

## **INFORMATION BRIEF**

### **EXECUTIVE SUMMARY**

*The Amalima Loko program is a five-year USAID funded Bureau for Humanitarian Assistance (BHA) program designed to improve food and nutrition security in Zimbabwe through increased food access and sustainable watershed management. The program is being implemented in Matabeleland North by a consortium led by Cultivating New Frontiers in Agriculture (CNFA) and comprised of the Organisation of Rural Associations for Progress, Dabane Water Workshops, The Manoff Group, International Medical Corps, and Mercy Corps.*

The modified Nutrition Causal Analysis (NCA) was conducted from June 2021 to September 2022 in Binga, Hwange, Lupane and Nkayi districts, which constitute *Amalima Loko* intervention zone in Matabeleland North Province, Zimbabwe. The main objective of this study was to identify context-specific factors of undernutrition among women of reproductive age (WRA) and children under 5 years of age (CU5) to adapt programme's interventions accordingly. Low birth weight, non-optimal nutritional status of women, low access to income and low social support of women were identified as major risk factors of undernutrition in the zone.

### **METHODOLOGY**

*A Link NCA Nutrition Causal Analysis, which was the backbone of this study, is a mixed method for analysing the multi-causality of under-nutrition as a starting point for improving the relevance and effectiveness of multi-sectoral nutrition security programming in a given context. It is a structured, participatory and holistic study that builds on UNICEF's conceptual framework with an objective to build an evidence-based consensus on plausible causes of undernutrition in a local context<sup>1</sup>.*

The structure and the content of this study was adapted to the context of *Amalima Loko* programme and specific objectives, which the study needed to address. The usual quantitative data collection of the NCA was replaced by statistical analyses of existing datasets in order to maintain a mixed method approach. In addition, 24h dietary recalls and an abbreviated market study were included to gather necessary evidence for research questions, which are not commonly included in a standard Link NCA study.

### **KEY STAGES**

Systematic review of secondary data sources was conducted in June 2021 and updated in June 2022. The review covered past surveys and research applicable to the study zone with the aim of identifying a set of risk factors and their interactions, which might trigger undernutrition among women of reproductive age (WRA) and children under 5 years of age (CU5).

Secondary quantitative data analyses (bivariate logistic and linear regressions) were conducted from December 2021 till February 2022 using the 2015 Zimbabwe Demographic and Health Survey<sup>2</sup> and the 2019 Zimbabwe Multiple Indicator Cluster Surveys (MICS)<sup>3</sup> datasets, which included 461 and 573 observations, respectively.

In-depth qualitative inquiry was conducted in July 2022 in four qualitatively representative locations (one village per district). At village level, a variety of participants ranging from mothers and fathers of children under 5 years of age, community leaders, and Village Health Workers were requested to participate. In total, 48 focus group discussions and 96 key informant interviews were organized with 548 participants, out of which 405 were women. Additional 12 focus group discussions and 12 key informant interviews were organized with health centre personnel at district level. The primary data collection also included 99 (ninety-nine) 24h dietary recalls with caregiver-child dyads, followed by 34 in-house observations, and an abbreviated market study across 8 markets.

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<sup>1</sup> For more information about the methodology, please refer to [www.linknca.org](http://www.linknca.org).

<sup>2</sup> Zimbabwe Demographic and Health Survey 2015: data. Rockville, Maryland, USA: Zimbabwe National Statistics Agency (ZIMSTAT) and ICF International.

<sup>3</sup> ZimStat 2019. Zimbabwe Multiple Indicator Cluster Surveys (MICS) data. Harare: ZimStat.

Data synthesis was conducted from August to September 2022. The preliminary results were presented to key decision-makers and operational partners in Bulawayo on 16 September 2022, followed by a presentation of final results as from October 2022.

## KEY FINDINGS

### A. CATEGORISATION OF RISK FACTORS

Based on a triangulation of various data sources (Cf. *Key stages*) risk factors of undernutrition, per UNICEF conceptual framework, were categorised as *major*, *important* and *minor* in relation to their believed effect on the prevalence of undernutrition in the *Amalima Loko* intervention zone. Low birth weight, non-optimal nutritional status of women, low access to income and low social support of women were identified as major risk factors. Other notable risk factors include low female autonomy/decision-making powers, early childbearing and early marriage and women's heavy workload.

Risk factor		Overall interpretation/ Impact of risk factor <sup>4</sup>
A	Limited access to health services	++
B	Limited utilisation of health services	+
C	Low birth spacing/ early, repetitive or unwanted pregnancies	++
D	Low birth weight	+++
E	Low nutritional status of women	+++
F	Caregiver's well-being	++
G	Non-optimal breastfeeding practices	++
H	Non-optimal complementary feeding practices	++
I	Low quality of interactions between a child and a caregiver	+
J	Low access to a quality diet	++
K	Low diversity/ access/ availability of income sources	+++
L	Malfunctioning market or supply system	++
M	Low coping capacities	++
N	Inadequate accessibility, availability and quality of water at household level	++
O	Non-optimal sanitation practices	++
P	Non-optimal personal hygiene practices	+
Q	Non-optimal environmental and food hygiene practices	+
R	Heavy workload of women	++
S	Low female autonomy/ decision-making	++
T	Low social support for women	+++

### B. STATISTICAL ASSOCIATIONS

Common protective factors<sup>5</sup> for *wasting* on the basis of weight for height z-score (WHZ), *stunting* on the basis of height for age z-score (HAZ) and *underweight* on the basis of weight for age z-score (WAZ) include mother's height, mother's BMI, child's weight at birth and mother's level of education<sup>6</sup>. Mother's haemoglobin level<sup>6</sup> came out as a protective factor against *stunting*, *underweight* and *anaemia*.

While no common risk factors<sup>7</sup> for *wasting* and *stunting* were identified, common risk factors for *wasting* and *underweight* include child's consumption of organ meat<sup>8 9</sup>, while mother owning a mobile phone<sup>10</sup> and household's wealth index (most likely interconnected) were associated with lower probability of a child being *wasted* and *underweight*. The consumption of leafy vegetables<sup>8 9</sup> came out as a common risk factor for *stunting* and *underweight* while caregiver's frequency watching TV<sup>10</sup> was associated with lower odds of a child suffering from either condition. Available datasets present conflicting evidence on the relationship between child's nutritional status and their age.

<sup>4</sup> Risk factors perceived as having a major effect on undernutrition in the intervention zone (i.e. risk factors with solid evidence on strong links with one or multiple forms of undernutrition) are highlighted in red, important factors (i.e. risk factors with emerging evidence on possible links with one of multiple forms of undernutrition) are marked in orange while risk factors with minor impact (i.e. risk factors with limited or unsubstantiated evidence on links with either form of undernutrition) are green.

<sup>5</sup> "Protective factors" refer to factors, which decrease the probability of child being wasted / stunted / underweight / anaemic.

<sup>6</sup> Increase in the mentioned indicators was associated with a lower possibility of studied nutritional outcomes.

<sup>7</sup> "Risk factors" refer to factors, which increase the probability of child being wasted / stunted / underweight / anaemic.

<sup>8</sup> Likely a proxy indicator of limited access to income.

<sup>9</sup> The counter-intuitiveness of this finding from a nutrition point of view warrants further research.

<sup>10</sup> Likely a proxy indicator of access to income and access to information.

## C. PATHWAYS

Acute malnutrition. Two causal pathways built around six key risk factors can likely explain most cases of acute malnutrition in the intervention zone. First, *limited access to income sources* translates into household's *limited access to a quality diet* and, consequently, into *non-optimal nutritional status of women* and their children's *low birth weight*, which then plays on child's vulnerability to disease as they grow. In addition, *low female autonomy* can translate into *repetitive pregnancies*, which increase a woman's workload and may trigger feelings of *psychological burden*, which then prevent mothers from properly carrying out their *child care* responsibilities.

While the causal pathway of chronic malnutrition is very similar, *low female autonomy*, *repetitive pregnancies* and *psychological burden* were not clearly reflected in the available evidence. *Limited access to income sources* influences directly on the quality of child care practices, notably the *optimal breastfeeding* and *complementary feeding practices*.

## D. RISK FACTORS OF KEY NON-OPTIMAL BEHAVIOURS

### Animal-source food consumption

- *Perceived susceptibility*: caregivers who fed ASF to their children believed that such food is essential for an optimal child development; caregivers who did not feed ASF to their children avoided it for fear of fits<sup>11</sup>, which they labelled as extremely traumatising. *Both believed that the opposite behaviour leads to devastating consequences, such as life-threatening illness.*
- *Perceived self-efficacy*: caregivers who fed ASF to their children found the behaviour easy to practice as they possessed the livestock to satisfy the need without necessarily provisioning it at markets; caregivers who did not feed ASF to their children found the practice difficult as they did not have the means to ensure the addition of animal-source food to their diet.
- *Perceived positive and negative consequences*: despite an overall positive perception of animal-source food among consumers, it has been highlighted that if the consumption is not controlled at a young age, children may end up embarrassing their parents if they do not receive animal-source food per their desire.

### Exclusive breastfeeding

- *Perceived susceptibility*: doers believed that an early introduction of solid foods can lead to undernutrition by damaging child's intestines; non-doers thought that it is the non-introduction of solid foods when a child is hungry that leads to undernutrition. *While their perspectives differ, both doers and non-doers have child's development at heart and desire their optimal growth.*
- *Perceived action efficacy*: non-doers felt that the quality and quantity of milk does not satisfy their child (hence their crying).
- *Perceived social norms*: consumption of light porridge is culturally acceptable.

### Continued breastfeeding

- *Perceived self-efficacy*: both doers and non-doers agreed that abrupt weaning can have adverse effects on child's health while continued breastfeeding is beneficial for their development, however, non-doers cited mother's hunger and a lack of energy as main barriers of practice.
- *Perceived social norms*: Grandmothers seem to play a significant role for disapproving the practice arguing that their children were not breastfed for more than six months and did not suffer from any illnesses. They also mentioned that a mother breastfeeding for two years can have difficulties of getting pregnant and therefore early weaning and low birth spacing is promoted.
- *Perceived negative consequences*: non-doers believed that continued breastfeeding can cause child's diarrhoea and therefore it is necessary to wean the child and prevent further health complications; doers expressed a concern that continued breastfeeding decreases child's appetite for other foods, which can become dangerous at an advanced age. Therefore, in such case they also prefer to wean the child and adapt them to complementary foods.

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<sup>11</sup> Fits are sudden, uncontrolled electrical disturbances in the brain, which can cause changes in one's behaviour, movements or feelings, and levels of consciousness. Epilepsy may be diagnosed in case of recurrent fits.

### Optimal meal-frequency

- *Perceived susceptibility*: doers link non-optimal meal frequency with kwashiorkor, non-doers – while believing that kwashiorkor is a serious condition – are not convinced that it is caused by non-optimal meal frequency, but rather cold meals.
- *Perceived self-efficacy*: heavy workload and a limited access to resources prevents caregivers from preparing multiple meals throughout a day.
- *Perceived negative consequences*: non-doers seem to fear that their child could develop a big belly and, consequently, kwashiorkor, if fed too frequently.

### Handwashing at five critical times

- *Perceived action efficacy*: doers believe that handwashing helps to prevent diarrhoeal diseases, which they consider severe, non-doers are not convinced.
- *Perceived self-efficacy*: doers consider the behaviour easy to practice due to the availability of water, tippy taps and soap while these are not readily available for non-doers, and therefore the behaviour is seen as difficult to practice.
- *Perceived divine will*: non-doers believe that a disease is a consequence of a divine will and no action can prevent it.
- *Perceived negative consequences*: non-doers highlighted water being unnecessarily wasted.

The appropriation of all studied optimal behaviours is principally blocked by grandmothers (who are either child's primary caregivers in the absence of a maternal caregiver or they exercise a decision-making power over child care despite the presence of a maternal caregiver) as well as husbands (who, by cultural tradition, monopolise decision-making power in the household).

## E. ACCEPTABILITY AND AVAILABILITY OF NUTRIENT-RICH FOODS

Availability of food products was categorised as a key factor influencing food choices of the population across studied districts, followed by price, perception of nutritional value and easy preparation. While most foods, with the exception of food taboos enforced notably among pregnant and lactating women, were mostly acceptable for studied communities, they were not always available and/or their availability was seasonal. For example, cowpeas, sweet potatoes, round nuts, fresh fish or seafood as well as pumpkin were largely unavailable across all districts during the data collection period (July). On the other hand, price for certain available staple items varied substantially, for example reported cost for white maize ranged from 1120 ZWL/kg in Binga to 4850 ZWL/kg in Hwange while peanut butter, sugar and cooking oil were reported as largely unaffordable in most households in studied communities, especially in Binga. Insects, mopane worms and moringa were only partially accepted and mostly unavailable across districts.

## RECOMMENDATIONS

### Low birth weight

- To prioritise strengthening the recommended health service provision for pregnant women, including the promotion of early antenatal care (ANC) visits and a recommended number of ANC visits during pregnancy;
- To integrate sexual and reproductive health (SRH) messaging in existing interventions such, with a special focus on youth with the objective to avert unintended pregnancies;
- To identify partners conducting sexual and reproductive health outreach in the *Amalima Loko* intervention zone to coordinate the provision of sexual and reproduction health services at BSFP distribution points;

### Non-optimal nutritional status of women

- To increase access to health information by upscaling health messaging, including debunking myths and misconceptions about food taboos, by increasing appreciation of indigenous foods and by promoting the consumption of locally-available, nutrient-rich foods;
- To utilise Lead Mothers and Male Champion Groups to promote the "First 1000 days" concept with a special focus on mother's nutritional and psychological well-being in order to improve birth outcomes as well as infant and young child feeding practices, especially among young mothers and non-maternal caregivers;

- To promote the importance of an adequate, nutrient-rich diet for pregnant and lactating women, including awareness raising about negative consequences of a consumption of processed and sweet foods and beverages, leveraging on social and behaviour change approaches via Care Groups;

#### Low access to income sources

- To integrate Village Savings & Lending Groups in all interventions, including but not limited to Care Groups, and to promote viable income-generating activities, such as poultry-rearing, horticultural activities and small businesses, especially among women;
- To facilitate access to markets via community-based initiatives to support the sale of produce and other items;

#### Low social support for women

- To promote adolescent participation in Care Groups in both the mixed Care Groups and the young mother Care Groups;
- To enhance male involvement in maternal health and nutrition as well as child care, with the objective to strengthen social support for women, to promote joint-decision making at household level and equitable sharing of household chores through Male Champions and Community Gender dialogues;
- To promote the introduction of labour-saving techniques and technologies to reduce women's workload, including fetching water in bulk, collecting firewood in bulk, use of solar-powered devices, energy-saving stoves, etc.;

## LIMITATIONS

Unavailability of certain key NCA standard indicators. DHS 2015 and MICS 2019 datasets did not include indicators for all studied risk factors. Therefore, certain risk factors could not be sufficiently triangulated and their categorization could have been impacted as they generally ranked lower than other risk factors, for which quantitative analyses could be conducted. Statistical associations. It is advised to appraise statistical associations with caution as observed links do not necessarily prove the causality, while unobserved links do not mean that the causality does not exist. Confounding variables. Statistical analyses conducted within the framework of this study are based on unadjusted regression models that do not consider the effects of confounding variables. Temporal limitations. Considering that newer, population-representative data were not made available for this study, presented statistical associations do not account for incurred temporal changes due to Covid-19 and, therefore, cannot speak to potential impact of the pandemic.