availability of food. Long distance to markets, high transportation costs, and poor road conditions make accessing markets difficult. Bartering is common in both districts. Distance in Binga is an even greater concern as markets are in Binga center and Lusulu (CNFA 2022). An NCA found that availability was the primary driving factor influencing food choice, followed by price, perception of nutritional value, and easy preparation. Table 6 shows the foods reported to be locally available, and their availability and affordability, where known.

Table 6. Locally Available Foods

Food Group	Foods
Pulses	<ul style="list-style-type: none"> • Beans • Cowpeas
Grains and staples	<ul style="list-style-type: none"> • White maize • Sorghum • Millet • Sweet potatoes
Nuts and seeds	<ul style="list-style-type: none"> • Peanuts (somewhat available) • Peanut butter (available but unaffordable)
Animal source foods	<ul style="list-style-type: none"> • Fish and seafood (unavailable) • Chicken (bartered) • Insects and mopane worms⁴ (only partially accepted) • Cow's milk (seasonally available)
Vegetables	<ul style="list-style-type: none"> • Vegetables (unavailable especially during winter months) • Cabbage (somewhat available) • Pumpkin, okra, DGLV, moringa (acceptable but unavailable)

Cost: The high cost of nutrient-rich foods hinders the ability to consume them regularly. While data on cost are limited, an NCA identified that a shortage of grain and vegetables is common during the dry season due to low harvests and price volatility (Amalima Loko 2022). Furthermore, the Amalima Loko baseline survey found that 84 percent of households lived on less than US\$1.90 per day (IMPEL 2022).

Caregivers' time and attitude toward preparing nutrient-rich meals and snacks/workload/childcare practices: These factors are all related. Time to prepare nutrient-rich meals is constrained, in part, by heavy workloads and needing to acquire food (Amalima Loko 2022). As a result, mothers will give children leftover sadza from the night before, sugary snacks, mahewu, and similar food every day. As reported in the NCA, women's daily routine usually starts between 4 and 5 a.m. and ends in the late evening. Women engage in a variety of activities, including household chores, childcare, as well as income-generating activities. Chores include house cleaning, water fetching, and food preparation. After breakfast, women engage in activities like grass harvesting, gardening, brick molding, basket weaving, land clearing, or weeding. While engaged in livelihood opportunities, children are left with grandmothers and

⁴ There is one main harvest for mopane worms per year, during the early months of the rainy season (November to January) but a smaller second harvest occurs in April-May following good rains. They are only available in some parts of Lupane district. In Binga they are sold by people bringing them from the areas where they are harvested.

older siblings. Despite having outside work, household chores are typically seen as a woman's responsibility. Unless a woman is unwell, men refrain from engaging in household chores as such behavior would be linked with witchcraft (Amalima Loko 2022). Furthermore, the Health Behavior Study found that men are rarely involved in child feeding, and are perceived as not being concerned about the health of women and children (CNFA 2022). There is some variation across program areas. In the Male Champions learning study, they found that while workload burden is acknowledged to be high across program areas, in peri-urban areas the men are more supportive of helping to reduce women's workload (Amalima Loko n.d.).

In Binga, where polygamous marriages are prominent, an average household has up to 8–12 children. In non-polygamous households there are 3–5 children. In these households, it is the responsibility of the mother to source food, but lack of time and costs are reported as challenges. As for snacks, caregivers report giving *mahewu* (water mixed with pureed sadza, sometimes with sugar added) between meals during a dry season, and as a main meal during wet season, as mothers have limited time to cook because of the heavy workload in the fields (Amalima Loko 2022). Wild fruits are offered between meals, but only when they are in season. And, last, some perceive that young mothers tend to offer children salty/sugary snacks, though it is not clear if this is directly related to lack of time to prepare more nutrient-rich foods or the availability of processed snacks.

Norms around feeding practices: There are many cultural taboos in the program context, such as the belief that children should not eat meat (they will be greedy) or eggs (they will have “fits”/epilepsy) (Amalima Loko 2022). In addition, a common perception is that “If the consumption is not controlled at a young age, children may end up embarrassing their parents (by having tantrums) if they do not receive animal-source food per their desire” (Amalima Loko 2022). In Binga, another belief is that peanut butter may cause sterility in children. In Lupane, some believe that cowpeas cause stomach pain and bloating. In a Barrier Analysis studying differences between doers and non-doers of optimal meal frequency, doers associate non-optimal meal frequency with *kwashiorkor*, while non-doers believe that *kwashiorkor* is a serious condition yet are not convinced that it is caused by non-optimal meal frequency, but rather cold meals (CNFA 2022a). In addition, non-doers fear that their child could develop a big belly and, consequently, *kwashiorkor*, if fed too frequently. Another assessment found that feeding a child *ilaja* (cold leftover sadza from previous day) and boiled dried maize *igwadla* are considered poor young child feeding practices (Amalima Loko 2022).

Decision-making of caregivers/status of women/control of income: These factors are all related. Women's autonomy and decision-making powers are quite restricted as most decisions are made by husbands. The freedom of movement varies across communities. In general, women do not need to seek permission to fetch water, cut grass, or collect firewood or materials for weaving. In some communities, they may go to church or visit a friend, provided they return within a short time. For trips to the market or any trip outside the village, a husband's permission is usually required. It appears that approval to move outside the community is required less in the urban areas, where they inform their husbands rather than seek approval (Chingarande 2022). However, women tend to inform their husbands about all their activities, as a way of avoiding conflict or even abandonment.

In terms of food-related decisions, women have limited decision-making power over what is sold or consumed, as household income is primarily managed by men. Men, exclusively, decide whether to purchase or sell livestock (cattle, goats, chickens). In Lupane, women need permission to slaughter a chicken, and can only sell them if they earned the money to purchase them in the first place (Amalima Loko 2022). In Binga, in polygamous marriages, husbands and senior wives hold decision-making power. When the livestock is sold, the husband decides what amount he will give to his wives, regardless of the number of children the wife has. Furthermore, men decide how food will be distributed across and within households, with “favorite” wives sometimes receiving more regardless of the number of children.

Self-efficacy and skills and knowledge of caregivers to prepare nutrient-rich foods: These two factors have very similar findings. In both districts it was widely reported that caregivers lack the knowledge and skills, and have low self-efficacy to prepare nutrient-rich foods, particularly for preparing indigenous foods (Amalima Loko 2022). This includes how to produce, store, process, and prepare the indigenous foods that are widely available in the districts. Fear of children choking on seeds was reported, indicating the caregivers were unsure how to prepare the foods so the children could eat it safely. Specific to younger mothers, they feed sugary foods and ready-made “mahewu” due to their lack of knowledge and immaturity. This practice of offering young children processed snacks and sweet beverages was widely reported in the NCA.

Perceived value of indigenous foods: In both districts, the value of indigenous foods is considered to be low. In Binga, locally grown foods like moringa are looked down on. In Binga and Hwange, pounded pumpkin seeds and tamarind were reported as alternatives to enrich the porridge; however, it was highlighted that such practice can be “a subject of community mockery.” Some caregivers substitute foods they already have. “If you do not have peanut butter, you can add ground roasted pumpkin seed to the child's porridge. The problem is that people will laugh at you if you do that” (Amalima Loko 2022).

The highlighted text in green in table 5 are potential motivators that could be leveraged throughout the program. They include food or nutrition policies; caregivers’ aspirations for their children; and institutional, community, and household influencers.

Food or nutrition policies: In June 2017, the GoZ made it mandatory for major local food manufacturers to fortify processed staple foods with micronutrients. The foods to be fortified included sugar (vitamin A), cooking oil (vitamins A and D), and maize meal and wheat flour (vitamins A, B1, B2, B3, B6, and B12; and folic acid, iron, and zinc). In addition to mandatory fortification, the GoZ is promoting three biofortified food crops, orange maize (vitamin A), Nua 45 beans (zinc and iron), and protein maize (Amalima Loko 2022). Despite mandatory food fortification, and knowledge, awareness of food fortification remains low among households. Less than 15 percent of households purchase fortified products in the market (GoZ Food and Nutrition Council 2018).

Some communities receive targeted supplementary food assistance through the World Food Programme (WFP) (USAID-funded), which is distributed during the lean season. The GoZ MoHCC also implements programming to improve household access to micronutrient powders and vitamin A supplementation, provided by the United Nations Children’s Fund (UNICEF). Despite micronutrient powders being available nationwide, the national nutrition survey found that only 7 percent of households had heard of the micronutrients, and only 5 percent had used them (GoZ Food and Nutrition Council 2018).

Caregivers’ aspirations for their children: Generally, caregivers aspire for their children to be healthy. One assessment reported that “an ideal baby breastfeeds well, eats well, and gains weight.” Other characteristics of a healthy child are that they are “energetic, responsive to stimulation, plays with other children, eats well, and reaches milestones at expected ages” (Amalima Loko 2022).

Institutional, community, and household influencers: Institutions whose actions may be supportive or inhibitive of the priority behavior include the MoHCC (village health workers); Ministry of Lands, Agriculture, Fisheries, Water and Rural Development; and many NGOs doing work in the nutrition and food security field (WFP, Food and Agriculture Organization of the UN (FAO), CARE, World Vision, among others). Coordination and collaboration are key for ensuring households in the same geographic area benefit from multi-sectoral programming.

Community leaders, such as traditional and religious leaders, can be very supportive or prohibitive of households in adopting practices. Key leaders include chiefs, councilors, village heads, Kraal heads, religious leaders, etc. At the household level, primary and secondary caregivers include husbands,

mothers-in-law, grandmothers, aunts, uncles, and grandfathers. In addition, in Binga, other wives in polygamous marriages may be influential. As identified in the NCA, grandmothers can be very influential in either supporting or inhibiting the adoption of optimal care and feeding practices, as they are often the child's primary caregivers in the mother's absence. In addition, the husband makes decisions about feeding and caring practices (Amalima Loko 2022).

Taken together, a review of the secondary data suggests that a lot of underlying factors are driving sub-optimal IYCF practices. To address these barriers and enablers, various community- and household-level influencers, beyond the primary caregiver, need to be engaged in identifying solutions to improve young child feeding practices. The program also needs to work at various levels—societal, community, and individual—to bring about positive outcomes. Last, program interventions will need to be multi-sectoral to address factors related to agriculture and livelihoods, health, nutrition, and gender, among others.

Step 2. Develop a Key Foods List

Key Foods List

Table 7 illustrates the Key Foods List developed by the Amalima Loko team. The table is organized by food groups, the local name, and the form from which the food is typically prepared. Foods were identified based on refinement year research, district- and community-level studies of foods available in the project communities, and learning from the community focus group exercise (market surveys and 24-hour dietary recalls on food availability, acceptability, and price variation) (Amalima Loko 2022; WFP and Food and Nutrition Council 2022). While these foods were listed as available in the two target districts, the team noted that some are only available at certain times of the year. Some yields are low because of water scarcity and extended dry seasons (millet, sweet potatoes, sorghum, chomolia, okra, gourds). In addition, some foods, while available, are not widely consumed due to perceptions around indigenous foods being poor man's foods, or religious reasons prohibit them from being consumed (monkey orange, blackjack, pumpkin leaves, moringa, velvet mild medlar). Concerns around improperly preparing foods and the risk of being poisoned was also noted (pumpkin leaves, blackjack). Eggs were listed, but there are beliefs around not giving these until a child is weaned. Last, the team noted an increasing preference to purchase or trade for processed foods at the markets instead of gathering those available in the wild (baobab, pumpkin).

Table 7. Key Foods List

Four-Star Food Group	Food Name	Variety/Local Name	Form of Food
Lupane District			
Animal source foods/insects	Goat/cow milk	Uchago	Fresh/raw
	Mopani worms	Amacimbi	Dried
	Fresh fish	Inhlanzi	Fresh/raw
	Kapenta	Amatamba	Dried
	Eggs	Amaqanda	Fresh/raw
Staples (including grains, roots, and tubers)	Millet	Inyawuthi	Dried
	White maize	Umumbu	Dried
	Sweet potatoes	Imbambayila	Dried
	Sorghum	Amabele	Dried
Legumes (including pulses, nuts, and seeds)	Cowpeas	Indumba	Dried
	Roundnuts	Indlubu	Dried

	Sugar beans	Indumba	Dried
	Pumpkin seeds	Intanga zejodo	Dried
	Groundnuts	Amazambane	Dried
Vegetables/fruits	Covo/chomolia	Umbida	Fresh/raw
	Okra leaves and pods	Idelele lamahlamvu/elentanga	Fresh/dried
	Blackjack	Ucucuza	Dried
	Pumpkin leaves	Ibhobola	Dried/fresh
	Monkey orange	Umkhemeswane	Fresh/raw
	Gourds	Amakhomane	Fresh/raw
	Baobab	Umkhomo	Dried
	Pumpkin	Ithanga	Fresh/raw
Four-Star Food Group	Food Name	Variety/Local Name	Form of Food
Binga District			
Animal source food/insects	Goat/cow milk	Uchago	Fresh/raw

	Flying termites	Izinhlwa	Dried
	Bullfrog	N/a	Dried
	Kapenta	Amatamba	Dried
	Eggs	Amaqanda	Fresh/raw
Staples (including grains, roots, and tubers)	Millet	Inyawuthi	Dried
	White maize	Umumbu	Dried
	Sweet potatoes	Imbambayila	Dried
	Sorghum	Amabele	Dried
Legumes (including pulses, nuts, and seeds)	Cowpeas	N/A	Dried
	Roundnuts	Indlubu	Dried
	Sugarbeans	Indumba	Dried
	Pumpkin seeds	Intanga zejodo	Dried
	Groundnuts	Amazambane	Dried
Vegetables/fruits	Moringa leaves	N/A	Dried

	Tamarind	N/A	Dried
	Watermelon	Ikhabe	Fresh
	Pumpkin leaves	Ibhobola	Dried/fresh
	Velvet mild medlar	Umviyo	Fresh/dried
	Gourds	Amakhomane	Fresh/raw

Results from Community Focus Group Discussions

Table 8 summarizes foods that were shared by caregivers during the community FGDs. During the discussions, caregivers described foods that are available in the community, including those produced or grown at home, raised, purchased, and gathered (including neglected and underutilized foods). This learning helped inform and validate the development of the Key Foods List.

Table 8. Foods Identified through the Community Focus Group Discussion

Categories	Foods		
Foods grown at home (gardens and fields)	<ul style="list-style-type: none"> • Maize • Groundnuts • Cowpeas • Pumpkins • Gourds • Sorghum • Spinach • Beetroot, rape • Oranges • Bananas 	<ul style="list-style-type: none"> • Melons • Okra leaves • Okra pods • Carrots • Onions • Mushrooms • Tsunga • Lentils • Blackjack • Butternuts 	<ul style="list-style-type: none"> • Tomatoes • Sweet potatoes • Sugar beans • Kale • Chomolieur • Moringa • Mangoes • Pawpaw • Guavas • Velvet mild medlar fruit
Animals raised at home	<ul style="list-style-type: none"> • Chicken for meat and eggs • Goats 	<ul style="list-style-type: none"> • Cows • Rabbits • Pigs 	
Foods purchased at the market	<ul style="list-style-type: none"> • Soya chunks • Fish • Potatoes • Oranges • Apples 	<ul style="list-style-type: none"> • Kapenta • Cooking oil • Mopani worms • Cabbage 	<ul style="list-style-type: none"> • Sugar • Cucumber • Peanut butter • Maize meal • Cowpeas
Foods that are preserved	<ul style="list-style-type: none"> • Fish • All types of vegetables • Bullfrogs • Grasshoppers • Groundnuts 	<ul style="list-style-type: none"> • Roundnuts • Cowpeas • Baobab • Donkey berry • Winged termites • Goat meat • Beef 	<ul style="list-style-type: none"> • Monkey orange • Pumpkin leaves • Bird plum/African sweets • Tomatoes • Velvet mild medlar fruit
Preservation methods	<ul style="list-style-type: none"> • Sun drying (e.g., for vegetables) • Boiling 	<ul style="list-style-type: none"> • Pounding and making powder • Pounding and making a paste 	

	<ul style="list-style-type: none"> Smoking and sun drying (e.g., for meat) 		
Seasonal influences	<ul style="list-style-type: none"> Water scarcity, erratic rainfall patterns, low yields, drought 		
Indigenous foods that are collected	<ul style="list-style-type: none"> Baobab Monkey orange Velvet mild medlar Snot apple 	<ul style="list-style-type: none"> Donkey berry Button wood fruit Red milk wood fruit Bird plum/African sweets, amarula 	<ul style="list-style-type: none"> Termites Bull frogs Grasshoppers Moringa Tamarind
Traditional foods that are becoming less commonly consumed	<ul style="list-style-type: none"> Winged termites/flying ants Termites 	<ul style="list-style-type: none"> Blackjack Donkey berry Button wood fruit 	
Perceptions of indigenous foods in the community	<ul style="list-style-type: none"> Looked down on Religious influences Poor social class Poor nutrient value 		

Step 3. Observe Common Meal Preparation

Results from the Meal Preparation Exercise

During the meal preparation exercise caregivers prepared typical meals for children 6–59 months and described the process as they carried it out. This process was followed by a pile-sorting exercise (step 3b) to better understand practices and perceptions around food preparation and feeding practices. In discussions with the caregivers, it was explained that children are generally fed differently from 6–11 months versus those 12 months and older. Main differences include that children under 12 months are fed a porridge that is easy to chew and swallow and includes fewer ingredients than the food being offered to children above 12 months, who typically eat from the household pot. Therefore, caregivers were split into different groups to observe how foods are prepared for children 6–11 months and those with children 12 months and above. While it was intended to have an equal number of meals demonstrated for the different age groups, very few caregivers had children 6–11 months. The field team felt this may be due to it being the rainy season, and caregivers were reluctant to transport younger children long distances in those conditions. Another suggestion was due to obligations to cultivate fields during the rainy season. Also, the team acknowledged there are fewer caregivers in this age range so, in theory, there would be fewer participants. Despite not having the ideal numbers to

prepare an equal number of dishes for the younger children, discussions continued for the two age groups.

Main learnings from the meal preparation exercise include the following:

- A variety of dishes are commonly prepared, and most are made with maize, sorghum, or millet as a base.
- Food preparation techniques include washing foods, roasting, pounding, boiling, and frying, among other methods.
- Caregivers typically add 1–3 additional ingredients to the staple grain.
- Caregivers do not measure ingredients using a measuring cup when they prepare food. They primarily measure using various spoons, handfuls, etc.
- Caregivers do not typically measure amounts of food that are offered to children.
- The field team observed that the thickness of the porridges prepared for all children was adequate (not too thin).
- The children consumed a wide variety of amounts, varying by age. Some children ate as little as 31 grams and others as much as 131 grams. Because the meal preparations were for multiple children varying in ages between 6–59 months, often a large quantity was prepared in a pot and then ladled out to the children. Often, the portion that was offered was larger than a child could consume, resulting in some food left over in their bowl or plate.

Below are three examples of the meals the caregivers prepared:

Porridge with Kapenta

Cooking time: 25 minutes

Ingredients	Amount Used in Household Measure	Amount Used in Grams (g)
Kapenta	1 plate	102 g
Cooking oil	2 tablespoons	
Sorghum mealie-meal	1 cup	
Water	1½ jug	2.5 L
Mealie-meal	1 cup	

Method

- Wash kapenta in warm water.
- Fry the kapenta.
- Pound the fried kapenta into a fine paste.
- Mix hot water with mealie-meal.
- Simmer for 10 minutes.
- Add kapenta paste to the porridge.
- Leave to simmer for 5 minutes.

- Porridge is ready to eat.

Groundnuts + monkey oranges

Cooking time: 40 minutes

Ingredients

- Groundnuts (201g)
- Monkey fruits (1,778g)
- Water
- Millet

Method

- Roast groundnuts.
- Break monkey fruits into a dish with water and remove seed.
- Boil the monkey fruit in water.
- Pound the groundnuts.
- Add 1 cup millet to the monkey fruit water.
- Simmer for 10 minutes.
- Mix the pounded groundnuts.
- Leave to simmer for 2 minutes.
- Porridge is ready to eat.

Cowpeas and dovi

Cooking time: 40 minutes

Ingredients

- Cowpeas (574g)
- 5 cups of water
- Mealie-meal

Method

- Roast cowpeas until brown.
- Pound the roasted cowpeas into a powder.
- Winnow the roasted cowpeas.
- Mix 5 cups of water with cowpea powder.
- Simmer.
- Add mealie-meal and simmer.

- Porridge is ready to eat.

Results from the Pile-Sorting Exercise

In conducting a pile-sorting exercise with caregivers, the field team learned about typical meal preparation practices coupled with interest in trying new foods. Questions were asked to probe factors influencing young child feeding, such as age, gender, access, and availability of food, among other factors. The pile-sorting exercise was conducted in tandem with the same participants as the meal preparation exercise and, therefore, they were caregivers of children ranging from 6–59 months of age. To focus the discussion around feeding practices by age group, caregivers were split into similar groups as those used for the meal preparation exercise, but questions focused on IYCF practices by 6–11 months, 12–23 months, and two years and older.

General learning from the pile-sort exercise across the two districts—

- There is some variation in the foods that are available between the two districts. However, there are a lot of similarities between the two districts. Similarities can be observed comparing the two key foods lists above (goat’s and cow’s milk, kapenta, eggs, millet, sorghum, maize, sweet potato, cowpea, groundnuts, roundnuts, sugar beans, pumpkin seeds, pumpkin leaves, and gourds)
- Sorghum, millet, and maize are grown, and these are the staple grains used in porridge or sadza
- A wide variety of foods are grown in fields, community gardens, and kitchen or household gardens. This includes primarily staple grains and vegetables
- Communities purchase foods at markets and commonly barter or trade food. Grains and foods produced by households, such as millet, sorghum, maize, poultry, and rabbits are traded for other items, such as cooking oil, peanut butter, potatoes, fish, beans, sugar, bananas, mangoes, kapenta, and mopani worms
- Animal husbandry practices include rearing goats, chickens, cows, rabbits, quail, and sheep
- A wide variety of wild or indigenous fruits are available in both districts at different periods throughout the year. Those include monkey orange, baobab, marula, donkey berry, snot apple, toffee, African chocolate berry, bird plum, button wood fruits, sour plum, chocolate berry, granite mangosteen, and velvet mild medlar fruit
- A wide variety of insects and ASFs are available at certain times of the year, including mopani worms, bullfrogs, locusts, termites, and kapenta
- There were mixed perceptions on the value of indigenous fruits. Some shared they are valuable because they are available for all people and cannot be bought with money or bartered. Others felt they are no longer as highly valued because people now prefer to purchase or barter processed foods from the markets instead of gathering foods
- Other positive perceptions of indigenous foods include that they are “healthy and tasty” for the children, don’t have to be purchased, are readily available during certain seasons, and “benefit the health of women, children, and entire households”
- Indigenous foods, such as locusts, termites, monkey orange, kale, gourd, and vegetables gathered in the forest (okra leaves and blackjack) are not highly valued as these are looked down on by most people in the community; they are regarded as poor man’s foods
- Foods that are becoming less commonly consumed include wild mushrooms, blackjack, and pumpkin leaves because they can poison a family if prepared improperly. Foods such as sour plums, covo, okra leaves, spinach, mushrooms, and chocolate berry are “no longer of interest.”

Others stated that the current generation no longer knows how to prepare some indigenous foods

- Different religions present in the districts influence young child feeding practices. One community stated that Christianity has a “strong hold on the people and looks down on indigenous foods;” the apostolic sects condemn eating some of the foods; or indigenous foods are “inimical to their spiritual well-being”
- Environmental factors, such as erratic rainfall, infertile soil, and water scarcity contribute to some of the foods becoming less consumed by community members, particularly those grown in household gardens
- A wide variety of food preservation practices exist. Vegetables are typically preserved by boiling, drying in the sun, and storing in sackcloth in plastic containers. Some are then ground into powder that can be used year-round for relish and to add flavor to children's porridge. Meats, such as goat, cow, fish, rabbit, bullfrogs, mopani worms, locust, termites, fish, and guinea fowl are preserved by either smoking them on the fire, sun drying, or boiling and sun drying. Cowpeas, groundnuts, roundnuts are typically pounded into powder.

Children 6–11 months of age are fed differently from those 12 months and above. The differences are described as follows:

- For children 6–11 months of age:
 - They are fed two–three meals every day, when food is available.
 - They are fed by their mother or grandparents, aunts, and siblings.
 - The children do not eat with other children on the same plate, as they typically eat from their own plates and cups.
 - In the morning, children are commonly fed porridge made from grain with one additional ingredient, such as milk, baobab fruit, peanut butter, butternut, or moringa powder.
 - In the afternoon, they are fed amahewu, melon, monkey orange, pawpaw, watermelon, and this is typically served as a single food rather than a meal.
 - In the evening, they are fed “pap” (sadza) with soup (made from meat or vegetables such as pumpkin leaves, blackjack, rape, chomolia, okra leaves, and okra pods).
 - Rarely are ASF being offered to children 6–11 months as part of their meals. On occasion, goat’s milk or cow’s milk was mentioned.
 - Breast milk was mentioned as a food that is provided to this age group.
- For children 12–23 months of age:
 - Three meals a day are served to children of this age range, when food is available.
 - They eat from their own plates and glasses. In rare situations, when the “relish” is insufficient, they share a plate with other children.
 - Grandmothers and mothers simply observe the eating process.

- In the morning, children are often fed leftover sadza (from the night before) with vegetable soup, meat soup, or porridge with one additional ingredient added to it, such as baobab, velvet mild medlar fruit, peanut butter, lemon, butternut, or guinea fowl eggs.
 - In the afternoon, some children are fed “Pap” (sadza) with meat, plain sadza, and porridge with baobab, while some children are only fed a snack (roundnuts; tea and homemade bread [millet or maize meal]; gourd; watermelon; monkey orange).
 - In the evening, children are fed Pap (sadza) with a food added, such as pumpkin leaves, okra leaves, okra pods, dried vegetables (chomolia, spinach), and roundnuts.
 - Commonly, children in this age range consume ASF (beef, guinea fowl, locusts, termites), eggs (chicken eggs or guinea fowl eggs), or bullfrog.
 - Breast milk was not mentioned as a food being offered to children in this age range.
- For children two years and older:
 - They eat two or three meals a day and they eat from their own plates and glasses.
 - Grandmothers and mothers serve the food.
 - In the morning, they are also offered porridge with tamarind, peanut butter, moringa, chicken eggs, guinea fowl, butternuts, velvet milk medlar fruit, or tea with bread.
 - In the afternoon, they are given Pap (sadza) with meat, guinea fowl eggs, dried locusts, a wide variety of fruit, (moringa, dried cowpeas leaves, pumpkin leaves, blackjack, DGLV), or vegetables.
 - In the evening, children are fed Pap (sadza) with a food added to it. This may include meat, okra, moringa, bullfrogs, locusts, termites, sweet potatoes, and sugar beans.
 - Older children typically are given meals with insects and ASFs.
 - Snacks
 - As midday snacks, children are commonly given indigenous foods and fruits, such as amahewu, toffee, pawpaw, mangoes, sweet potatoes, watermelon, kale, gourds, orange monkey, pumpkins, mangoes, cowpeas, roundnuts, snot apple, and African chocolate berry.
 - Grandmothers were mentioned as having a big impact on how children are fed, both for meals and snacks. For snacks, they occasionally offer candy, biscuits, and jiggies (candies) so “they can be pleased,” but these are also perceived to “cause ringworm among children.” In other cases, grandmothers will discourage mothers from giving children certain foods because of various cultural beliefs (eggs will cause epilepsy, meat will make a child greedy or become a thief).
 - Jiggies, biscuits, sweets, diluted drinks—named “jolly juice”—are considered bad snacks, while indigenous foods like amahewu, snot apples, and donkey berries were mentioned as examples of good snacks. See table 9.

Table 9. Additional Information Discussed

Topic Area Discussed	Responses
Main infant and child nutrition and feeding problems	Playful while feeding Men not involved in child feeding Grandmothers take care of children better as mothers are always busy Food the children do not like is a problem Not having food in the household When the child is ill Mother is not around
Food groups most likely to feed your child	ASF: milk, chicken, amacimbi, kapenta, beef, fish Carbohydrates: mealie-meal/maize cobs, mabele, sweet potatoes Fruits and vegetables: butternut, pumpkin, carrots, vegetables, guava, umviyo, mango, pawpaw, orange, bananas Lentils: beans and groundnuts
Food groups least likely to feed your child	ASF: kidneys (mostly eaten by fathers), pork (religious reasons), amahlabuse, eggs Vegetables: pumpkin seeds, umkhomo, mufushwa
Most expensive to least expensive	Most expensive: beef, kapenta Least expensive: bananas
Available all year to rarely available	Available all year: vegetables Rarely: kapenta, butternut
Easiest to hardest to raise at home	Easiest: chicken Hardest: cows
Food that can be fed to a child everyday	Sadza, porridge
Food that can be fed to a child several times every week	Okra, vegetables
Food that can be fed to a child once every week	Meat and milk
Foods that can be added in small amounts in a child's plate/bowl	Groundnuts, milk, cowpeas, monkey orange, mango, baobab fruit, mviyo
Preferred foods for specific family members	Boys: chicken testes, goat/cow Fathers: kidneys
Household decision on food preparation and frequency	Mother of child, grandmothers, fathers (sometimes) Child usually cries to signify hunger
Decision on how much to serve your child	Look at portion size because we know the amounts our children eat Give food on demand In some households, child eats first; in other households, everyone in the household eats at the same time.

Step 4. Analyze and Refine Food Combinations

The next step (step 4) involved determining which combination of foods are most suitable for meeting the unique nutrients needs of the priority populations. In this case, vitamin A and iron were the top two nutrients of concern for this population. To achieve our desired outputs, we used the Optimizing Local Diets Tool. The process and outcomes are listed below.

Results from the Nutrient Composition Analysis

Using the Key Foods List and the learning from the previous exercises, the field team ran scenarios to look at different combinations of foods. Noting that children are typically served food from a pot prepared for the family, we used the Optimizing Local Diets Tool to run scenarios of one ideal serving or meal from that pot, with the idea that a caregiver would prepare a meal with foods from several foods groups and add a specific food(s) to a child's own bowl to meet the nutrients of concern. Conforming to GoZ IYCF policy⁵ and global IYCF recommendations (UNICEF 2020), different combinations of foods were analyzed to identify how pairing foods across any three food groups (or more) in each meal could contribute to meeting 30 percent of daily nutrient requirements for vitamin A and iron for that age range. This would align with the eventual program recommendations to add one–two food groups to the child's bowl/plate made from the common meal served to others. Given the common meal is typically made from a staple cereal and usually another food, that would ensure meals provided to children include foods from three food groups, at a minimum. In addition, caregivers would be encouraged to offer foods across the four food groups (staples, ASF, legumes, fruits/vegetables) throughout the course of the day.

Tables 10–15 feature common combinations of local foods proposed by the Amalima Loko team. Individual quantities of each ingredient were selected to ensure they would contribute meaningfully toward closing the nutrient gaps (iron, vitamin A). Screenshots of examples of some of the combinations of foods are displayed below, organized by district and age. These align with global averages for the amount to feed a child of varying ages.⁶

⁵ Four-star diet is defined as a day's consumption of meals that contain all the four food groups: animal-source foods (flesh, eggs, milk, and milk products), staples (grains, roots, and tubers), legumes, and vitamin-rich foods (fruits and vegetables).

⁶ Guiding Principles for Complementary feeding of the Breastfed Child: For a child 6–11 months of age, 137–187g/d at 6–8 months, 206–281g/d at 9–11 months, AVERAGE: (209g for 6–11 months)/PER MEAL ~70g. 378–515g/d at 12–23 months. For a child 12–23 months of age, AVERAGE: (447g for 12–23 months)/PER MEAL ~149g.

Table 10. Children 6–11 Months of Age (Lupane district)

FBR #		1	2
Add FBR Name		FBR #1	FBR #2
Select Preparation Method		Boiled (<10 min) ▾	Boiled (<10 min) ▾
1	Millet (g)	50	40
2	Chicken (g)	15	
3	Mopane Worms (g)		10
4	Monkey Orange (g)		
5	Pumpkin leaves (g)	10	
6	Cowpeas (g)	10	
7	Cowmilk (g)		20
8	Roundnuts (g)		
9	Yellow watermelon (g)		
10	Sweetpotatoes (g)		
*	ADDED SUGAR (g)		5
*	ADDED SALT (g)		
*			
TOTAL FBR WEIGHT PER MEAL(g)		85 grams	75 grams

Table 10 shows two different meals for a child 6–11 months of age, denoted as FBR #1 and #2. In FBR #1, 50g of millet, 15g of chicken, 10g of pumpkin leaves, and 10g of cowpeas provides 62 percent daily value (DV) calcium, 43 percent DV iron, and 63 percent DV zinc (table 11). In FBR #2, 40g of millet, 10g of mopane worms, 20g of cow's milk, and 5g of sugar provides 64 percent DV calcium, 83 percent DV iron, and 43 percent DV zinc (table 12).

Table 11. FBR #1 Children 6–11 Months of Age (Lupane District)

Nutrient Composition				
Nutrients	Raw FBR Ingredients	Cooked FBR (w/ retention factor)	Infant (12-24 months), % DV	Infant (6-12 months), % DV
Energy (kcal, or calories)	249.55	249.55	25%	31%
Protein (g)	8.625	8.625	23%	29%
Total fat (g)	3.77	3.77	10%	12%
Carbohydrate (g)	20.12	20.12	16%	20%
Fiber (g)	2	2	12%	NA
Sugar (g)	0	0	NA	NA
Calcium [Ca] (mg)	160.05	160.05	40%	62%
Iron [Fe] (mg)	4.775	4.775	68%	43%
Magnesium [Mg] (mg)	8.1	8.1	12%	11%
Potassium [K] (mg)	46.4	46.4	5%	5%
Sodium [Na] (mg)	27.6	27.6	5%	7%
Zinc [Zn] (mg)	1.8905	1.8905	76%	63%
Vitamin A RAE (mcg)	23.55	18.84	9%	4%
Folate DFE (mcg)	3.35	2.68	2%	3%
Vitamin B12 (mcg)	0.1185	0.10665	15%	21%
Vitamin C (mg)	1.25	1	8%	2%

Table 12. FBR #2 Children 6–11 Months of Age (Lupane District)

Nutrient Composition			
Nutrients	Raw FBR Ingredients	Cooked FBR (w/ retention factor)	Infant (6-12 months), % DV
Energy (kcal, or calories)	214.05	214.05	26.8%
Protein (g)	8.8	8.8	29.3%
Total fat (g)	2.9	2.9	9.3%
Carbohydrate (g)	12.04	12.04	12.0%
Fiber (g)	1.18	1.18	NA
Sugar (g)	5	5	NA
Calcium [Ca] (mg)	157	157	60.4%
Iron [Fe] (mg)	9.13	9.13	83.0%
Magnesium [Mg] (mg)	0	0	0.0%
Potassium [K] (mg)	0	0	0.0%
Sodium [Na] (mg)	0	0	0.0%
Zinc [Zn] (mg)	1.294	1.294	43.1%
Vitamin A RAE (mcg)	9.4	7.52	1.5%
Folate DFE (mcg)	0	0	0.0%
Vitamin B12 (mcg)	0	0	0.0%
Vitamin C (mg)	0	0	0.0%

In table 13, the scenario shows two different meals for a child 12–23 months of age, denoted as FBR #1 and #2. In FBR #1, 60g of maize, 10g of tamarind, 15g of baobab fruit, 50g of egg, 10g of pumpkin seeds, 5g of sugar, and 0.05g of salt provides 85 percent DV iron, 72 percent DV zinc, and 57 percent DV

vitamin A (table 14). In FBR #2, 80g of maize, 20g of moringa leaves, 35g of kapenta, and 5g of sugar provides 359 percent DV calcium, 101 percent DV iron, 36 percent DV zinc, and 187 percent DV vitamin A (table 15).

Table 13. Children 12–23 Months of Age (Binga District)

FBR #		1	2
Add FBR Name		FBR #1	FBR #2
Select Preparation Method		Boiled (>10 min) ▾	Boiled (<10 min) ▾
1	Maize (g)	60	80
2	Tamarind (g)	10	
3	Moringa leaves (g)		20
4	Baobab fruit (g)	15	
5	Kapenta (g)		35
6	Eggs (g)	50	
7	Pumpkin (g)		
8	Goat milk (g)		
9	Ground nuts (g)		
10	Pumpkin seeds (g)	10	
*	ADDED SUGAR (g)	5	5
*	ADDED SALT (g)	0.05	0.05
*			
TOTAL FBR WEIGHT PER MEAL(g)		150.05 grams	140.05 grams

Table 14. FBR #1 Children 12–23 Months of Age (Binga District)

Nutrient Composition			
Nutrients	Raw FBR Ingredients	Cooked FBR (w/ retention factor)	Infant (12-24 months), % DV
Energy (kcal, or calories)	454.2	454.2	45.4%
Protein (g)	14.845	14.845	39.6%
Total fat (g)	12.97	12.97	33.4%
Carbohydrate (g)	63.92	63.92	51.1%
Fiber (g)	2.65	2.65	15.6%
Sugar (g)	5	5	NA
Calcium [Ca] (mg)	97.75	97.75	24.4%
Iron [Fe] (mg)	5.97	5.97	85.3%
Magnesium [Mg] (mg)	24.5	24.5	37.7%
Potassium [K] (mg)	325.55	325.55	36.2%
Sodium [Na] (mg)	31.407	31.407	5.2%
Zinc [Zn] (mg)	1.805	1.805	72.2%
Vitamin A RAE (mcg)	160.85	120.6375	57.4%
Folate DFE (mcg)	8.5	5.95	5.0%
Vitamin B12 (mcg)	0	0	0.0%
Vitamin C (mg)	2.115	1.269	9.8%

Table 15. FBR #2 Children 12–23 Months of Age (Binga District)

Nutrient Composition			
Nutrients	Raw FBR Ingredients	Cooked FBR (w/ retention factor)	Infant (12-24 months), % DV
Energy (kcal, or calories)	400.1	400.1	40.0%
Protein (g)	32.85	32.85	87.6%
Total fat (g)	6.205	6.205	16.0%
Carbohydrate (g)	67.6	67.6	54.1%
Fiber (g)	5.2	5.2	30.6%
Sugar (g)	5	5	NA
Calcium [Ca] (mg)	1439	1439	359.8%
Iron [Fe] (mg)	7.115	7.115	101.6%
Magnesium [Mg] (mg)	94.6	94.6	145.5%
Potassium [K] (mg)	247.2	247.2	27.5%
Sodium [Na] (mg)	64.883	64.883	10.8%
Zinc [Zn] (mg)	0.9	0.9	36.0%
Vitamin A RAE (mcg)	524.2	393.15	187.2%
Folate DFE (mcg)	108	75.6	63.0%
Vitamin B12 (mcg)	98	78.4	11200.0%
Vitamin C (mg)	0.182	0.1092	0.8%

Using the combinations proposed by the Amalima Loko team, the types and quantities of food were then organized in a table, by food groups, to reflect a menu of foods that would meaningfully contribute to meeting nutrient gaps (iron, vitamin A, and other nutrients like zinc and calcium) for the ages 6–11 and 12–23 months of age. This menu would be used to offer suggestions to caregivers for foods and quantities that could be added to the child’s own bowl of a typical meal, or consumed as a snack. In addition to the menu of foods, USAID Advancing Nutrition developed guidance that could be offered to caregivers on the appropriate quantity of food being offered (amount per meal), frequency of meals, and variety of nutrient-rich foods for both meals and snacks conforming to the needs by age group. These were based on global recommendations for optimal child development – to gradually increase food consistency and variety as the infant gets older, and to increase the frequency that the child is fed complementary foods as they get older (Dewey 2003). In addition, a list of tasks that various household members could carry out to support optimal young child feeding was drafted for use in the Amalima Loko field team’s program platforms. The menu of suggested foods and potential recommendations were then tested using the TIPs methodology. Those menus are presented below.

One learning that came out of this exercise is that while data was previously collected and analyzed by district (Binga and Lupane), the RFSA team agreed there are few differences between foods available in the two districts, and the variation exists at the household level, rather than the district level. Therefore, having one set of recommendations for both districts, allowing for varied food choices, would be most beneficial. This would permit caregivers to select options based on what is available (based on resources, livelihood, seasonality, market access, agricultural production, availability of indigenous foods), and they could adhere to any religious or other cultural preferences.

Children 6–11 Months

Household measurement:

1 tablespoon = 15 grams

1 teaspoon = 5 grams

1 cup = 250 grams

Animal Source Foods		Fruits/Vegetables	
Mopani worm powder	- 15 grams	Monkey orange	- 10 grams
Goat’s or cow’s milk	- 50 grams (¼ cup)	Tamarind	- 10 grams
Egg	- 1 egg	Moringa powder	- 5 grams
Kapenta	- 15 grams	Pumpkin leaves	- 10 grams
Chicken	- 15 grams	Watermelon (yellow)	- 10 grams
		Baobab fruit	- 10 grams
		Pumpkin	- 15 grams

Staple Grains		Legumes/Seeds	
Maize	- 50 grams	Cowpea	- 10 grams
Millet	- 50 grams	Groundnuts	- 10 grams
Sorghum	- 50 grams	Pumpkin seeds	- 5 grams
Sweet potato	- 50 grams		

Snacks	
Cowpeas	15 grams
Groundnuts	
Pumpkin	
Sweet potatoes	
Amahewu	
Snot apples (xakuxaku)	
Donkey berries (Umbhunzu)	
Pawpaw	
Mangoes	
Watermelon	
Kale (umbhida)	
Gourds (amakhomane)	
Monkey orange(umkhemswane)	

1. Prepare porridge or sadza, based on a staple available in your household.
2. For child 6–11 months, ladle 2–3 teaspoons of food (and transition to about ½ cup) of porridge or sadza to child’s bowl, per meal.

3. Add 1–2 foods from ASF, fruit/vegetable, or legume to the child’s bowl of porridge or sadza at each meal.
4. During the day, offer foods from each of the four food groups.
5. Feed your child a meal three times a day.
6. Offer one–two snacks between meals.
7. Continue breastfeeding on demand, day and night.
8. (Insert recommendation to engage grandmother with feeding a child.)
9. (Insert recommendation to husband to purchase certain food.)
10. (Insert recommendation to household member to help with a chore.)

Children 12–23 Months

Household measurement:

1 tablespoon = 15 grams

1 teaspoon = 5 grams

1 cup = 250 grams

Animal Source Foods		Fruits/Vegetables	
Mopani worm powder	- 30 grams	Monkey orange	- 20 grams
Goat’s or cow’s milk	- 75 grams (1/3 cup)	Tamarind	- 20 grams
Egg	- 1 egg	Moringa powder	- 5 grams
Kapenta	- 30 grams	Pumpkin leaves	- 20 grams
Chicken	- 30 grams	Watermelon (yellow)	- 20 grams
		Baobab fruit	- 20 grams
		Pumpkin	- 30 grams
Staple Grains		Legumes/Seeds	
Maize	- 80 grams	Cowpea	- 20 grams
Millet	- 80 grams	Groundnuts	- 20 grams
Sorghum	- 80 grams	Pumpkin seeds	- 10 grams
Sweet potato	- 80 grams		

Snacks	
Cowpeas	
Groundnuts	
Pumpkin	
Sweet potatoes	
Amahewu	
Snot apples (xakuxaku)	- 30 grams
Donkey berries (umbhunzu)	
Pawpaw	
Mangoes	
Watermelon	
Kale (umbhida)	
Gourds (amakhomane)	
Orange monkey (umkhemeswane)	

1. Prepare porridge or sadza, based on a staple available in your household.
2. For a child 12–23 months, ladle $\frac{3}{4}$ cup to 1 cup to child's bowl, per meal.
3. Add 1–2 foods from ASF, fruit/vegetable, or legumes to the child's bowl of porridge or sadza at each meal.
4. During the day, offer foods from each of the four food groups.
5. Feed your child a meal three–four times a day.
6. Offer one–two snacks between meals.
7. Continue breastfeeding on demand, day and night.
8. (Insert recommendation to engage grandmother with feeding a child.)
9. (Insert recommendation to husband to purchase certain food.)
10. (Insert recommendation to household member to help with a chore.)

Step 5. Test Recommendations

Using learning from the formative steps, the research team worked with households to test promising FBRs and supportive behaviors within households. Households selected and tested recommendations following a TIPs approach.

a. Set the Stage

The Amalima Loko team outlined common child feeding problems and recommendations using foods from the Key Foods List to offer households, and factors that may influence caregivers to adopt FBRs based on learning from the formative exercises with communities. A key learning was that variation in food access is high at the household level, and this led to using a menu of options for each FBR. Having these options prepared in advance, based on the nutritional analysis of the Key Foods List and what communities identified as possible, allowed caregivers to select what they would be willing to try given the available resources. The observations of meal preparation and feeding practices by age of children allowed the menu of options to be tailored specifically to what could be small and incremental, but still significant, improvements by the age of the child.

b. Establish Needed Background

As described in the methods section, the team sampled 32 households. The sample purposively selected caregivers in two districts with children between 6–11 and 12–23 months of age, aiming to include a variety of socio-demographic characteristics of caregivers. Table 16 outlines the characteristics of the sample.

Table 16. Characteristics of TIPs Participants

Age of Caregivers	Binga District	Lupane District	Overall
15–25 years	9	5	14
26–39 years	11	4	15
40–55 years	2	1	3
Marital Status	Binga	Lupane	Overall
Divorced/separated	1		1
Married (monogamous)	17	6	23
Married (polygamous)	3		3
Single	1	4	5

Age of Caregivers	Binga	Lupane	Overall
Primary Level	9	4	13
Secondary Level	13	6	19
Child's Age	Binga	Lupane	Overall
12–23 months	13	6	19
6–11 months	9	4	13
Sex of Child	Binga	Lupane	Overall
Female	9	5	14
Male	13	5	18

The research team conducted two visits to each household. The first visit combined the assessment and counseling visits in a three-visit TIPs into one visit, because of the formative steps already completed. During the first visit, Amalima Loko staff and caregivers together negotiated to determine the number and type of recommendations to discuss using the menu of options. This process ensures that participants determine which recommendations they would be willing to try. It also means that the recommendations that few or no participants tried are not needed for the trial, because households are already practicing these or are not interested in trying. However, these practices, based on formative work done prior to the TIPs, indicate that the factor is still important to address, and the program could work with households to find acceptable ways to do this.

Depending on the household background, researchers offered each household only one–three FBRs and/or supporting behaviors to try, so as to not overwhelm the caregiver given the seven-days trial period. The full list of recommendations offered are listed in table 4.

The types of FBRs that households wanted to try were consistent—adding ASF, legumes, and snacks (in order of frequency). However, there was great variety around which specific foods were selected by informants even in smaller, more homogenous communities. Those are noted below in the analysis.

Behaviors related to household members assisting with chores (such as collecting firewood or water in bulk, or assisting with feeding/preparing meals for the child), and in-laws having joint discussions about foods to feed a child or working together to prepare food for a child were not selected because they were not identified as issues with the interviewed households.

c. Try the Behaviors

Table 17 presents the number of participants who tried recommendations and the number of participants who did not try. Participants had seven days to try the new behaviors in their daily life.

Table 17. Results from Testing Food-based Recommendations and Supporting Behaviors

	Number of People Asked	Number of Households That Tried	Households That Did Not Try
Recommendations offered and number of households that tried recommendations			
Add x amount egg/x amount kapenta/x amount mopane worms/milk/meat to child's bowl of porridge/sadza daily.	27	25	2
Add groundnuts/cowpeas/groundnuts/ pumpkin seeds/sugar beans to child's sadza bowl daily.	23	19	4
Add monkey orange/tamarind/moringa powder/baobab fruit/mango/banana to child's meal daily.	14	14	0
Add 1–2 nutritious snacks (sweet potato, fruits etc.) between meals.	19	19	0
Results of supporting behaviors that were tested			
Other household members assist with chores. Husband/older siblings collect firewood/water in bulk. Grandmother assists in feeding/preparing meals for the child.	5	2	3
Caregiver measures amount of food at preparation.	1	1	0
Caregiver measures amount of food consumed by the child using local cup with marking.	2	2	0
Offer 2–3 teaspoons to ½ cup at each meal to child 6–11 months.	2	2	0
Offer ¾–1 cup at each meal to child 12–23 months.	4	4	0

d. Assess the Outcomes

After seven days, when the research team returned to households for their second follow-up visit, the researcher and participants assessed outcomes together. They discussed each recommendation that the participant agreed to try, what happened, any benefits and challenges they faced, and any modifications they made to fit their needs and their daily lives.

Caregivers shared that they wanted to try new foods and food combinations because they generally shared a level of curiosity about what actually works to keep their children “free from diseases with smooth skin and black hair,” a strong body, to see them growing well, and to prevent the child from crying “so that the child will not disturb the rest of the family.” When husbands and grandmothers were involved in the counseling visits, caregivers noted that their motivation to try a recommendation was the support they received from their family members. There were also expressions of trusting Amalima Loko staff to offer accurate information to support their decision. As a result, participants tried nearly all the proposed FBRs.

For those participants who did not try the recommendations they had agreed to try, they explained that they simply did not have time due to long hours away in the fields, or did not have access to the food in the household. As a result, households were able to try foods that were accessible at the household. Households that owned cows or goats, or were given some from a family member who had slaughtered an animal, added it to meals. In one case, a caregiver sourced goat meat from an uncle, which she then dried and added to the porridge.

e. Analyze and Make Recommendations

The team analyzed findings for all households and looked for patterns.

The trial sample considered a variety of socio-demographic characteristics that reflect the two districts. Findings did not significantly differ by characteristics—neither with what households were willing to try, nor with their challenges, motivations, or successes.

Most participants shared that they were successful trying the FBRs because they believed that what was being fed would help their child, the food was readily available, and the child liked the taste. The support of household members may have factored into certain recommendations being selected and successfully tried. The following learning is organized by FBRs related to type of foods, amount, and frequency of feeding; as well as other factors, such as access to foods, knowledge, time, and skills to prepare foods, and also family support.

I. Type of foods:

- a. **ASF:** Out of 27 caregivers who agreed to try, 25 were successful. Households selected the specific ASF from the list of foods provided by the interviewer. Mopane worms (dried or boiled) and fresh goat’s or cow’s milk were most commonly added to porridge or sadza. One household mixed pumpkin with fresh milk. For mopane worms, consistency was key. Children were more likely to eat sadza with mopane worms if the head was removed, finely ground, and sieved completely. Other ASF tried included boiled chicken, stewed cow meat, dried goat meat and beef, and eggs. While a few succeeded in adding an egg to porridge or offering a boiled egg as a snack, there were mixed experiences among sampled households. Some informants were willing to try, while others were not. One grandmother shared that she believes that when one feeds a child with eggs, it will result in black thick hair (good hair quality). In cases where participants were not willing to try, cultural beliefs around the notion that they make

children have seizures may have contributed to these perceptions, in addition to the distaste for the smell of eggs.

- b. **Legumes:** Out of 23 caregivers who agreed to try, 19 caregivers tried this practice and selected from the list of foods provided by the interviewer. Several households tried adding cowpeas to sadza and porridge. While acceptable, several said preparing cowpeas is time-consuming as they require roasting and grinding into powder, especially for mothers who are in the field during the day. One caregiver had success with modifying a FBR by grinding soya beans and mixing them with maize to produce mealie-meal for porridge, because her husband ground them for her. Peanut butter, when money is available to purchase it, is easy to add to porridge or vegetables. One household modified the recommendation to add peanut butter by substituting pumpkin seed powder.
 - c. **Fruits and vegetables:** All 14 caregivers who were willing to try this practice did so, and they selected from the list of foods provided by the interviewer. Participants used chomolia, rape, moringa leaves, okra leaves and pods, pumpkin leaves, gourds, mushroom, monkey fruit, and sweet lemon. Informants were willing to try a variety of fruits and vegetables, mainly depending on what was grown at home or available to be collected in the wild. Some paired foods across food groups, such as offering sadza with beef stew containing tomatoes. Others said the children consumed vegetables without the sadza. Another had success with drying pumpkin leaves and moringa leaves and adding those to porridge or sadza.
 - d. **Snacks:** All 19 participants who agreed were successful in trying to feed healthy snacks to children. Many added moringa powder in “maheu”, and one mother found it useful to serve her child pieces of pumpkin.
2. **Amount of food offered:** Few participants selected these recommendations to test. Although caregivers typically do not measure the amount of food when serving children, most did not feel it was an issue or were not interested in trying it. Typically, they give food until the child is full, or the child eats from communal platters, and they do not know how much the child consumes. Most older children eat using their own bowl or plate and feed themselves. The caregiver feeds younger children using a spoon for porridge and the caregiver's hands for sadza, and most commonly from the child's own bowl. On a rare occasion, a child may eat from the same plate as an older child. The few households that tried increasing amounts did so to learn how much food the child could eat.
 3. **Observations related to other sectors:** While not fully explored in the TIPs trial, a few caregivers reported that when children were sick, they didn't want to eat the food that was offered, or they vomited. In addition, a few observations included not seeing a latrine or any hand-washing facilities at the household.
 4. **Common factors that influence willingness to try the recommendations, successful trial, and intention to continue** came out from the analysis: knowledge, access to foods, preparation methods, and family support.
 - **Knowledge** does appear to influence the FBRs that were tested during TIPs. Participants expressed that they did not realize there were options for diversifying their

child's diet. Examples include not being aware of some ways to enrich porridge with egg or goat's milk, not knowing how much food to offer a child 11 months of age, and not knowing how to store legumes. The knowledge offered, and encouragement by the interviewer, resulted in caregivers being willing to try practicing new FBRs. However, knowledge was not enough to ensure that participants could practice the FBRs due to additional barriers such as affordability, availability, and family support.

- **Accessibility** to specific foods was a key consideration for participants when trying FBRs. This experience led to a more nuanced understanding of accessibility in this context. Although the foods that were selected for the menu of options were deemed locally and seasonally available, the findings suggest that the foods are not available for everyone. Participants described availability in terms of foods available “in my garden” or “at my home.” Community gardens where they grow vegetables, kitchen gardens in backyards, and a dam where the caregiver catches fish, were mentioned by some households. If the food item needed to be purchased (even at the market, for example) it was considered “not available.” This was the case for mopane worms, for example, which are not harvested at home; milk that is not produced from family's livestock; and peanut butter that needed to be purchased. In cases where the participant agreed to try a food that was available in the community, but not in the household, many could not try it. However, the findings show that most participants (25 out of 32) were willing and able to find some type of food within their household resources to meet the recommendation.
- The food preparation methods influenced **convenience and taste**. Finely grinding foods into powder form (mopani worms, for example) influenced whether the child liked it and ate it. In the case of adding dried goat's meat or beef, children consumed it willingly when the dried meat was crushed in small pieces for easy chewing. However, the time to prepare the foods influenced whether the caregiver intends to continue the practice. Caregivers felt that drying and roasting cowpeas before grinding manually and then boiling was too time consuming, but that they could fry and grind cowpeas in bulk (5 liters of powdered roasted cowpeas) to enrich the porridge each day in a more convenient way. Some succeeded with the recommendations because they had a mill to grind beans at home.
- **Family support** was helpful for some participants to get the foods to try. Participants described the roles of family members in child feeding; the mother is the primary caregiver who feeds the child, while the father may assist when the mother is busy. A few noted that the husband is rarely at home, often stating he resides in South Africa. One woman stated that in the absence of the husband, other wives can work the grinding mill to produce readily available flours. Grandmothers were mentioned commonly as someone who helps with feeding, particularly when the mother is “committed with other chores.” Less frequently, caregivers mentioned that older siblings help out with feeding younger siblings. In one case, the mother explained that other wives help when she is busy. One caregiver shared that sadza was eaten with sugar beans because the beans were received from relatives in town. Another stated the husband purchased peanut butter, which allowed her to add it to the porridge. One caregiver asked the neighbor for cowpeas so she could try the practice. Supportive behaviors regarding joint discussion about foods, or managing chores around the house,

were not selected because they were not identified as gaps. In the TIPs methodology, behaviors should only be suggested if they align with the issues that arise in the discussion. No households mentioned having trouble with in-laws. This is not to suggest that this is not an issue to address, but it did not come up in the trial.

The team reflected on the limitations of the methodology. The time allotted for household trials was generally sufficient but could have benefited from a longer duration for caregivers to practice a behavior. A longer period of practice may have allowed families to try more options from the menu of foods, which could have deepened the team's understanding of which foods and practices were most resonant, and why. The methodology was, however, useful for noting some of the factors that impacted the experiences of caregivers in terms of availability, accessibility, and preference for specific foods, and the roles household members can play in young child feeding.

Based on the learning from testing the FBRs in the trials, the field team felt confident that they could use the recommended menu of foods and amounts in their program activities. The field team appreciated that they had a menu to offer to the households to select from, as each household had access to different foods. They felt this led to success in trying practices, as the caregivers had options to choose from and could make small adjustments or choose new foods over time. The list with the supportive practices was further detailed based on the learning about how different household members could play a role in supporting young child feeding practices.

Synthesis of Findings

The following is a synthesis of the findings learned throughout all the steps of the process—from the review of secondary data, collection of primary data, and testing of select FBRs and supportive behaviors. The FBRs and supportive behaviors determined to be acceptable and feasible through the household behavioral trials, were learned in using a menu of options to offer at the household level. The findings from all these steps are organized by FBRs related to dietary diversity and meal frequency and amounts (specific to the priority behavior), followed by the factors previously outlined that influence these optimal child feeding behaviors.

Findings on Child Feeding Behaviors

Caregivers feed children a diverse diet through meals and snacks daily: The meal preparation exercise and pile-sorting exercises found that meals often consist of a staple (grain) and one, or sometimes two, additional foods, often plant-based. ASF, including insects, are available but mainly offered to older age groups. Children 12 months and older are fed quite similarly, but children 6–11 months of age receive a diet that is very starchy and does not have much diversity, with few ASF offered. Household trials showed that most caregivers were willing and able to add ASF to children's meals. More than half were also willing and able to add legumes to meals, and to offer healthy snacks between meals.

During the household trials, when counseling a caregiver, offering a list or menu of options of what to add to the typical meal for that child (porridge, sadza) made it possible for most caregivers to find a way to add diverse foods. Using a menu more likely resulted in adoption of an improved practice, as no foods were unanimously tried and accepted. This is the experience of other projects, where offering a more prescriptive recommendation was found to be difficult to adopt due to the variability in availability of food, whether due to seasonality, livelihood, access to gathering indigenous foods or markets, or cultural preferences due to religion and other factors (Helen Keller International 2023).

Participants shared their desire for a healthy and happy child, family support, and trust in the staff as motivations to try these foods.

Caregivers feed children 6–23 months with age-appropriate frequency and amounts: Community exercises found that across all age groups children receive two meals, and sometimes three, per day depending on food availability and caregivers' time. Typically, children are fed porridge at breakfast and

sadza at dinner, with a midday snack often limited to one type of food. Children usually receive meals from their own bowl and plate. This means that global guidance is not met regarding the number of times to feed children (2–4 meals a day) depending on age, and increasing with frequency as they grow older, starting at six months of age. As was noted in a Barrier Analysis on optimal meal frequency, frequency of meals is influenced by food availability and money to purchase food. “Preparing meals for my child is not a challenge for me when I have enough food and/or money to buy it.” “If resources are available, it is easy to remember, especially when you have enough love for your child.” (CNFA 2022a).

The community exercise on meal preparation also found that the quantity of various foods offered to children is not measured using standard measurement units, and knowledge of the amount of food to offer to a child by age range is low. Caregivers typically do not measure food when cooking and serving children, but most offer food to children in their own bowl or plate. Few caregivers in the household trials were interested in trying to measure food or feed a particular amount to their child. However, the few that tried were successful. Furthermore, more than half the participants were willing and able to add healthy snacks each day, which may have increased the amount of food children ate. This work generated a list of nutrient-rich foods that caregivers and family members could offer as snacks to children, following the global recommendation to offer your child one–two snacks between meals. The household trials found that more than half of caregivers agreed to try giving children healthy snacks between meals, and they succeeded. This is a promising FBR to integrate into the program.

Last, while breastfeeding was not a primary focus of this work, the field team observed that caregivers were breastfeeding children during household visits. They also reported that they were giving breast milk to the younger children, and to a lesser degree in the child’s second year of life. There was some mention of not offering specific foods (eggs) until a child was weaned, though this needs to be further explored.

Findings on Factors that Influence the FBRs

Structural level factors

Access and availability to nutrient-rich foods: Food access and availability came out as primary determinants for diversifying young children’s diets and the frequency of feeding. There was some variation in the foods available by district, whether grown or gathered; however, there were many similarities as well, as noted in the Key Foods List. In general, adoption of FBRs during the TIPs trial was possible for caregivers who have the food at home and didn’t have to purchase it at markets. This is consistent with research on consumers and non-consumers of ASF; non-consumers did not have the means to ensure the addition of ASF to their diet (CNFA 2022a). A motivation for trying pumpkins, eggs, and milk was their current availability at home. While some caregivers aimed to try a nutrient-rich food, some failed because they were unable to purchase the food or it was not yet in season. Limited market access was mentioned in some locations, yet some households relied on purchasing foods. Despite the constraints, the menu offered options to families, and they were successful in adding a small quantity of ASF, legumes, and vegetables and fruits to their children’s daily meals. Those particular foods varied by household in what they had available and was accessible.

Time to prepare nutrient-rich foods: The way that foods are prepared influences whether the child consumed it, and whether the caregiver was willing to continue doing the practice. For example, during the household trials, children liked mopani worms prepared with the heads removed and pounded into a fine powder. Various legumes required time-intensive preparation practices that influenced if caregivers would try them. These factors influence whether the mother can continue to use the food. Supporting caregivers in preserving and preparing nutrient-rich foods for children and/or offering these foods through women’s groups and local markets has the potential to improve children’s diets.

Social-level factors

Social norms around young child feeding: Several cultural norms restrict what caregivers are willing to feed children. It is widely believed that eggs can cause epilepsy in children or affect the growth of their teeth, and that young children should not eat meat as they will grow up to be greedy, and may embarrass parents through tantrums if they do not receive what they want at others' houses. Children fed too frequently or fed cold foods may get *kwashiorkor* or a big belly (CNFA 2022a). Peanut butter is said to affect the reproductive system of young children (CNFA 2023). Religions appear to heavily influence nutrition and health practices. Strict Apostolic church group members and traditionalists are not willing to try modern health care methods for conditions they believe are linked to witchcraft, as they do not believe these conditions can be treated at the health center (CNFA 2022b). Christianity has a "strong hold on the people looking down on indigenous foods." The Apostolic sects "condemn eating some of the foods." Furthermore, the pile-sorting exercise revealed that some foods are prioritized for boys, such as chicken testicles, goat's meat, beef, pork, cow's milk, locusts, and bullfrogs. While there are many negative perceptions, a positive perspective during the household trials was one grandmother sharing that she believes that when one feeds a child with eggs, it will result in black thick hair (good hair quality). Furthermore, the household trials showed that caregivers were largely willing and able to find ways to meet the FBRs, especially for ASF, legumes and snacks, within their own religious and cultural norms. These social norms should be further explored through community platforms.

Gender roles and decision-making: The management of household income rests primarily in the hands of men. The decision to purchase or sell livestock (cattle, goats, chickens) is exclusively done by men. Women can only sell chickens if they earned the money to purchase them. There are varying levels of freedom of movement and decision-making across the program areas. In some communities, women need to get permission to engage in activities. The Amalima Loko baseline report found that women are often unable to make decisions on their own, needing permission to purchase things in the market and visit women in other villages (IMPEL 2022). Other studies show that women have more freedom though tend to keep their husbands informed of all activities.

Family and community support: A number of household members were said to be involved in decisions around food purchasing, preparation and actual feeding of young children: aunts, grandmothers, siblings, husbands, other wives. Grandmothers were mentioned as having a big impact on how children are fed, and they occasionally offer small children candy, biscuits, and jiggies so "they can be pleased." Grandmothers are also viewed as trusted sources of health and nutrition information (CNFA 2023). While the Health Behavior Study found that child feeding is the role and space of women (CNFA 2022b), and the NCA found that unless a woman is unwell, men refrain from engaging in household chores as such behavior would be linked with witchcraft, the household trials showed examples of support. For example, one husband ground the cowpea flour for his wife so she could use it to prepare a meal for their child.

Given the time burden of women's workload, it is critical that household members play various roles in helping with young child feeding or helping with chores around the house. Mothers described having to go early to the field, which is far from home, before giving their children breakfast. Children are left with grandmothers and older siblings while mothers go to search for work to earn money or do their chores, thus limiting their time to have frequent meals. Home-made "mahewu" is commonly given to children between meals during a dry season; however, it may constitute a main meal during a wet season as mothers have limited time to cook because of the heavy workload in the fields.

In the household trials, some caregivers had success trying recommendations when various household members played different roles. One mother sent her husband to collect some mopane worms after she ran out so that she could offer these three times in a week. In another case, the father purchased the peanut butter. In cases where husbands and grandmothers were involved during counseling visits by the field team, caregivers note that their motivation to try a new practice was the support they received

from their family members. Given this, men will need to be engaged to identify ways in which they can support their wives in achieving some of the promoted practices.

Internal-level factors

Perceptions of indigenous foods: Communities hold many perceptions about indigenous foods, both positive and negative. In some communities, they are valued because they are available for all people to consume and cannot be bought with money or bartered. Some are perceived as “healthy and tasty” for children. While jiggies were mentioned as a bad snack, indigenous foods like amahewu, snot apples, and donkey berries were mentioned as examples of good snacks. Negative perceptions include indigenous foods being considered “poor people’s foods.” Caregivers shared that indigenous foods are becoming less common, because people prefer to purchase or barter processed foods from the markets instead of gathering foods like baobab and marula.

Skills to prepare foods: Findings across secondary data and several community exercises highlighted that caregivers lack the knowledge and skills to prepare indigenous foods (Amalima Loko 2022). This includes how to produce, store, process, and prepare the indigenous foods that are widely available in the districts. Fear about children choking on seeds were expressed. Children rejecting mopani worms if they were not sieved and pounded into flour was another example.

The research identified multi-faceted drivers of sub-optimal IYCF practices in Matabeleland North. Therefore, a multi-sectoral approach is needed. Linkages with the food system are needed, along with ensuring the timely use of health services to identify and treat medical issues. While not fully explored in this study, sick children in households trying recommendations had a low appetite or vomited after eating.

Discussion

It is possible for caregivers to improve complementary feeding practices using locally available foods, provided they can access the seasonally available foods; have the knowledge, skills, and time to prepare them; and the family and community support putting the behaviors into practice. Caregivers were very willing and successful in adding ASF, legumes, and fruits and vegetables to their child’s meals, and offering snacks between meals. Measuring when cooking and serving children appropriate amounts of food was feasible, though this is not common practice. Appropriate frequency of feeding throughout the day may be possible but it depends on several factors, such as food availability and caregivers’ time. Cultural beliefs around foods continue to influence those that caregivers are willing to try offering children.

Caregivers face a number of challenges in using locally available nutrient-rich foods for young child feeding. Those factors include workload burden, food availability, cost of foods, skills and knowledge to prepare foods (particularly indigenous foods), social norms around feeding certain foods, and gender norms and decision-making within households. As such, there is large variation in access to food and resources at the household level, requiring options for caregivers to select. Caregivers need support in knowing and accessing the types of nutrient-rich locally available foods, and the amounts and frequency with which to feed children by age. Because children are fed differently by age, context-appropriate recommendations are needed to increase the likelihood of adoption. Furthermore, various household members play unique roles in young child feeding, which makes it important to identify the different roles each family member can take to improve practices.

There were three primary limitations in applying and testing this approach. The first was in reaching an adequate number of caregivers with children 6–11 months of age to learn about their typical meal preparation and feeding practices, as well as interest in trying new foods. Second, in the TIPs methodology, only issues or areas of interest that arise during the household counseling and negotiation process are studied. This may mean that not every behavior that was initially intended to be studied is studied, and as such what appeared to be important areas emerging from the earlier formative work was not further studied through the household behavior trial (household members assisting with chores, and

in-laws having joint discussions about foods to feed a child, or working together to prepare food for a child). Third, the short duration of the TIPs behavioral trial resulted in caregivers only being able to try a select number of behaviors to practice, and a narrow window in which to learn from that experience.

The findings from applying and testing this approach are consistent with work carried out in other countries (Helen Keller International 2023; Burns 2020; PAHO and WHO 2013). However, field practitioners are eager to have tools and simplified approaches to developing FBRs and supportive practices to promote through their community-based programs. This stepwise systematic approach assisted Amalima Loko in reviewing existing secondary data, and gathering additional targeted primary data to identify context-specific, sub-optimal IYCF practices, potential drivers, and test out FBRs to apply to their multi-sectoral program. Other RFSA programs could apply the same approach to developing context-specific FBRs to improve complementary feeding practices.

The experience of working with the Amalima Loko program highlighted a few key points. One, that a multi-sectoral approach is needed to address young child feeding practices. Two, a participatory approach with caregivers is needed to contextualize global recommendations. Three, a menu of food options permits the household to identify what works for them, based on resources at their disposal, and roles household members can play to adopt improved practices. Four, small amounts of indigenous foods can contribute significantly to meeting the nutrient requirements of children 6–11 and 12–23 months of age. And five, while the focus of this work was on developing and testing recommendations with regard to food consumption among children 6–23 months of age, programs should continue to promote continued breastfeeding through two years of age and beyond, knowing that breast milk contributes a significant amount toward meeting energy and nutrient requirements.

Multi-Sectoral Approaches to Addressing Young Child Feeding: Improving young child feeding practices requires a complex set of actions that need to be addressed through multi-sectoral program interventions that are supported by different household and community members. At the household level, different individuals play a role in what is grown, gathered, purchased, prepared, and fed to the child. Yet households need support in being able to access and use nutrient-rich foods. In a culture where women have limited decision-making power about what food is sold or consumed, this requires engaging the male head of households who often make these decisions. When children are often left with grandmothers and older siblings in the absence of a mother engaging in livelihood activities during the day, or in the case where grandmothers make decisions on what is prepared and distributed throughout the household, this requires working with those secondary caregivers who ultimately make decisions for that child. Furthermore, religious leaders may be influential in encouraging how men make decisions around dividing up food between their families, given current cultural practices in polygamous marriages. Conducting an analysis of a variety of structural, social, and internal factors influencing young child feeding practices, and engaging the community through participatory exercises, was useful for identifying these determinants of young child feeding practices.

The Amalima Loko program has the advantage of working through several multi-sectoral platforms, namely Male Champions, Care Groups (supporting training on the GoZ Healthy Harvest approach, including food preservation practices), Community Health and Nutrition dialogues, and Farmer Groups. Each group reaches different community and household members. Based on this, the program material template (annex 2) was designed so that it could be used in a variety of program activities, and tailored to the audience for their roles in young child feeding. And, while the focus of this work was to specifically address the program behavior—*Caregivers feed CU5 (age 6–59 months) an adequate quantity (amount/meal and frequency) and variety of nutrient-rich foods for both meals and snacks*—the RFSA team should consider how other program interventions could address factors related to optimal IYCF that were not studied throughout this process (WASH, health, microfinance, agricultural production, etc.).

Participatory Approaches to Contextualizing Global Recommendations: The participatory exercises, including community FGDs, meal preparation exercise, pile-sorting exercise, and the TIPs field trial

helped to identify current feeding practices; nutrient-rich foods that are most available, accessible, and acceptable; as well as solutions that could be supported by various household and community members. The nutrient analysis further refined the list of key foods developed through these initial participatory steps by providing a set of FBRs, and a menu of food options with appropriate serving sizes that were tested through TIPs and could be scaled for use by other households. While global IYCF guidance has age-specific recommendations (6–8, 9–11, and 12–23 months of age), this learning helped identify where program recommendations would need to be adapted to the context. Given that children in Zimbabwe are fed differently by age 6–11 months and 12 months and up, we have merged some of the global feeding recommendations (6–8 and 9–11 months) as our nutrient analysis took averages of nutrient requirements for the age ranges of 6–11 and 12–23 months, using values from FAO’s *Human Vitamin and Mineral Requirements* (2001). In addition, the diversity of feeding practices has been tailored based on the types of foods that are available, accessible, and culturally acceptable to caregivers. Simplifying recommended practices will reduce the amount of information being delivered to various caregivers, and will ensure recommended practices are feasible and context-specific. All this work aligns with the GoZ general IYCF recommendations, yet are contextualized for the Amalima Loko program areas.

A collaborative relationship was established between USAID Advancing Nutrition in offering global tools and experience, and the Amalima Loko team that have rich, context-specific experience and close relationships with project communities. Amalima Loko shared that this experience helped them engage directly with their program beneficiaries, and generate more context-specific learning following their refinement year studies. Studies such as the Modified NCA, while useful, collected data at the district level and did not test solutions within the community. The step-by-step approach to developing FBRs was useful for utilizing existing evidence and identifying where further study was warranted.

A Menu of Food Options: Initially, the Amalima Loko team aimed to create recipes using locally available foods for their new program areas, to be delivered through the Care Groups and Farmer Groups. However, one notable learning from this work was that being too prescriptive with program recommendations, and telling caregivers exactly what food to prepare for young children, may not be useful given the challenges with food availability. Rather, offering options in the form of a menu to a caregiver may be more useful, given the variation at the household level in terms of food availability, accessibility, affordability, and cultural practices. This is consistent with findings of similar work on FBRs for young child feeding in other countries (Helen Keller International 2023). Caregivers have shared that recipes are too prescriptive, and do not allow for choices based on livelihood, seasonality, and household dynamics. Tremendous variation exists at the household level in the Amalima Loko program areas. Different foods are available by location, by time of the year, and are selected based on household support, livelihoods, and cultural practices, including religious reasons. Therefore, providing a list of foods by food group that are rich sources of nutrients, and simple instructions for adding an amount that is appropriate by age and by food group to the typical meal, not only allows for variation in terms of availability, accessibility, and preference, but will likely result in small-improved practices.

Indigenous Foods and Fortified Foods/Supplements: Food insecurity is a real concern in Matabeleland North. However, through previous experience of the Amalima program, studies and community engagement highlighted that wild edible plants, insects, and animals—which are often overlooked or neglected—can play a role in improving the diets of children. The Matabeleland North environment has a wide array of wild fruits, vegetables, and insects that are rich sources of nutrients (particularly vitamin A, iron, zinc, and calcium). The role of wild edible plants has been shown to contribute towards meeting nutrient and health requirements in many populations around the world (Duguma 2020). The learning from this work has helped to identify some of those indigenous foods that, over time, have lost value or are forgotten, yet through joint efforts of the nutrition and agriculture activities can be further promoted through improved food processing and engagement of key decision-makers. Where indigenous foods are not available or do not contribute significantly to meeting nutrient requirements, fortified foods and supplements could play a role in young children’s diets. Consumption of fortified food

and micronutrient supplements did not come up in the field work. However, noting the government's national mandate to fortify staple foods, it would be useful to continue to look for opportunities to incorporate these in program recommendations. They would include the national fortified staple foods, lipid-based nutrient supplements, micronutrient powders, micronutrient products with added protein/energy/essential fatty acids, and any locally produced fortified blended foods.

Continued breastfeeding: While the bulk of this work focused on developing and testing recommendations for food consumption among children 6–23 months of age, the Amalima Loko project should continue to promote continued breastfeeding through two years of age and beyond. Breast milk contributes significantly toward meeting energy and nutrient requirements (vitamin A, protein, and essential fats) well into a child's second year of life, particularly in a food insecure context. While national statistics indicate that 76 percent of children 0–23 months are still breastfeeding, only 32 percent of children are exclusively breastfed, and the median duration of any breastfeeding is nine months (GoZ Food and Nutrition Council 2022).

Conclusion

From September 2022 to March 2023, USAID Advancing Nutrition provided technical assistance to the Amalima Loko program in applying an approach for developing FBRs using locally available foods to improve young child feeding practices. The Amalima Loko program is in a unique position, with a multi-sectoral food and nutrition security program (agriculture, health, nutrition, gender, etc.) and long-standing relationships with communities to address the multi-causal determinants of young child feeding. By intervening through various program channels and addressing the multi-causal drivers of sub-optimal young child feeding, the Amalima Loko program directly aligns with and is contributing to carrying out the GoZ's Food and Nutrition Security Advocacy and Communication Strategy, the National Nutrition Strategy (GoZ, MoHCC 2014), national IYCF policy, as well as the Food and Nutrition Security Policy. Any learnings should be shared with the District Food and Nutrition Management Teams, and integrated within the work carried out by village health workers, as they have had success in the past in significantly reducing the prevalence of underweight and wasting in CU5 (GoZ, MoHCC 2014).

While using FBRs in IYCF programming is not new, a field-friendly approach to assessing contexts for nutrient-rich foods and current feeding practices is needed, coupled with developing and testing of FBRs to support improved young child feeding practices. Limitations to other tools include that they often require intensive in-person training which is not feasible for field-based staff; resources are primarily in English; methodologies are time-intensive, expensive, and not practical for community-based programs; and often there isn't direct support from the tool designers to support the field team with adapting and using it in their country contexts.

Last, it will be useful for the Amalima Loko team to consider any program adjustments after the updated WHO Complementary Feeding guidance is released, anticipated later in 2023. There will be renewed emphasis on consumption of more protein-rich foods. The original guidance on the frequency and amount of food will not change. This may not change the GoZ IYCF strategy, but it will be important to align with global guidance and adjust programming approaches, as needed.

Recommendations

Recommendations for the Amalima Loko program focus on addressing both barriers to improving the priority behavior, as well as facilitators to promote throughout the various program activities. These recommendations align with the program’s sustainability strategy, and contribute towards achieving outcomes in the program’s theory of change. More specifically—

- Increased consumption of a diverse, nutritious diet (esp. indigenous foods) by WRA & CU5
- Increased purchase of nutrient-dense foods (e.g., ASF, fruits and vegetables)
- Increased meal frequency for WRA and CU5
- Increased food preservation to mitigate shortages and ensure availability year-round
- Women and adolescent girls actively participate in health and nutrition decision-making
- Women and men share the burden of work on health and nutrition tasks in the household.

Multi-sectoral approaches: The drivers of sub-optimal IYCF practices in Matabeleland North are multifaceted. While the focus of this work was to specifically address the program priority behavior—*caregivers feed CU5 (age 6–59 months) an adequate quantity (amount/meal and frequency) and variety of nutrient-rich foods for both meals and snacks*— the RFSA team should consider how other program interventions could address factors related to optimal IYCF that were not studied during this process (WASH, health, microfinance, agricultural production, etc.). Linkages with health services will continue to be critical for ensuring illnesses among children are identified early and treated. Linkages with agricultural services are important for ensuring households have the resources and capacity to produce food at the household level, as well as preserve foods to extend through the lean season. Efforts should continue to align crops being grown in agriculture activities with post-harvest food processing activities, and those being promoted in health and nutrition activities. Conversely, the learning about IYCF practices—whether barriers, such as cultural beliefs around not eating certain foods; or enablers, such as positive perceptions about the growth and health certain foods can give a child—are important to incorporate into the agriculture program activities, as those same households are likely to participate in both program activities. Gender-focused efforts such as the Male Champions approach will continue to be useful for addressing household decision-making, and roles and responsibilities with regard to young child feeding.

The following are the various program platforms that are existing, and have been modified in order to integrate support to households in adopting the FBRs and supportive behaviors. Program platforms through which to address determinants include Care Groups, Lead Farmer Groups, Community Health & Nutrition dialogues, and Male Champions.

Table 18. Program Platforms

Program Platform	Description of Platform	How Food-Based Recommendations and Supportive Behaviors Will Be Promoted
Care Groups	<ul style="list-style-type: none"> • Aiming to support 600 Care Group Promoters and 3,600 	<ul style="list-style-type: none"> • Through monthly group sessions, Lead Mothers use the draft program materials

	<p>Lead Mothers who potentially reach 36,000 PLW and mothers and caregivers of CU5.</p> <ul style="list-style-type: none"> ● Lead Mothers hold monthly meetings with PLWs and mothers and caregivers of CU5. ● Lead Mothers also conduct home visits to care group member households to support pregnant and lactating women, or caregivers, in adopting improved practices. 	<p>to facilitate participatory exercises in preparing new combinations of foods (enriching child’s porridge or sadza with 2 additional foods from 2 food groups), measuring food when preparing and serving the child.</p> <ul style="list-style-type: none"> ● During household visits, Lead Mothers observe current feeding practices and make necessary recommendations. They schedule when other household members are available (grandmothers, husbands, aunts/uncles, older siblings) to facilitate a conversation, and negotiate the role that they can play with regard to accessing foods, feeding practices, or household chores.
<p>Lead Farmer Groups</p>	<ul style="list-style-type: none"> ● Aiming to train 2,581 Lead Farmers. ● Each Lead Farmer will reach up to 10 farmers with key messages and support, to promote production for home consumption and selling of excess crops and horticultural products. ● Aiming to train Lead Farmers on the GOZ’s Healthy Harvest package, which focuses on preservation of foods. 	<ul style="list-style-type: none"> ● During trainings, the draft program materials will be used to facilitate discussions on how foods rich in iron and vitamin A-rich foods on the menu, already being produced through activities, can help achieve improved young child feeding practices. ● Discussions with producers of community gardens on opportunities to sell surplus food, to purchase foods from the menu available at the market. ● During Healthy Harvest trainings, farmers can practice preservation techniques of the foods on the menu to extend access throughout the year.

<p>Community Health & Nutrition Dialogues Sessions</p>	<ul style="list-style-type: none"> ● Lead Mothers facilitate sessions for Care Group participants, Community Health Club participants, influential family members (fathers/husbands, grandmothers, mothers-in-law etc.), and traditional and religious leaders in the community. Sessions are held bi-monthly. 	<ul style="list-style-type: none"> ● Dialogues facilitated by Care Group Promoters and Male Champions, offer a continued opportunity to challenge deeply rooted myths, misconceptions, taboos, and beliefs around maternal and child nutrition. Discussions can focus on how various household and community members can support improving young child feeding of the foods on the menu of foods, by growing foods in the community through gardens and fields; helping with household chores, such as water and firewood collection; purchasing foods or trading foods at the market; preserving foods collected in the wild; and assisting with feeding children when the mother is engaged in livelihood activities.
<p>Male Champions</p>	<ul style="list-style-type: none"> ● Aiming to work with up to 800 Male Champions. ● Each quarter, the Male Champion receives training from Amalima Loko and then cascades them monthly to his group/male peers. ● Male Champions recruit at least 10 men from the village and form a football team as a way of mobilizing them. ● Hold cooking classes for men (ensuring that men see it as 	<ul style="list-style-type: none"> ● During sessions, men continue to discuss the role they could play in helping secure foods on the menu for their children to consume, by purchasing, trading, and gathering foods. ● They identify ways to help with household chores. ● Men are asked to make a commitment to the group to try doing the recommended behaviors.

	<p>supportive, rather than to instruct women).</p>	<ul style="list-style-type: none"> ● During half time of football matches they engage peers, and so could discuss optimal strategies they have to ensure their children receive the foods on the menu. ● During Male Champion cooking sessions, men practice preparing foods from the menu and ways to preserve them, in support of women.
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Engaging household and community members: Given the time burden of women’s workload, it is critical that household members are engaged with young child feeding or helping with household chores. Those roles include food gathering; purchasing, preparation, processing, and feeding food; and gathering water and firewood. The Amalima Loko team will add a component to their current Care Group model: when the Leader Mother conducts household visits to the Neighbor Women, she will invite the husband and grandmother to participate in that counseling session and negotiate roles that each of them can take in adopting the recommended IYCF practices. A specific practice will be how they can achieve adding two foods from two food groups to the child’s meal to align with the 4-star diet concept. In addition, the learning from this exercise will be incorporated into the Male Champions program modules – given the TIPs trial result that households that had a husband’s support were willing to try behaviors, and fathers were willing to purchase nutrient-rich foods to add to their child’s meal. Already underway— through the Amalima Loko’s program Health and Nutrition dialogue sessions—Care Group members, community leaders, men, grandmothers, and aunts convene to discuss the different roles that household members can play. One topic that will be added is on how the community can work together to access meat, and practice drying and pounding it into powder. A draft program material template is available in annex 2, which includes suggested roles that household members can play regarding food gathering, purchasing, preparation, processing, feeding, and household chores. These would be practices to support households to adopt through the various program platforms.

Availability and accessibility of food: To improve household availability and access to nutrient-rich foods, Lead Farmers, Village Health Workers and Lead Mothers will continue to support households in accessing the tools and capacity to produce nutrient-rich foods (whether grown or raised), and gather, process, and preserve foods (mopane worms, moringa, tamarind, wild fruits and vegetables). Households and community gardens, water sources to catch fish, and animal husbandry practices, were mentioned as sources of food. It is outlined in the project’s sustainability strategy that Lead Farmers will train farmer groups members on the Healthy Harvest training, which includes producing nutrient-rich vegetables and crops (leafy green vegetables, carrots, butternut, sugar beans, high-iron beans variety, pro-Vitamin A maize, cowpeas, tomatoes), as well as the preservation practices to extend access through lean seasons when the harvest is not yet available. Furthermore, while limited market access was mentioned in some locations, identifying linkages with market-related projects to improve household access to fortified foods could be useful. Despite mandatory food fortification of cooking oil, sugar, and maize meal since July 2017, households’ knowledge and awareness on food fortification remains low. As outlined in the sustainability strategy, Lead Mothers will connect interested Care Group

members with a nearby VSLA (via the VSLA Facilitator), to identify opportunities to generate income to purchase foods within markets. VSLA sessions will cover budgeting to purchase meat, milk, eggs, fish, and mopane worms as opportunities to enrich children's meals. Engaging in these groups has shown to be of interest among Care Group members. District-level MoHCC and health facility-based nurses will provide training and mentorship to the VHWs, who in turn mentor the Lead Mothers.

Dietary diversity: During household counseling visits or different peer group sessions, the menu of suggested foods in amounts appropriate for the child's age will be used to guide the caregiver in choosing selected foods based on what they have available in their household. It includes recommendations for offering a diverse diet at each meal and throughout the day. This will also help convey how a small amount of the suggested foods can contribute significantly towards meeting nutrient requirements for a child 6–11 and 12–23 months of age. In addition, we learned that indigenous foods are becoming less common, due to a lack of interest or knowledge of how to prepare them. Improving knowledge and skills of how to make some of the indigenous foods could be addressed through the Healthy Harvest food preservation training, to be rolled out through the Care Groups. This also applies to ensuring the foods offered to the children are easy to prepare and consume (finely grinding foods into powder form [mopani worms, moringa powder, dried goat meat or beef]). Last, noting the role that breast milk can contribute towards meeting the nutrient requirements, support to caregivers should continue to identify ways to continue to breastfeed the child throughout the day and night, on demand.

Meal frequency: While a number of factors influence meal frequency, workload constraints are already being addressed through the program's Male Champions platforms as men discuss ways in which they can assist with household chores; or through Health and Nutrition Community Dialogues as different household and community members can commit to a role for them to play in food access (e.g., grinding beans into flour). In addition, the Care Groups are a platform through which members practice time-efficient techniques to preserving food for meals or snacks (i.e., drying meat and vegetables). During household counseling visits, the menu of suggested foods includes recommendations for offering the appropriate meal frequency throughout the day. Addressing the practice of offering junk foods as snacks, particularly as is commonly done by grandmothers, or promoting the practice of giving eggs, will be addressed through the Health and Nutrition Community Dialogues and during household counseling visits.

Amount of food offered: During household counseling visits, the menu of suggested foods includes recommendations for offering the appropriate amount at each meal, and throughout the course of the day. Caregivers will be supported by identifying locally available measuring units, and marking them to know what amount should be used when preparing a pot of food, and then when filling a child's bowl or plate and offering it to them. Creating markings on common plates/bowls available in the market will help caregivers to understand the approximate amount that the child needs by age group. However, most children are offered food from their own bowl and plate, so this does not seem to be an area that requires improvements.

Norms around food for children: Given the success of some caregivers in feeding eggs, meat, and peanut butter to their children during the household trials—the norms that restrict other households from feeding specific foods—a specific module will be added to Health and Nutrition Community Dialogues with religious leaders and the other people who uphold the norms, such as elder women in those households. The caregivers and their family members who no longer follow the norms can share their experiences, showing proof of change to community members. Capitalizing on the positive experience with shifting norms around foods for young children will also be incorporated into existing program platform materials, including household visits by Care Group Leaders.

Applying the learning: Using the recommendations that emerged from the process of developing FBRs for children 6–23 months outlined above, the team prepared program materials (see annex 2) that will be used through the various program platforms. The Amalima Loko team has already adapted these

materials for use in each of their relevant program platforms. The materials include a list of foods by food group, including amounts to offer and frequency of feeding, by age range 6–11 and 12–23 months. In addition, there are suggested roles that others in the household can play regarding food gathering, purchasing, preparation, feeding, and other household chores—key practices to support households to adopt.

Using the training guide: Annex 3 includes a brief training guide for the Amalima Loko team to use in preparing leaders of Care Groups and Male Champions—among other community-based groups and platforms—to effectively conduct peer group sessions that promote consumption of locally available foods among children 6–23 months of age. The training activities are interactive and participatory, to enable the groups to feel comfortable and confident to select from the menu of options for FBRs, and to share their learning with others in their homes and communities. A key element of these training activities is to encourage sharing between the trainer and participants. Sharing of personal experiences helps build the connection between people, and improves the experience and recall of the sessions. The participants will take this positive experience into their own groups to facilitate active engagement of all members. The program team can refine the training specifics to fit the platforms when training.

Approach for use in other RFSA: RFSA programs across different contexts could use this approach to develop FBRs early in the program life cycle (refinement year), or during the life of the project when adapting or developing materials for new geographic areas. After they create a menu of foods and supportive behaviors, those materials can be adapted for new geographic areas by simply pre-testing these, or carrying out select steps of the process to gather additional information as needed. This process can be rapid and useful for use throughout the life of the project as new program activities are established and scaled up.

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Annex I. Secondary Data Sources Reviewed in Step I

The following documents were reviewed for data on IYCF practices in Zimbabwe, and context-specific learning and recommendations that would inform where further data need to be collected.

Government of Zimbabwe (GoZ) policies/strategies/surveys:

- National Food and Nutrition Council Strategy 2021–2025
- Zimbabwe National Food Fortification Strategy 2014–2018
- Zimbabwe Vulnerability Assessment 2022 Committee Rural Livelihoods Assessment Report
- A Community-Based Multi-Sectoral Approach to Address Food and Nutrition Insecurity in Selected Vulnerable Districts of Zimbabwe with a Special Focus on System Strengthening
- Zimbabwe 2018 National Nutrition Survey
- National Micronutrient Survey 2012
- Zimbabwe 2010 National Nutrition Survey
- Food and Nutrition Security Advocacy and Communications Strategy 2016
- National Nutrition Strategy 2014–2018
- Ministry of Health and Child Care, Infant and Young Child Feeding Policy 2013
- Lupane District Food and Nutrition Security Profile 2022
- Binga District Food and Nutrition Security Profile 2022.

Amalima Loko program documents:

- Social and Behavior Change Strategy
- IYCF-related Behavior Profile
- Amalima Loko Peer Group Literature
- Baseline Evaluation of the Amalima Loko RFSa in Zimbabwe.

Amalima Loko refinement year studies:

- Health Behaviors Study
- NCA
- NRM Study Report

- Community Visioning Study
- Gender Youth and Social Dynamics Report
- Agriculture Behaviors Motivations and Barriers Study Report.

Other NGO and stakeholder documents related to the priority behavior:

- Zimbabwe Demographic and Health Survey 2015
- Zimbabwe Multiple Indicator Cluster Survey 2019
- Zimbabwe Demographic and Health Survey 2010–2011
- FEWSNet Zimbabwe Food Security Outlook, June 2022–January 2023
- World Food Programme, Zimbabwe Country Strategic Plan (2022–2026) ENSURE program and Takunda program resources
- Bio Innovation Zimbabwe.

Annex 2. Program Material Template

[Rename as needed: Program Booklet for Promoting Complementary Feeding Practices]



Acknowledgements

[Insert here]

Photo caption and credit: [Insert here]

Month Year

This document is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of JSI Research & Training Institute, Inc. (JSI), and do not necessarily reflect the views of USAID or the United States government.

[Insert title of recipe book]

2

[INSERT TITLE OF PROGRAM MATERIAL]

Age 6–12 months 12+ months

<p>[Insert Food Group Name]</p>  <p>[Insert list of locally available foods in this food group]</p> <ul style="list-style-type: none">● Food item● Food item● Food item 	<p>[Insert Food Group Name]</p>  <p>[Insert list of locally available foods in this food group]</p> <ul style="list-style-type: none">● Food item● Food item● Food item 
<p>[Insert Food Group Name]</p>  <p>[Insert list of locally available foods in this food group]</p> <ul style="list-style-type: none">● Food item● Food item● Food item 	<p>[Insert Food Group Name]</p>  <p>[Insert list of locally available foods in this food group]</p> <ul style="list-style-type: none">● Food item● Food item● Food item 

STEPS/INSTRUCTIONS

1. [Insert instructions for preparing the food]
2. [Insert instructions for preparing the food]
3. [Insert instructions for preparing the food]

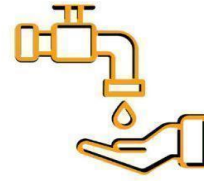
KEY MESSAGES

1. [Insert recommendation about amount to offer child]
2. [Insert recommendation about frequency feeding meals]

[Insert title of recipe book]

3

3. [Insert recommendation on diversity of foods in a meal/day]
4. [Insert recommendation regarding offering a snack(s) between meals]
5. [Insert recommendation about continued breastfeeding]
6. [Insert recommendation on offering a child their own bowl/plate]
7. [Insert recommendation on support from other household members]



[Insert image of local measurement units]

1 tablespoon = 15g

1 teaspoon = 5g

1 cup = 250g

[Insert title of recipe book]

4

EXAMPLE RECOMMENDATIONS FOR CHILDREN 6-11 MONTHS OF AGE

<p style="text-align: center;">Animal Source Foods</p> <p>Mopani worm powder - 15 grams Goat's or cow's milk - 50 grams (¼ cup) Egg - 1 egg Kapenta - 15 grams Chicken - 15 grams</p>	<p style="text-align: center;">Staples</p> <p>Maize - 50 grams Millet - 50 grams Sorghum - 50 grams Sweet potato - 50 grams</p>
<p style="text-align: center;">Legumes</p> <p>Cowpea - 10 grams Groundnuts - 10 grams Pumpkin seeds - 5 grams</p>	<p style="text-align: center;">Fruits and Vegetables</p> <p>Monkey orange - 10 grams Tamarind - 10 grams Moringa powder - 5 grams Pumpkin leaves - 10 grams Watermelon (yellow) - 10 grams Baobab fruit - 15 grams Pumpkin - 15 grams</p>
<p style="text-align: center;">Snacks</p> <ul style="list-style-type: none"> ● Cowpeas ● Groundnuts ● Pumpkin ● Sweet potatoes ● Amahewu ● Snot apples (xakuxaku) ● Donkey berries (Umbhunzu) ● Pawpaw ● Mangoes ● Watermelon ● Kale (umbhida) ● Gourds (amakhomane) ● Orange monkey (umkhemeswane) 	

[Insert title of recipe book]

5

STEPS/INSTRUCTIONS

1. Prepare porridge or sadza, based on a staple available in your household.
2. For child 6–11 months, ladle 2–3 teaspoons of food (and transition to about ½ cup) of porridge or sadza to child’s bowl, per meal.
3. Add 1-2 animal source foods, fruits/vegetables, or legumes to the child’s bowl of porridge or sadza at each meal.
4. Throughout the day, offer foods from each of the 4 food groups.
5. Feed your child a meal 3 times a day.
6. Offer 1 to 2 snacks in-between meals.

KEY MESSAGES

1. Continue breastfeeding on demand, day and night.
2. [Insert recommendation to engage grandmother with feeding a child].
3. [Insert recommendation to husband to purchase certain food].
4. [Insert recommendation to household member to help with a chore].



Example 1: Millet (40g) + mopane worms (10g) + cow’s milk (20g) + sugar (5g) provides 64% daily value (DV) of calcium, 83% DV iron, and 43% DV zinc.

Example 2: Maize (50g) + moringa leaves (5g) + kapenta (15g) + sugar (5g) provides 211% DV of calcium, 28% of iron, and 25% of vitamin A.

[Insert image of local measurement units: cups, spoons, handfuls]

1 tablespoon = 15g

1 teaspoon = 5g

1 cup = 250g

[Insert title of recipe book]

6

EXAMPLE RECOMMENDATIONS FOR CHILDREN 12-23 MONTHS OF AGE

<p style="text-align: center;">Animal Source Foods</p> <p>Mopani worm powder - 30 grams Goat's or cow's milk - 75 grams (1/3 cup) Egg - 1 egg Kapenta - 30 grams Chicken - 30 grams</p>	<p style="text-align: center;">Staples</p> <p>Maize - 80 grams Millet - 80 grams Sorghum - 80 grams Sweet potato - 80 grams</p>
<p style="text-align: center;">Legumes</p> <p>Cowpea - 20 grams Groundnuts - 20 grams Pumpkin seeds - 10 grams</p>	<p style="text-align: center;">Fruits and Vegetables</p> <p>Monkey orange - 20 grams Tamarind - 20 grams Moringa powder - 5 grams Pumpkin leaves - 20 grams Watermelon (yellow) - 20 grams Baobab fruit - 20 grams Pumpkin - 30 grams</p>
<p style="text-align: center;">Snacks</p> <ul style="list-style-type: none"> ● Cowpeas ● Groundnuts ● Pumpkin ● Sweet potatoes ● Amahewu ● Snot apples (xakuxaku) ● Donkey berries (Umbhunzu) ● Pawpaw ● Mangoes ● Watermelon ● Kale (umbhida) ● Gourds (amakhomane) ● Orange monkey (umkhemeswane) 	

[Insert title of recipe book]

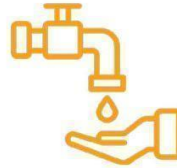
7

STEPS/INSTRUCTIONS

1. Prepare porridge or sadza, based on a staple available in your household.
2. For child 12–23 months, ladle $\frac{3}{4}$ cup to 1 cup to child's bowl, per meal.
3. Add 1- 2 animal source foods, fruits/vegetables, or legumes to the child's bowl of porridge or sadza at each meal.
4. Throughout the day, offer foods from each of the 4 food groups.
5. Feed your child a meal 3 to 4 times a day.
6. Offer 1 or 2 snacks in-between meals.

KEY MESSAGES

1. Continue breastfeeding on demand, day and night.
2. [Insert recommendation to engage grandmother with feeding a child].
3. [Insert recommendation to husband to purchase certain food].
4. [Insert recommendation to household member to help with a chore].



Example 1: Maize (80g) + moringa leaves (20g) + kapenta (30g) + sugar (5g). One meal provides 322% DV of calcium, 95% DV of iron, 33% DV of zinc, and 177% DV of vitamin A.

Example 2: Millet (75g) + mopane worms (25g) + cow's milk (50g) + sugar (5g). One meal provides 81% DV of calcium, 311% DV of iron, 116% DV of zinc, and 9% DV of vitamin A.

[Insert image of local measurement units- cups, spoons, handfuls]

1 tablespoon = 15g

1 teaspoon = 5g

1 cup = 250g

[Insert title of recipe book]

8

Annex 3. Draft Training Guide for Group Leaders

This brief training guide prepares leaders of groups, such as Care Groups and Male Champions, to effectively conduct group sessions that will improve children’s diets through locally available nutritious foods.

Purpose of the Training

- Support groups to use the program materials on young children’s diets with locally available food.
- Demonstrate how group leaders can conduct effective group sessions (discuss, practice, reflect, plan for action).
- Give and receive feedback on the effectiveness of activities.

Participants

Care Group Lead Mothers and Promoters; Male Champion leaders; other group leaders as relevant. Each training may include approximately 20 participants.

Length of Training

This training is one day, and prepares group leaders to facilitate interactive sessions with their existing groups on locally available nutritious foods to improve young children’s diets.

Learning Outcomes

- Group leaders will demonstrate an effective approach for conducting group sessions on locally available food for young children.

- Group leaders will be able to identify the specific needs of group members and articulate strategies for adapting content to meet those needs.
- Group leaders will have strategies for addressing barriers that may arise for group members to take actions they prioritize.

Training Agenda

Welcome and Introductions [30 min]

- Facilitators and group leaders introduce themselves:
 - Share: your name, role, how long you have been a group leader, and one thing that a child does to make you smile or laugh.
- Review the purpose and objectives for the training.
- Describe the types of sessions that group leaders will conduct.
- Discussion: Think of a time when you learned something effectively. What was the situation? How did the person teach you? What made it easy to learn?
- Discuss the importance of tailoring to the learners, time of year, and the context. The best learning takes place when facilitators make the content relevant to the learner's actual context and challenges.

Facilitation Skills for Conducting Effective Group Sessions [90 min]

- Be open yourself.
- As group members discuss and share, be sure to share your personal answers, too. This is an effective way to build trust and connection with your group members.
- Explain clearly.
- Break down the session into small, clear steps—experts often skip steps or make incorrect assumptions about what participants know.
- Share the rationale for each step—people often learn better when they understand the “why.”
- Do not just give information or tell group members facts. Set up the activity and ask participants to discuss together how to solve problems. This is the role of a facilitator. Peer sharing and hands-on practice is the most effective way for the participants to learn.
- Remember to ask questions and listen more than you talk. Your groups want you to really listen and appreciate their ideas and contributions.
- Prepare the content in advance.
- This training includes multiple activities for a 1.5 to 2-hour session. Select an activity based on the interest of your groups. Try to use all the activities over time, as your group meets.

Introduction of the Program Materials. [60 min]

- Ask participants to read the briefs. Ask questions and allow participants to answer.

Conduct Teach-Back Session [180 min]

- Divide participants into two groups.
- Ask each small group to select and practice one activity (below).
- Ask each small group to facilitate their activity for the larger group.
- Peers observe and give feedback.
- Continue the process with the second group.

Plan How to Use in Groups [60 min]

- Each group leader can prepare an action plan to use with their groups and to share in plenary.

GROUP ACTIVITIES TO IMPROVE YOUNG CHILDREN'S DIETS

ACTIVITY 1. SEEING IS BELIEVING

Preparation: [Using the program material] Select one or two recipes to prepare. Ask participants to bring cooking materials and foods and a bowl to the session. Bring measurement tools.

PART 1: DISCUSSING OUR CHILDREN

Facilitate a discussion among the group, including yourself, by asking questions such as—

- What is special about children in the first two years of life?
- What is the role of nutritious foods in children from six months growing well and staying healthy?
- What are some nutritious foods available in this community for most families?

PART 2: PRACTICING SKILLS

Explain that today you will prepare recipes using very nutritious food that is available here in our community. Ask participants to decide who will prepare the food, who will cook, etc.

Give the instructions for the recipe: In each bowl, add sadza or millet. Also add one to two of the other foods selected (from the program material): ASFs, legumes, and fruits or vegetables. Follow the amounts needed for the age of the child.

Taste the food. Thank the cooks!

If children are present, **feed** each child, using the amounts in the bowl needed for the age of the child:

- Encourage caregivers to talk with the child while feeding.
- Observe how the child likes the food.
- (Note, if a child has low appetite, do not force the child to eat. When possible, try to encourage small tastes—every bite counts).

PART 3: REFLECTING TOGETHER

- How did the food taste?
- Are you surprised that all these foods are here in the community?
- If children are present, did you observe how much the child can eat from their own bowl?
- What can family members do so that children eat like this from the age of six months, all year?
- What can fathers do to help their children eat like this from the age of six months, all year?

PART 4: MAKING PLANS

- What specific actions will you try with your children, or to help families with children 6–23 months to try each day?
- What challenges could families face in preparing food like this each day?
- How can we support the families to overcome the challenges and try every day?
- How can we encourage each other, as champions for nutrition, to follow these plans?

ACTIVITY 2. REACHING FOR THE STARS

PART 1: DISCUSSING OUR CHILDREN

Facilitate a discussion among the group, including yourself, by asking questions such as—

- What is special about the first two years of life, especially from 6–23 months?
- How do you as a parent or grandparent feel when the child eats different types of foods each day? Do you notice differences when this happens?
- What nutritious local foods are available in this community for most families?

PART 2: PRACTICING SKILLS

Explain that today you will discuss healthy foods for children to eat each day, and that are available locally. Young children until the age of two have special needs for growth and development. But their

stomachs are very small so they cannot eat much at each time. (Show your hand as a fist.) They need a mix of different foods each day to get the nutrition necessary to grow well and stay healthy.

Divide participants into small groups of three to five people.

1. **Ask** each group to make a menu for one day (using the foods in the program material) for a child 6–11 months. Each food (from the program material) will have one star. Be sure to select one–two foods from each of the four types that are realistic to feed the child *this season*. Count the stars in each group’s menu.
2. **Congratulate** the group.
3. **Ask** each group to make a menu for one day (using the foods in the program material) for a child 12–23 months. Select one–two foods from each type that are realistic to feed the child this season. Count the stars in each menu.
4. **Congratulate** the group.
5. (As time permits, practice preparing one of the recipes in the program material.)

PART 3: REFLECTING TOGETHER

- How would you feel if you could identify so many good foods for young children?
- What should others in your community know about feeding children 6–23 months?

PART 4: MAKING PLANS

- What specific actions will you try with your children, or to help families with children 6–23 months to try each day?
- What challenges could families face in giving young children healthy snacks twice a day?
- How can we support the families to overcome the challenges and try every day?
- How can we encourage each other, as champions for nutrition, to follow these plans?

ACTIVITY 3. GIFTS FOR OUR CHILDREN

PART 1: DISCUSSING OUR CHILDREN

Facilitate a discussion among the group, including yourself, by asking questions such as—

- What type of parent do you want to be known as? What do you want your child to say about you as a parent when they are grown?
- Are children gifts to the family, or do we give gifts to children as parents and grandparents?
- What colors of food do young children like?
- What nutritious local foods are available in this community for most families?

PART 2: PRACTICING SKILLS

Explain that today you will discuss healthy foods for children to eat between meals: snacks. Young children until the age of two have special needs for growth and development. But their stomachs are very small, and they cannot eat a lot at each time. Healthy snacks help children get nutrition that they need to grow well and stay healthy. Healthy snacks are a gift to show your love to the child and to please the child. It is also a way to give children an opportunity to show their developing motor skills by self-feeding snacks. You might be surprised to learn how many locally available, nutritious snacks can be fed to young children!

Divide participants into small groups of three–five people.

1. **Ask** each group to list all the locally available foods that families could give to children 6–11 months, and for children 12–23 months. Then ask each group to note which are available at different times of the year.
2. **Compare** lists and seasonal availability between the groups. Add foods not mentioned from the program material.
3. Next, **ask** each group to consider how each family member can help prepare and feed children a healthy snack. One group could select grandmothers, one could select fathers, and one could select older siblings, for example. Or the groups could discuss all family members.
4. **Congratulate** all groups.

PART 3: REFLECTING TOGETHER

- How would you feel now about giving a child a healthy snack?
- What should others in your community know about healthy snacks for children 6–23 months?
- Is it surprising to see how many healthy snacks are locally available for children?

PART 4: MAKING PLANS

- What specific actions will you try with your children, or to help families with children 6–23 months to try each day?
- What challenges could families face in giving young children healthy snacks twice a day?
- How can we support the families to overcome the challenges and try every day?
- How can we encourage each other, as champions for nutrition, to follow these plans?

ACTIVITY 4. CHAMPIONS OF CHILDREN'S DIETS

PART 1: DISCUSSING OUR CHILDREN

Begin by facilitating a discussion among group members, and yourself, by asking—

- What would you like families to know about feeding children starting at six months?

PART 2: PRACTICING SKILLS

Divide participants into small groups of three–five people.

Give each small group a scenario to practice. Ask each group to prepare in 30 minutes.

1. **Home visit** to a family of a child 16 months of age. During the home visit, you ask about what the child usually eats. The family explains that the child eats what others eat. You learn that the child eats from the same dish as others.

*How could you help this family (the mother and others in the household) feed the child from their own bowl?
How would you help this family add healthy foods to the child's meal?*

2. **Home visit** to a family of a child eight months of age. During the home visit, you ask about what the child usually eats. The family explains that the child eats porridge. If there is other food available, they might add that. The family says the child has a low appetite.

How could you help this family (the mother and others in the household) feel confident to find other nutritious foods from the other three types and feed the child with patience?

3. **Meeting a friend** who has a child 11 months of age. You see that the child often eats packaged sweets and then eats very little of the meal.

How could you encourage this family (the mother and family members) to feed the child healthy snacks?

4. **Seeing an opportunity** when you hear that a Village Savings and Loan Association group wants an income-generating activity. You could see the potential in having local groups make very well-dried and pounded mopani worms or moringa, for example.

How could you encourage a group, or a market vendor, to try making nutritious foods for young children that could be available all year?

5. **Invite** each small group to share their role play with the full group.

6. **Congratulate** all participants for showing they can be champions of children's diets!

PART 3: REFLECTING TOGETHER

- How did you feel seeing your group members be champions for children?
- What techniques did you see in the role plays that were helpful to support a positive change?
- What other issues on children's diets could you share with our community?

PART 4: MAKING PLANS

- What specific actions will you try to help families improve children's diets?
- How can we encourage each other, as champions for nutrition, to follow these plans?

ACTIVITY 5. ROLE MODELS IN THE COMMUNITY

PART 1: DISCUSSING OUR CHILDREN

Begin by facilitating a discussion among group members, and yourself, by asking questions such as—

- How many children in our community are under two years of age?
- What nutritious local foods are available in this community for these children?

PART 2: PRACTICING SKILLS

Explain that today you will be role models for the community to improve the diets of young children by preparing a drama, song, or other activity to share.

Ask the group to decide if they will prepare a drama, song, or event for the community. The full group may prefer to prepare together, or small groups could prepare different activities.

Request that they include key points, in addition to others, to convey in a creative way:

- Nutritious foods for children from six months are available in the community.
- It is good for children to be fed four types of food a day from six months.
- In a separate bowl, add these nutritious foods to the child's meal.
- Track how much of the foods children eat by using a separate bowl, even for children over one year.
- Offer healthy snacks twice a day.
- Good nutrition saves worry and costs on health care.

Give the group(s) time to prepare.

Ask the group(s) to practice their drama, song, or event.

Congratulate all performers!

PART 3: REFLECTING TOGETHER

- What would you like community members to learn from seeing the drama?
- What would you like parents to feel after seeing the drama?

- How can we gather all family members with a child 6–23 months, in that special time of life, together for the drama?

PART 4: MAKING PLANS

- What specific actions will you try with your children, or to help families with children 6–23 months to try each day?
- What challenges could families face in giving young children healthy snacks twice a day?
- How can we support the families to overcome the challenges and try every day?
- How can we encourage each other, as champions for nutrition, to follow these plans?

Annex 4. Food-Based Recommendations Guide for Household-Level Programming

[Access the guide here.](#)

Annex 5. Detailed Scope of Work for RFSA Implementing Partner Technical Assistance

Technical Assistance for Amalima Loko Resilience Food Security Activity (RFSA) in Zimbabwe to Develop an Approach for Developing Food-Based Recommendations Using Locally Available Foods at the Household Level

Date of Request: May 17, 2022

Implementing Partner Contacts:

Primary contact: David Brigham, Chief of Party, Amalima Loko

Secondary contact: Pamela Ncube-Murakwani, Health Lead, Amalima Loko

BHA Partner Contacts:

Primary contact: Mike Manske

Secondary contact: Themba Nduna

Location: Zimbabwe

Period of Performance: September 1, 2022–March 1, 2023

Funding Amount and Source(s): US\$ 145,195 (total, starting in PY4 and carrying over into PY5) Title II

A. Background

Amalima Loko is a five-year (2020–2025) Resilience Food Security Activity led by Cultivating New Frontiers in Agriculture (CNFA), funded by USAID. The program seeks to elevate the livelihoods of more than 67,000 vulnerable households across five districts of Zimbabwe’s Matabeleland North province, namely Tsholotsho, Nkayi, Lupane, Binga and Hwange districts. The goal for the Activity is to improve food and nutrition security through improved food access and sustainable watershed management. The program has 3 key purposes which are as follows:

- Purpose 1: Enhanced and inclusive local ownership over food security and resilience planning and development
- Purpose 2: Improved health and availability of soil, water and plant resources within the watershed
- Purpose 3: Improved human health and livelihoods.

The consortium partners include CNFA, who are leading on the agriculture and livelihoods activities; International Medical Corps, leading on the health and nutrition activities; ORAP, leading on the community visioning and community mobilization activities; Mercy Corps, leading on gender, youth and social dynamics and resilience activities; Manoff Group leading on Social Behavior Change; and Dabane are leading Natural Resources Management activities.

The key programmatic approaches are—

- blanket supplementary feeding program
- watershed management

- community visioning.

In Matabeleland, the stunting prevalence is 35.4%, and the underweight prevalence is the highest in the country at 14%, according to the 2020 Zimbabwe Rural Livelihoods Assessment (RLA) report. The minimum acceptable diet (MAD) for children ages 6–23 months in Matabeleland North was 1.5% and considered one of the lowest in Zimbabwe. The minimum meal frequency (MMF), minimum dietary diversity (MDD) and minimum acceptable diet (MAD) of children greatly deteriorated in 2020 as compared to 2019 (MMF from 51% to 27.3%, MDD from 8.6% to 7.2%, MAD from 4.5% to 1.5%). As part of a package of multi-sectoral efforts to improve nutrition indicators, Amalima Loko would like to develop local food-based recommendations⁷ to utilize locally available foods, and support caregivers in addressing sub-optimal feeding practices to improve food and nutrition security, building off previous program experience. While previous Zimbabwe development food security activity (DFSFA) program experience has shown success in using food-based recommendations or ‘recipes’ to promote improved nutrition, food unavailability, and lack of a field-friendly standardized approach to identify and test feasible food-based recommendations, has “affected the momentum in knowledge transfer on the use of local foods for a balanced child diet”⁸. The Amalima Loko program is also operating in a new geography, and therefore would like to ensure they are developing context-specific materials for program use.

B. Activity Description

As highlighted during the culmination workshop, BHA emphasized the importance of knowing the cultural context and incorporating that learning into program activities. More specifically, BHA noted that wild foods contribute significantly to the typical diet, especially edible plants and fruits in project areas like Hwange. There was interest in how the project would incorporate learning around consumption of underutilized foods into nutrition activities beyond household gardens (e.g., Care Groups, Social Behavior Change (SBC) platforms) in order to address barriers to children’s and women’s dietary diversity.

During the culmination workshop, the Amalima Loko field team confirmed their intention to study the new contexts in which they are operating, and to promote locally available nutritious foods in an effort to improve dietary diversity. They anticipate completing a Nutrition Causal Analysis in August 2022 to yield information on current feeding practices, including meal frequency, diversity, and quantity, as part of their refinement year studies. This study will also yield some information on market access and cost, locally available foods, perceptions from caregivers about current feeding practices, and access to foods such as underutilized indigenous foods (e.g., insects). Amalima Loko is requesting additional support from USAID Advancing Nutrition to analyze these findings and, if needed based on any gaps identified, gathering additional, context-specific information in order to inform program activities in the four districts of implementation. More specifically, the field team is requesting support from USAID Advancing Nutrition to strengthen their capacity on how to use a more thorough approach to reviewing existing data, and collecting context-specific data in order to develop improved food-based recommendations for young children, including but not limited to complementary foods, that are tested and shown to be feasible before including them in their multi-sectoral program activities.

As part of their activities, Amalima Loko would like to develop food-based recommendations to leverage locally available, nutrient-rich foods to support caregivers in feeding their young children

⁷ Local food-based recommendations for improving dietary practices will be determined by identifying improvements that contribute towards filling gaps in nutrient requirements and meeting global standards for young child feeding practices (such as dietary diversity, frequency of meals, adequate amount of food).

⁸ As cited by field staff on the current Amalima Loko program and in the Mid-term Evaluation Report Zimbabwe Development Food Assistance Programs: ENSURE and Amalima.

healthier and more diverse diets, in terms of dietary diversity, frequency and amount of food. This will help to address a priority behavior of the Amalima Loko program, “Caregivers feed CU5 (age 6-59months) an adequate quantity (amount/meal and frequency) and variety of nutrient-rich foods for both meals and snacks”⁹. From research and field assessments completed by both the previous Amalima DFSA and during the refinement year of Amalima Loko, there are indications that some underutilized foods could be prepared in a culturally acceptable way to help in meeting young children’s nutrient requirements. Some of these locally available foods are neglected or underutilized (NUS) by program participants, because they are considered to be culturally inappropriate for young children, or because caregivers may not know how to prepare them in a manner that is acceptable to children, and their nutrient value is unknown.

To improve the impact of efforts toward addressing sub-optimal feeding practices at household level, Amalima Loko requests support from USAID Advancing Nutrition to build an approach to develop diverse and nutrient-dense food-based recommendations to promote in their multi-sectoral activities. While using food-based recommendations in IYCF programming is not new, there is a need for a field-friendly approach to assessing contexts for potentially beneficial underutilized nutritious foods, coupled with developing and testing food-based recommendations to support improved practices with the active participation of caregivers. This work will build on previous Zimbabwe DFSA program experiences (ENSURE, Amalima), and consider program materials and lessons learned from those programs¹⁰. The approach to developing food-based recommendations would include, if needed, a context assessment to identify sub-optimal feeding practices, and underutilized and locally available nutrient-rich foods and food groups. The Amalima Loko program is operating in new geographic areas from where Amalima implemented activities previously, and as such the context may differ and more targeted materials may need to be developed that are appropriate for activities implemented in new communities. Refinement year studies and other project resources will be reviewed as part of the initial secondary data review to inform if additional information is required. Once available and accessible foods are identified through a series of exercises (market survey; FGDs to understand what households raise, grow, gather, and purchase; pile-sorts; and food combination exercise¹¹), food lists will be developed for consideration of what could be used to enhance current meals. Prior to this process, the USAID Advancing Nutrition team will have reviewed existing research reports and surveys to determine if certain species are not currently in the food composition tables for Zimbabwe.¹² If unknown foods are showing promise for filling nutrient gaps, the team will submit up to 5 new species per district, to be analyzed by a certified national laboratory¹³ to identify the unique nutritional contribution of these underutilized species.

9 The behavior the project is trying to address is one of the key priority behaviors identified for the Amalima Loko project: Caregivers feed CU5 (age 6-59months) an adequate quantity (amount/meal and frequency) and variety of nutrient-rich foods for both meals and snacks. Based on a Behavior profiling process, the key steps to achieve this priority behavior are:

1. Caregivers gain knowledge on recommended child feeding practices.
2. Discuss with influential family members the options for obtaining nutritious foods (purchase, use of family production, gathering) and how to make nutritious food available for the child, even if the family is not eating.
3. Obtain sufficient quantities of nutrient-rich foods, such as animal-source foods and fruits and vegetables, for daily use.
4. Prepare nutrient-rich foods in an age-appropriate manner according to recommendations in a hygienic environment.
5. Serve an age-appropriate amount of nutrient-rich food in meals and snacks daily and responsively feed the child in a hygienic environment/manner.
6. Limit highly processed, non-nutrient-rich foods and sugary drinks.

10 As requested in the Request for Applications for Development Food Security Activities in Zimbabwe (FY2020).

11 a participatory exercise to understand current dietary practices and willingness to try new combinations of foods.

12 The last food composition table in Zimbabwe was updated in 1998. Malawi and South Africa food composition tables will be cross-checked.

13 Government Analyst Lab Ministry of Health and Child Care - Government Analyst (mohcc.gov.zw), Ministry of Health and Child Care - Government Analyst, <http://www.mohcc.gov.zw>.

The approach then would consist of using a field-friendly nutrition composition calculation tool¹⁴, capable of incorporating locally available foods, to develop food-based recommendations prepared for young children by adding in or substituting new or underutilized ingredients that help meet their unique nutrient requirements. The tool calculates each combination of food's macronutrients (carbohydrates, fat, protein, fiber, added sugars) as well as micronutrients (vitamins including Zinc, Vitamin A, Iron, and Folic Acid and essential minerals). Factors such as seasonality, geography, climate-resiliency (including soil health), livelihoods, storage and processing considerations, access to markets, cost of food, and gender dynamics (workload) will serve to inform the ingredients included in the recommended dietary practices. All these factors will result in a variety of improved food-based recommendations that would need to be tested with caregivers for feasibility and acceptability, and based on this could potentially be included in program efforts.

Learning from caregivers in trying out improved food-based recommendations (or modified practices) is an important step in this process. Through household trials of improved practices (TIPS), caregivers will share their experience in trying out new and improved food-based recommendations, and offer suggestions for modifying them based on access, availability and utilization of local resources and cultural practices. Involving caregivers in the process will ensure that current feeding practices are considered, and improved practices that are tested and shown to be feasible can be sustained, leading to the adoption of improved feeding practices. These recommendations would then be used to inform program activities on a larger scale, reaching households throughout the program area.

All of this learning would result in the development of program materials with food-based recommendations that are improved versions of commonly prepared meals, enhanced with locally available, nutrient-rich ingredients that contribute towards meeting the unique nutrient requirements for children under five. This book would be used by Care Group leaders and Farmers Groups to support their peers in adopting improved feeding practices. The intention is that once this process is established, the Amalima Loko project could apply this same approach to developing food-based recommendations to meeting nutrient requirements among other household members, such as adolescents and pregnant and lactating women. It will also contribute towards the program's sustainability goals of eventually shifting away from in-kind food distributions (e.g., imported staple crops), and towards the utilization of locally available nutrient-dense foods. Finally, this technical assistance to one RFSA partner in Zimbabwe could contribute to field-testing a global guide to build capacity among all RFSA IPs.

C. Purpose & Objectives

Purpose: To develop an approach for developing improved food-based recommendations using locally available foods that caregivers can use at household level to improve young child feeding practices.

Objectives: USAID Advancing Nutrition will provide technical assistance to the Amalima Loko program staff to develop the following:

- I. Develop a context assessment and food-based recommendations design guide. This will be general enough that the program staff can repeat the process in multiple areas of the country with different food environments and cultural practices, and develop food-based recommendations for different program beneficiaries (children under 5, adolescents, PLW). The approach is rapid and user-friendly in that the approach can be carried out in 2–10 days per program area, depending on existing data and depending on practices to test out through

¹⁴ A previous version of this nutrition analysis calculation tool was created for the technical assistance provided to the Takuna CARE project (Zimbabwe), and will be updated for improved utility for use by Amalima Loko and other future applications.

household behavior trials. Users can select from modules of the guide to use for their program purposes.

2. Develop program materials (template). The learning from the context assessment and nutrition composition analysis will be inserted in a book/program template, using context-appropriate images and languages that can be used in multi-sectoral activities.
3. Develop a brief training guide for using the program materials/book. A brief guide will be developed for Amalima Loko program staff to use, to train their Care Group leaders and Farmer Group leaders to use in supporting beneficiaries to adopt these food-based recommendations in their program activities.

The specific process for developing these products is further outlined below.

D. Alignment with BHA Priorities

USAID Bureau for Humanitarian Assistance and USAID Advancing Nutrition have recently lent support to the Amalima Loko program during the inception and culmination phases of their refinement year of programming. The proposed approach is a request for continued support through the USAID Advancing Nutrition project's Technical Assistance activity, to apply the learning generated during their refinement year studies as well as to collect additional information in order to make the program materials context-specific. This work aligns well with BHA priorities of intervening at household level to support vulnerable beneficiaries in improving maternal, infant and young child feeding practices. It also complements BHA and USAID Advancing Nutrition's implementation research to strengthen the quality of peer groups. While the implementation research will ensure the quality of the peer group itself is strengthened, this activity will improve an element of the technical content that is delivered through the peer group.

E. Scope of Duties: Technical Advisors

USAID Advancing Nutrition will support the Amalima Loko program staff to develop the three (3) products outlined in the objectives above. Given that the program would like to apply this approach to four (4) distinct districts (Nkayi rural, Lupane urban, Binga, Hwange rural), USAID Advancing Nutrition will work closely with the Amalima Loko team to design the approach and tools so that the field team can carry out the approach across their four program districts. Advancing Nutrition will review project-specific and global research to inform the various steps, be closely involved in the design of the tools and project templates, and lend remote support to the field team as they carry out the field work and develop project materials.

The process would involve the following steps:

- I. Review secondary data
 - USAID Advancing Nutrition and Amalima Loko staff will collaborate in reviewing research conducted in the refinement year of the Amalima Loko program, and other NGO and UN resources¹⁵ to identify existing literature on sub-optimal feeding practices and locally available resources, market access, caregiver perspectives. (Nutrition Causal Analysis, gender analysis, community visioning and health behavior study, agricultural and NRM studies).
 - Discuss if there are gaps in information that would benefit from additional data collection.

¹⁵ Organizations with existing information may include Oxfam, IFAD, Biodiversity, CGIAR, GAIN, WFP, SAFOODS and MAFOODS databases, UC Davis, along with related research (SHINE Trial), etc.

2. Develop the food-based recommendations guide and related tools
 - USAID Advancing Nutrition will lead the development of the draft food-based recommendations guide (with fillable PDF fields) and program material templates to be used for completing the improved practices process outlined here. Amalima Loko team will contribute to the development, particularly with past program experience and context-specific knowledge of what works across their 4 districts.
3. Analyze the nutrition composition of unknown species of food (e.g., ingredients)
 - Based on a review of refinement year research and other organizations' existing resources¹⁶, using recommended criteria, Amalima Loko will select and submit up to five new species per district for nutrition composition analysis. Criteria will consider affordability, accessibility, seasonality, time burden, resource constraints (water, fuel), gender aspects, conflict risk, and food group representation.
 - The nutrition team will collaborate with the agriculture and Natural Resources Management team (and other teams as required) in determining what will be promoted.
4. Primary data collection (if needed)
 - Based on gaps in existing information, Amalima Loko staff will conduct KIIs, FGDs, and observations with caregivers to understand current feeding practices, across the four districts.
5. Develop Key Foods List as considerations for food-based recommendations
 - With support from USAID Advancing Nutrition, Amalima Loko will develop a list of locally available foods, for consideration in developing 'improved recipes' or food-based recommendations to modify current dietary practices. They will draw on existing program reports and other partner research. Where needed, Amalima Loko will conduct a market survey and community FGD, in order to identify foods raised, grown, gathered, purchased¹⁷.
 - i. Where needed, they will probe to understand reasons for households not using neglected and underutilized species.
6. Observe common practices
 - Where additional information is needed, Amalima Loko will carry out food combination exercises and pile-sorting exercises with caregivers to understand current food preparation practices, interest in trying new foods, cultural beliefs inhibiting or enabling use of current and new foods, cost, availability, and other barriers and enablers. USAID Advancing Nutrition will design templates for the field team to use in collecting this information.
7. Nutrient Composition analysis and refinement
 - USAID Advancing Nutrition will work closely with the Amalima Loko team to conduct nutrient calculations using a nutrient composition calculation tool and, from this, together they will develop a list of food-based recommendations for the testing phase.
8. Trials of improved practices (TIPs)
 - Amalima Loko's field team will test out the food-based recommendations with a small sample of caregivers in program villages, and apply learning from their experience to the final recommendations to be used in the program.
9. Program considerations: multi-sectoral integration
 - With the templates designed by USAID Advancing Nutrition, Amalima Loko will develop program materials to be used by Care Group leaders and Farmer Group leaders to promote adoption of the practices in their program activities.

¹⁶ The Amalima Loko team will consult Bio-Innovation Zimbabwe <https://www.bio-innovation.org/>, and other organizations who work in this field (

¹⁷ Identify locally available ingredients for use in recipe development, sourced from tools like the Zimbabwe Diet Quality Questionnaire, <https://www.globaldietquality.org/dqq>

- USAID Advancing Nutrition will develop a brief training guide (2–3 pages), to be used by Amalima Loko program staff to train Care Group leaders and Farmer Group leaders to use the program materials in their activities.

F. Deliverables and Activity Timeline

The entire process will take place September 2022 to March 2023.

Activity	Timeline	Level of Effort
Design guide for an approach to developing food-based recommendations, program materials template, and a training guide	September 1st–November 15th	Advancing Nutrition will offer draft guide/tools and collaborate with AL team in finalizing these
Desk review and synthesis of secondary data	September/October 2022	Led by Amalima Loko, with support of Advancing Nutrition
Create field-ready materials	October/November 2022	
Analyze the nutrition composition of unknown food species in a certified national laboratory	October/November 2022	Amalima Loko team will use criteria to select species and ensure local analysis
Field work undertaken by Amalima Loko <ul style="list-style-type: none"> ● 3-day (3 hours each) virtual training for AL team on guide and tools ● Field team collects primary data - KIIs, FGDs and observations <ul style="list-style-type: none"> ○ Develop Key Foods List, market survey, community FGDs (gathered, raised, grown foods) ○ Recipe creation exercises with caregivers¹⁸ ● Nutrient composition analysis and refinement: 	December 2022–January 2023 Days 1–3 Days 4–5 Day 6	Advancing Nutrition conducts virtual trainings for AL team on the tools Field team works with Advancing Nutrition remotely to develop improved practices

¹⁸ We will consider various qualitative methods that could be used widely for RFSA populations which could include recipe creation exercises, pile-sorts, free listing, etc.

<p>nutrient calculations using the nutrient analysis calculation tool to develop improved practices</p> <ul style="list-style-type: none"> • Testing of improved practices (TIPs): home visit¹⁹ • Testing of improved practices (TIPs): final visit²⁰ • Analysis of household (HH) trial data²¹ and selection of recommended practices • Development of program materials (booklet) 	<p>Day 7</p> <p>Day 17–20²²</p> <p>Day 21–22</p> <p>January/February 2023</p>	<p>Advancing Nutrition supports field team remotely to develop improved practices</p> <p>Amalima Loko team carries out home visits (first and final) in select areas</p> <p>Advancing Nutrition supports AL team remotely with analysis and recommendations from HH trial data</p> <p>Advancing Nutrition supports AL team with creating program materials after each exercise is carried in out in 4 districts; AL team will finalize materials in-country</p>
<p>Submission of TA summary report</p> <p>Milestone Products:</p> <ul style="list-style-type: none"> • context assessment and food-based recommendations design guide • Program materials/book template • Brief training guide for using program materials 	<p>March 1, 2023</p>	<p>Milestone products will be included with the TA summary report.</p>

19 TIPS Visits 1 & 2 Accelerated: The interviewer gathers information to understand household problems (related to improved practices being proposed) and current food practice through interaction and observation and proposes practices to try. (Manoff, 2021)

20 TIPS Visit 3: The interviewer returns to the home to assess the outcome of the trial. (In some instances, the recommendations may also be discussed with other household members who may influence the participant's ability or willingness to carry out the recommendations.) After the final visit, the interviewer seeks to learn as much as possible about the participant's experience in trying out the new practice(s) (Manoff, 2021). Since the final interview should allow for several opportunities to practice the behavior, the final interview will be conducted after the TDY is complete, by Amalima Loko staff. Mock exercises will train the interviewers appropriately.

21 The team will use a Matrix approach for analysis, and will be guided by BHA's 2020 Monitoring and Evaluation Guidance.

22 Depends on practices to be tested (market frequency, ideal duration to test feasibility, etc.).

Deliverable(s):

1. TA Summary report.

Milestone Products(s):

2. Draft context assessment and food-based recommendations design guide, program materials template, training guide on using program materials (external purposes).

G. Scope of Duties: Host Organization and In-Country Supervisor

Host Organization (Amalima Loko)

- Amalima Loko will meet virtually on a routine basis (weekly and daily, as needed) with USAID Advancing Nutrition staff to collaboratively design the approach and tools, leading on gathering existing data to share with Advancing Nutrition.
- Amalima Loko will provide field staff to carry out field work as needed in order to gather primary data (if needed).
- Amalima Loko will be responsible for developing the final program materials based on recommendations and e-templates (of the three tools outlined above) provided by Advancing Nutrition. This includes printing any materials needed for project purposes.

In-Country Supervisor

- Pamela Murakwani, the Nutrition Specialist on the Amalima Loko program, will be the main point person for all the work carried out in-country. The Social and Behavior Change Lead, Agriculture and Livelihoods Lead, Collaboration, Learning and Adaptation Lead, will also collaborate closely with USAID Advancing Nutrition to review existing data and complete the field work. Furthermore, they will collaborate with USAID Advancing Nutrition in analyzing the household trials of improved practices findings, and lead on developing the program materials (supplying context-appropriate images and content) based on the template prepared with USAID Advancing Nutrition's support.

H. General Terms for the Employment

Given the funding for this work is being provided by the USAID Advancing Nutrition Project, the products developed will be produced in USAID Advancing Nutrition templates with USAID Advancing Nutrition branding. The logo of Amalima Loko will appear to the right of the USAID logo on products, because Amalima Loko will be contributing in-kind to the creation of the product.

I. Essential Personnel, Skills, and/or Expertise Required

USAID Advancing Nutrition will provide the following expertise, based on the needs of the request for technical assistance. Many of these roles are complementary to those of the Amalima Loko team in ensuring they have the support and experience from global and other country work:

- Jen Burns, Senior Nutrition Advisor: Substantial experience working on USAID-funded BHA programming; experience providing technical support to the Amalima Loko program; previous USAID FFP implementation program experience in Zimbabwe; and experience with IYCF, particularly context assessments and recipe development across multiple countries.
- Chris Vogliano, Technical Advisor, Food Systems: Experience conducting nutrition composition and building recipes based on locally available foods. Experience working with food composition

laboratories to analyze underutilized species, and analyzing and integrating subsequent data into programmatic efforts.

- Shaneka Thurman, Social and Behavior Change Advisor: Technical experience with social and behavior change measurement, from formative research to evaluation. Understanding of peer group models, including the Care Groups used in Amalima and Amalima Loko programming. Public health and nutrition experience with capacity strengthening, adult learning and curriculum development throughout Sub-Saharan Africa.
- Support as needed from Nutrition in Humanitarian Contexts and capacity-strengthening teams.
- KM support.
- Administrative and management support.

J. Budget:

The overall budget includes all PY4 and PY5 costs, including Advancing Nutrition staff time, in-country laboratory analysis of indigenous food species, and all guide/tool development.



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November 2023

USAID Advancing Nutrition is the Agency's flagship multi-sectoral nutrition project, addressing the root causes of malnutrition to save lives and enhance long-term health and development.

This document is made possible by the generosity of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of JSI Research & Training Institute, Inc. (JSI), and do not necessarily reflect the views of USAID or the U.S. Government.