



**NUTRITION CAUSAL ANALYSIS**  
**Final Technical Workshop**  
**16-17 May, 2016**  
**Moroto, Kalip Hall, and Mount Moroto Hotel Hall**





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**Workshop program – NCA (Nutritional Causes Analysis)**  
**Final Technical Workshop, May 16-17, 2016**  
**KALIP/OPM Hall, UN Road, Moroto, May 16**  
**DAY 1: Nutrition Causal Analysis' findings**

9.00-9.30	Registration of the participants / Opening of the workshop
9.30-9.45	Presentation of workshop's objectives
9.45-10.30	Presentation of NCA's findings, Qualitative assessment
10.30-10.45	Break
10.45-11.30	Presentation of NCA's findings, Risk Factor Survey
11.30-13.30	<i>Local causal model NCA</i>
13.30-14.30	Lunch
14.30-16.00	Reviewing of NCA's evidence and confidence note <i>Multi-sectorial working groups</i>
16.00-17.00	Final confidence note

**Mount Moroto Hotel, Moroto, May 17**  
**DAY 2: Nutrition Causal Analysis' Findings**

9.00-9.30	Reviewing of NCA's evidence and risk factors rating <i>Multi-sectorial working groups</i>
9.45-10.30	Discussion on rating
10.30-10.45	Break
10.45-12.00	<b>Recommendations Link NCA</b> Implement response via programming or advocacy <i>Multi-sectorial working group</i>
12.00-13.30	Conclusions
13.30-14.30	Lunch



## 1. Link NCA implementation and methodology

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### 1. Definition of Link Nutrition Causal Analysis

A Link NCA is a **structured, participatory, holistic** study, based on the UNICEF causal framework, to build a case for nutrition causality in a local context.

**“Structured”**: the steps of the methodology are precisely defined and have all been tested in the field. We have a good idea of what can be realistically achieved or not.

**“Participatory”**: the study is giving a real opportunity to national technical experts as well as women from the community to express their opinion on under-nutrition causality, to discuss, review and finally validate the conclusions of the study. Technical experts are asked to give a mark of confidence to the study.

**“Holistic”**: Under-nutrition is here studied comprehensively to avoid a sectorial approach and to be able to pinpoint inter-relations between causal pathways.

**“Based on the UNICEF causal framework”**: The Link NCA methodology is using the UNICEF framework to identify potential risk factors of under-nutrition. A literature review is nearly finalized to summarize the existing knowledge on the causal association between the risk factors identified and the different types of under-nutrition. This review is called “pathways to under-nutrition”.

**“Building a case for nutrition causality”**: The core exercise of a Link NCA is to identify and rank causal hypotheses by order of importance. For that purpose, the Link NCA officer is analyzing different sources of information:

- Scientific and grey literature review
- National experts’ knowledge
- Perception of women from the community
- Results from the household survey
- Interpretation of the seasonal calendar.

Based on these, the Link NCA expert, technical experts and the community propose and validate an interpretation of nutrition causality.

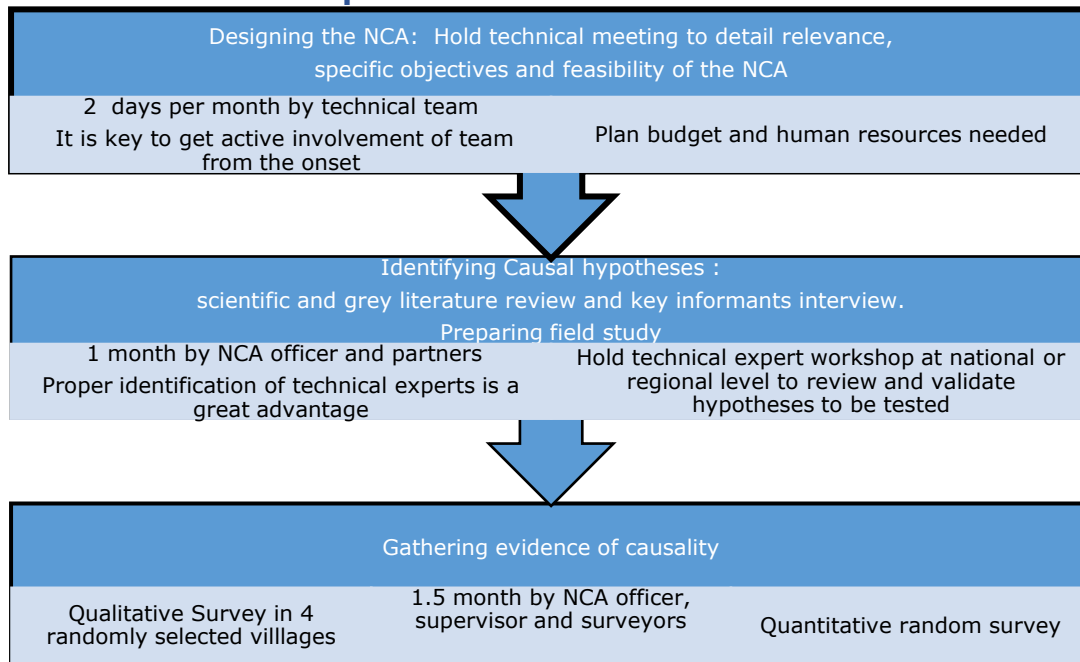
**“In a local context”**: Causes of under-nutrition are often different from one location to another. The purpose of the methodology is to go beyond generic interventions by identifying really context-specific causes in order to propose adequate solutions. The seasonality of under-nutrition can for example be very different from one livelihood zone to another. A Link NCA is not a statistical demonstration of nutrition causality that can be generalized at a national level.

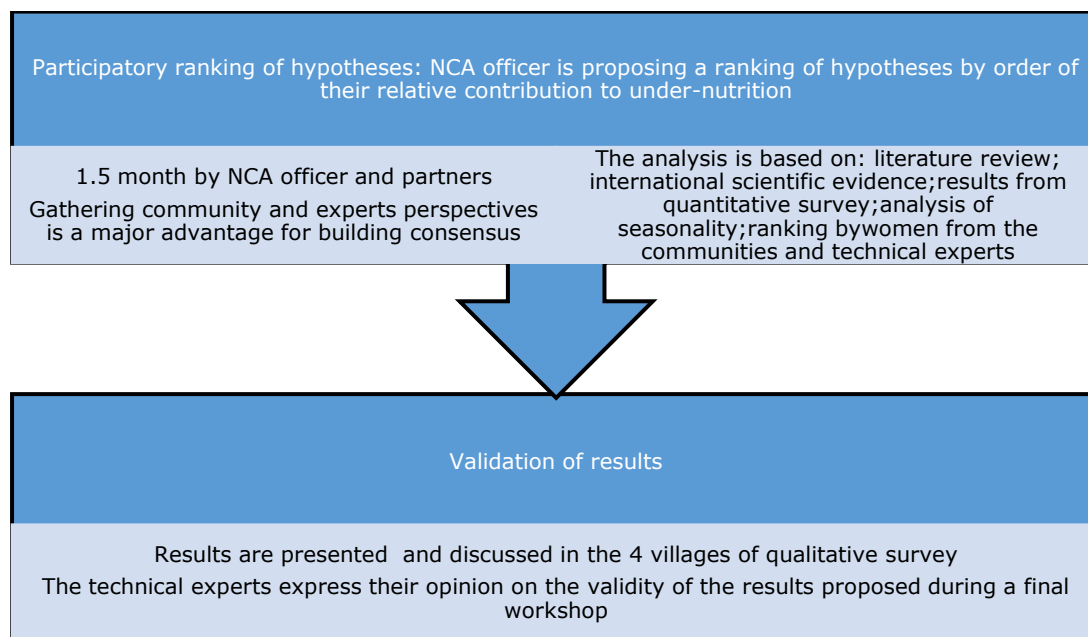


## 2. Expected outputs

- A literature review of existing studies
- Initial and Final workshop minutes that can be used as a summary report
- A Link NCA report including:
  - Identification of tested pathways and causes related to under-nutrition
  - Multi-sectorial Seasonal calendar
  - If needed: a nutrition survey and/or Risk Factors survey
  - Ranking of pathways validated by communities and technical experts
  - Recommendations

## 3. Main technical steps





#### 4. Glossary

##### Hypothesised risk factors and hypothesised pathways

A hypothesized risk factor refers to a specific risk factor (from the UNICEF framework of malnutrition causality) that is believed to relate to under-nutrition. The pathway through which the hypothesized risk factor is believed to affect under-nutrition is referred to as a "hypothesized pathway". A hypothesized pathway typically connects several risk factors, and represents the mechanism by which risk factors together result in under-nutrition. Once all hypothesized risk factors and pathways have been assessed through the Link NCA process, the results are no longer referred to using the term "hypothesized".



### Local Causal model

The local causal model is based on the UNICEF Framework for malnutrition. It is adapted to the context of each specific Link NCA study. The local causal model should only include risk factors that are believed to be effectively important in the local context. The local causal model should include all the outcomes of the causal hypothesis identified by the Link NCA.

### Nutrition Vulnerable Groups

The population studied within a single Link NCA can be heterogeneous in terms of available resources, access to social services but also in terms of practices and how these practices adapt to their environment.

“Nutrition vulnerable groups” designates groups of children that we believe are at risk of poor nutrition. Socially excluded individuals; individuals belonging to certain livelihood groups, and individuals who are physiologically vulnerable (E.g. children <2) or may be vulnerable, depending on the context. When the risk factors and pathways leading to malnutrition are likely to differ among various nutrition vulnerable groups, it can be helpful to stratify the sample so as to study each group separately.

### Risk factor survey

The Risk Factor Survey is, with the SMART nutrition survey, a component of the quantitative survey of the Link NCA. The objective of the Risk Factor Survey is to determine the prevalence of various risk factors of under-nutrition in the population studied. The methodology is very similar to a KAP survey (cross sectional survey design).

## 2. Link NCA in Moroto District, Karamoja, Uganda, 2016

### **1. Background of the study**

82 percent of the populations of Karamoja live in absolute poverty, compared to the national average of 31 per cent (World Bank, 2006). All human development indices show that the Karamoja sub region is one of the least developed parts of Uganda. Karamoja is affected by multiple **shocks and stresses**<sup>1</sup>.

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<sup>1</sup>- “Most of the communities and households are typically affected not by a single shock or stress but by a combination, or by a sequence that makes recovery between episodes difficult”. (*Resilience to food insecurity and malnutrition in Karamoja, Uganda, April 2015*) **Shocks**: erratic and uneven rainfall resulting in severe dry spells and flooding; outbreaks of livestock disease; crop pests and invasive species; high food prices. **Stresses**: livestock losses; youth disempowerment; weak community leadership; inadequate access to education and health services; inadequate access to water and sanitation; low agricultural productivity and services; violence, alcoholism and women’s disempowerment; negative social norms; land degradation and tensions. (*Resilience to food insecurity and malnutrition in Karamoja, Uganda, April 2015*)



The causes of malnutrition in the Moroto district are complex and multi-faced stemming from the region's harsh climate, remote location, high poverty rates and socio-economic inequalities. The latest food security and nutrition survey found that the Moroto district has the highest GAM rate (18%) of the 7 districts of the region, underweight at 31% and stunting at 32%. In January 2016, the latest report FNSA indicates that the situation in the Karamoja region and particularly in the Moroto district has deteriorated in the last 5 years. *"The trend of GAM in Karamoja over the last five years depicts a worsening situation"*. After 4 years of surveying the region (2012-2015), this is one major recommendation by the author: *"Since there seems to be no longer improvement in nutrition status indicators over the past five years, there is urgent need to review the implementation strategy for the current interventions"* (January 2016, FNSA, Karamoja region).

There is therefore an urgent need to understand in a more comprehensive manner the underlying causes of under-nutrition in the Moroto District to ensure a specific contextual analysis based on the specific vulnerabilities and needs of the population within the district. There is a clear need to come to a common, multi-sectoral understanding of the root causes of under-nutrition amongst all key stakeholders and provide a clear response in order for stakeholders to work collectively from a common framework so as to increase the impact of interventions on the under-nutrition situation.

## 2. Methodology used

After an extensive literature and data review, the Link NCA expert designed a preliminary local causal modal with a set of 25 hypothesized risk factors and the related pathways. Those findings were presented during an initial technical workshop held in Moroto on the 7th of March 2016. This event involved 25 technical experts from different backgrounds (WASH, Health, Nutrition, Food Security, MHCP). Together with the technical experts, the hypotheses were reviewed, confirmed or rejected. A list of 30 hypotheses was validated to be field-tested.

The sample size of the quantitative survey was designed following the NCA methodology. A preliminary sample was designed with ENA, and then the final sample size was designed on a household basis, according to the target population which was to be surveyed for the main indicators. The risk factors survey used a random cluster sampling method and clusters were selected with ENA accordingly to the Proportion Population Size (PPS). The selection of households was done following a two-stage or a three-stage cluster sampling method according to the size of the cluster. The size of the household was recorded for each family visited. The NCA being exclusive, only families with at





least one child under 59 months were fully interviewed. The targeted sample size consisted of 600 households (832 children under 5) within 30 clusters.

The RFS questionnaire was divided in four sections with different targets: household level (FSL and WASH and observation for water point), child 0-23, child 24-59, and caregiver questionnaire.

27 core indicators, 17 optional indicators and 4 local indicators were used to design the questionnaires. These indicators were chosen from the Link NCA indicators guidelines.

Among these 30 clusters, 4 were randomly selected for the qualitative survey. The population of the cluster was homogeneous and representative of the studied area and qualitative findings were gathered.

FGD methodology and life story interviews were used for the qualitative component. One week was spent in each village. FGDs topics were "understanding of malnutrition", "perception of good nutrition", "health status", "FSL status", "WASH situation and main issues", "Care practices behaviours" and "Mental Health issues". FGDs welcomed mothers of children less than 59 months (15/1 village: 60 women) in group sessions (4 days). Some other FGDs were organised in each village with fathers and grandfathers of children less than 59 months old (4 days). Interviews were done with key informants (10) community leaders (14) and mothers (4) of malnourished children.

A seasonal and historical calendar was designed for each and communities participated to rating exercises of the main hypotheses.

The Link NCA is based on the triangulation between scientific literature, quantitative data and NCA qualitative findings. Following the last technical workshop, the Link NCA report will be finalized.

### **3. Rating by the technical experts of the preliminary hypotheses (initial technical workshop)**

Technical experts individually rated the 25 original causal hypotheses from 1 (hypothesis believed to contribute marginally to under-nutrition) to 5 (hypothesis believed to be a major contributor to under-nutrition). 17 hypotheses were validated, 6 modified and 5 added. Original hypotheses (17) mainly got a very good confidence note with an average rating score of 3.57.



#### 4. Preliminary hypotheses

Major cause to under-nutrition	Inadequate infant and child feeding practices (introduction of solids, complementary feeding practices, and responsive feeding)	4,56
	High workload for mothers	4,33
	Poor practices of (initiation breastfeeding, exclusive breastfeeding)	4,06
Significant cause to under-nutrition	Poor sanitation and hygiene practices	3,94
	Poor health status of children under 5 (Ari prevalence, Diarrhea prevalence)	3,94
	High food access instability (5 months reported difficulties in accessing food, duration of the hunger gap)	3,89
	Poor hygiene practices in the household (food preparation and storage, solid waste management)	3,83
	Poor quality of drinking water (treatment)	3,83
	Role of education	3,72
	Low purchasing power	3,67
	Limited male-involvement in child care practices	3,61
	Low maternal nutritional status during pregnancy	3,61
	Early child bearing, high prevalence of teenage pregnancies	3,61
	Low utilization of ANC+ maternity and postnatal services	3,61
	Open defecation	3,61
	Dependancy	3,61
	Inadequate access to milk and animal products by the children and mothers	3,56
	Poor maternal well being (violence and alcohol)	3,56
	Mothers not supported, especially when women headed households	3,50
	Poor agriculture products	3,50
	High prevalence of Fever/malaria children 0-59 months	3,44
	Low Household livestock ownership	3,39
	Poor status of reproductive health (birth spacing and family planning)	3,39
	Poor utilization and maintenance of bed net	3,22
	Lack of caregiver's empowerment	3,22
	Poor chain water and quantity	3,11
	Distance to water resource and time needed to collect water are long	3,11
	Mental Health	3,00
	Minor cause to under-nutrition	Insufficient use of soap and substitutes
Insufficient income to cover transport costs to the nearest Health Center		2,39

## 5. Link NCA Expert rating grid

Source of information	Notes
Strength and consistency across contexts of association between the risk factor and under-nutrition (from the Pathways to Under-nutrition Scientific Literature)	<p><b>[-]</b> NA: only risk factors having a demonstrated association with under-nutrition are considered in the Pathways to under-nutrition Module</p> <p><b>[-]</b> Weak association has been demonstrated in many or few contexts</p> <p><b>[+]</b> Medium strength association has been demonstrated in few contexts</p> <p><b>[++]</b> Medium strength association demonstrated in many contexts OR strong association demonstrated in few contexts</p> <p><b>[+++]</b> Strong associations demonstrated in most contexts or an association demonstrated in the particular context of the Link NCA</p>
Seasonality and medium-term trends of risk factor related to seasonality and medium-term trends of under-nutrition	<p><b>[-]</b> The seasonal variation and medium-term trend of the prevalence of the risk factor does not correspond to the seasonal variation and medium-term trends of the under-nutrition outcome considered.</p> <p><b>[+]</b> No seasonal variation of the risk factor OR No contradiction observed.</p> <p><b>[++]</b> The seasonal variations of risk factor and under-nutrition are as expected.</p> <p><b>[+++]</b> The seasonal peak(s) of prevalence of the risk factor matches with the seasonal peak(s) of the under-nutrition outcome considered.</p>
Participatory rating exercise with community	<p><b>[-]</b> The risk factor is rarely or never mentioned in the rating exercise</p> <p><b>[+]</b> The risk factor is irregularly mentioned as one of the top 5 risk factors</p> <p><b>[++]</b> The risk factor is regularly mentioned as one of the top 5 risk factors</p> <p><b>[+++]</b> The risk factor is consistently mentioned as one of the top 3 risk factors</p>
Category	Criteria
Major risk factor	<p>No contradictory information</p> <p><b>AND</b></p> <p>Strength of association from literature review is classified as [++] or [+++]</p> <p><b>AND</b></p> <p>Majority of [++] or [+++] for all other sources of information</p>
Important risk factor	<p>A minor amount of contradictory information exists</p> <p><b>AND</b></p> <p>Strength of association from literature review is classified as [++] or [+++]</p> <p><b>AND</b></p> <p>Majority of [++] or [+++] for all other sources of information</p>
Minor risk factor	<p>A moderate level of contradictory information is permitted</p> <p><b>AND</b></p> <p>Strength of association from literature review is classified as [+] or [++]</p> <p><b>AND</b></p> <p>Majority of [+] for all other sources of information</p>
Rejected risk factor	<p>No contradictory information</p> <p><b>AND</b></p> <p>Majority of [-] or [+] for all sources of information</p>
Untested risk factor	<p>Contradictory information</p> <p><b>AND / OR</b></p> <p>Information gathered not complete or not available</p>



## 6. Link NCA Expert preliminary rating

Risk factors	Prevalence from secondary data/RFS NCA	Strength of association with under-nutrition from literature review	Seasonality of risk factor	Findings from the qualitative survey	Community rating exercise	Interpretation
Inadequate infant and child feeding practices (introduction of solids, complementary feeding practices, and responsive feeding). 1.	++	+++	+	++	++	Major
High workload for mothers 2.	++	++	+++	+++	++	Major
Poor practices of (initiation breastfeeding, exclusive breastfeeding). 3.	+++	+++	+	+++	++	Major
Poor sanitation and hygiene practices. 4.	+++	+++	+	++	++	Major
Poor health status of children under 5 (Ari prevalence, Diarrhoea prevalence). 5.	+++	+++	++	+++	++	Major
High food access instability (5 months reported difficulties in accessing food, duration of the hunger gap. 6.	+++	+++	+++	+++	++	Major
Poor hygiene practices in the household (food preparation and storage, solid waste management). 7.	+++	+++		+++	++	Major
Poor quality of drinking water (treatment). 8.	+++	+++		+		Important
Role of Education. 9.	++	+++		++	+	Important
Low purchasing power. 10.	+++	++	+++	+++	+++	Major
Limited male-involvement in child care practices. 11.				+	+	Minor
Low maternal nutritional status during pregnancy. 12.	+++	+++	++	+++	+++	Major
Early child bearing, high prevalence of teenage pregnancies. 13.	++	+++		++	+	Major
Low utilization of ANC+ maternity and postnatal services. 14.	+	+++	+	+	+	Important



Open defecation. 15.	+++	+++			+	Important
Dependency. 16.				-	-	Untested
Inadequate access to milk and animal products by the children and mothers. 17.	+++	+++	+	++	+++	Important
Poor maternal well being (violence and alcohol). 18.	++	+	+	+++	+	Important
Mothers not supported, especially when women headed households. 19.	++	+		++	+	Important
Poor agriculture products. 20.		++	+++	++	+++	Structural changes
High prevalence of Fever/malaria children 0-59 months. 21.	+++	+++	++	+	++	Major
Low Household livestock ownership. 22.		++		+++	++	Structural changes
Poor status of reproductive health (birth spacing and family planning). 23.	+++			++	+++	Major
Poor utilization and maintenance of bed net. 24.	+	++		+		Important
Lack of caregiver's empowerment. 25.	+					Important
Poor chain water and quantity. 26.	+			+		Important
Distance to water resource and time needed to collect water are long. 27.		+				Minor
Mental Health. 28.				+	+	Important
Insufficient use of soap and substitutes. 29.	+	++		++		Important
Insufficient income to cover transport costs to the nearest Health Centre. 30.	++	++	+	++	++	Important