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NUTRITION CAUSAL ANALYSIS

European Commission

ACTION CONTRE LA FAIM

INDIA
KHAKNAR BLOCK, BURHANPUR DISTRICT OF MADHYA PRADESH
2014

METHOD FOR CONDUCTING
A NUTRITION CAUSAL ANALYSIS
CASE STUDY

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WHAT IS LINK NCA ?

The Link NCA (Nutrition Causal Analysis) method, based on the UNICEF conceptual framework on the causes of undernutrition, was developed by Action Contre la Faim/ Action Against Hunger and a small group of researchers and technical experts. It was then validated by a multidisciplinary scientific committee and field tested in Bangladesh and Zimbabwe in 2010/11. Results were gathered, again in Burkina Faso in 2012. The methodology is a standardized means of analyzing the multi-causality of malnutrition. The process is a multisectoral, mixed-method approach which draws conclusions from a synthesis of results on nutrition causality. Link NCA relies on qualitative methods, which are incorporated throughout the process and quantitative methods from secondary data, SMART analyses and risk factor surveys. It does not however, seek to statistically demonstrate causality but rather to create a consensus around the possible causes of undernutrition in a local context.

The Link NCA is a structured, participatory, holistic and multisectoral study that seeks to:

- Link stakeholders across different sectors,

- Link risk factors and under-nutrition to identify pathways,

- Link different sources of information to build a case for nutrition causality,

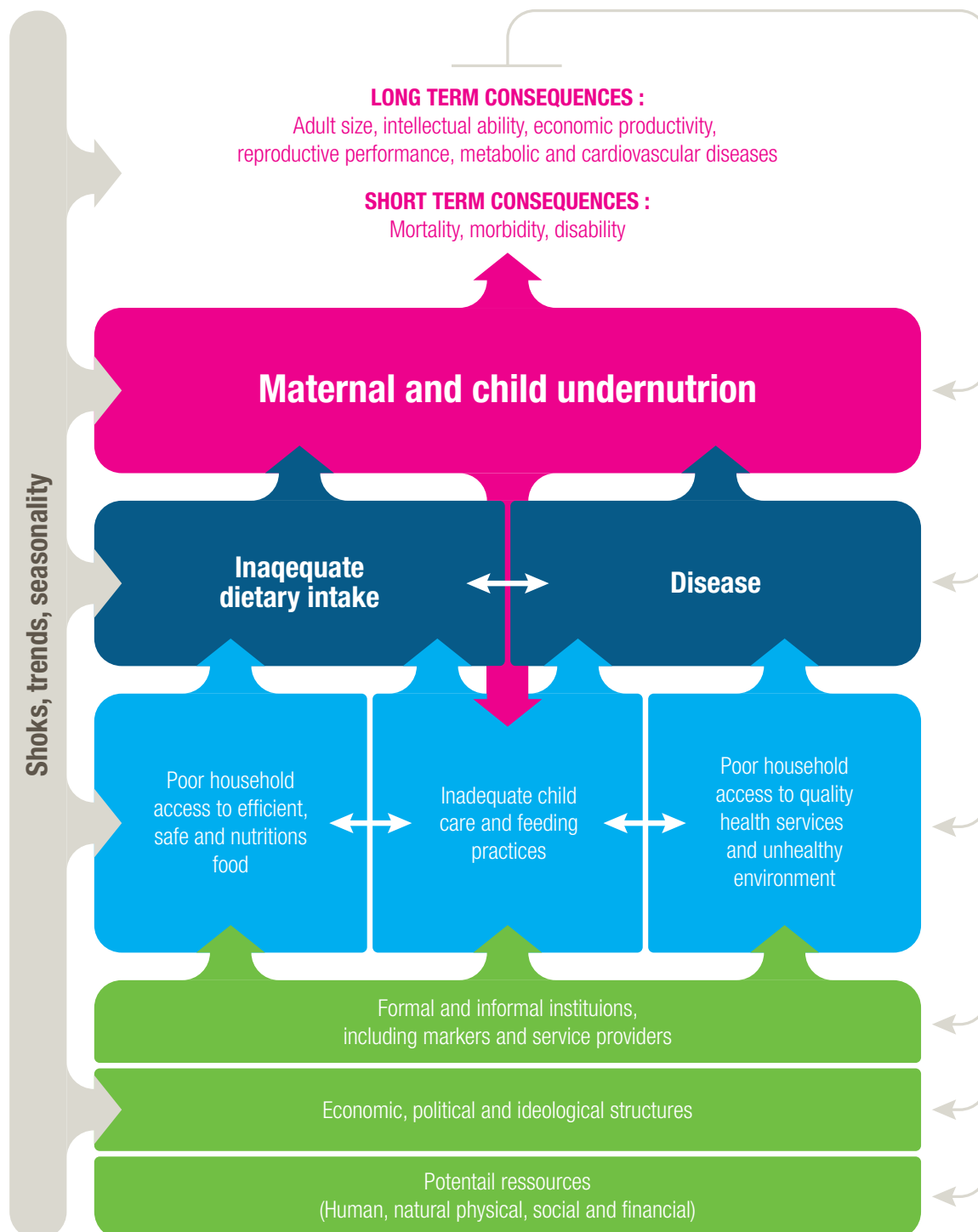- Link the causal analysis to a programmatic response.

To fulfill the criteria of being structured, local and operationally feasible each Link NCA aims to answer the following 6 study questions:

1. What is the prevalence and severity of wasting and/ or stunting in the study population?

2. What is the prevalence of known risk factors for undernutrition among the population and key "nutrition vulnerable groups"?

3. What are the causal pathways of undernutrition by which certain children in the population have become stunted and/or wasted?

4. How have the stunting and/or wasting in this population and its causes changed a) over time due to historical trends, b) seasonally due to cyclical trends, c) due to recent shocks?

5. Which causal pathways are likely to explain most cases of under-nutrition? Which sets of risk factors and pathways are likely to be the most modifiable by stakeholders within a given context and within a given period?

6. Based on the causal analysis results, how can the analysis be linked to programmatic responses?

By implementing the Link NCA process, multi-disciplinary stakeholders will be able to generate a consensus of plausible causes of undernutrition in a local context, as well as a set of agreed upon recommendations for the next steps to improving nutrition security programming in the locality.

To learn more go to **linknca.org**

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LONG TERM CONSEQUENCES :
Adult size, intellectual ability, economic productivity,
reproductive performance, metabolic and cardiovascular diseases

SHORT TERM CONSEQUENCES :
Mortality, morbidity, disability

Shoks, trends, seasonality

Maternal and child undernutrion

Inaqequate dietary intake

Disease

Poor household access to efficient, safe and nutritions food

Inadequate child care and feeding practices

Poor household access to quality health services and unhealthy environment

Formal and informal instituions, including markers and service providers

Economic, political and ideological structures

Potentail ressources
(Human, natural physical, social and financial)

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LINK NCA INDIA

STUDY BACKGROUND AND CONTEXT

Action Against Hunger has been working in India since 2011 with interventions in Baran district of Rajasthan and in Burhanpur district of Madhya Pradesh since 2012. Action Against Hunger's work in India focuses on prevention and treatment of acute malnutrition.

In the Burhanpur district, block of Khaknar, Action Against Hunger works closely with the National Health Mission (NHM) and the Integrated Child Development Services (ICDS), specifically focusing on preventing, detecting and referring children with SAM (Severe Acute Malnutrition) to nutrition rehabilitation centers (NRCs), as well as follow ups with an integrated IYCF (Severe Acute Malnutrition) approach. Action Against Hunger equally strengthens the capacity of local partners such as government workers and NCR's to help prevent SAM and treat children suffering from wasting.

The Indian government has taken action against malnutrition including: opening NRCs (National Nutrition Council National Capital Region) in hospitals and community health centers, strengthening integrated child development services (ICDS) and conducting educational sessions targeting basic nutrition, food safety and feeding practices. Although the ICDS programs have provided positive results, the absence of a proper CMAM (Community-based Management of Acute Malnutrition) program at the time of the study was regrettable. Child undernutrition still remains a major public health issue in India. Former Prime Minister Manmohan Singh even declared in 2009 that undernutrition issues were a "national shame"[1].

No significant hunger gap has been observed as food production ensures sustenance throughout most of the year. Yet, the zone has persistently high levels of Global Acute Malnutrition (GAM) prevalence. Confirming past studies, SMART surveys conducted by Action Against Hunger in 2013 and 2014 revealed alarming rates of malnutrition in Khaknar block (November 2013 GAM 24.6% [20.4%-29.3%-95% CI], SAM 3.4% [1.9%-6.1%-95% CI], June 2014 GAM 34.7% [30.6%-38.8%-95% CI], SAM 4.7% [3.3%-6.0%-95% CI]). ACF India had been working in the zone for nearly 2 years and because of limited means to treat of wasting, revealing the exact causes of malnutrition was critical. Action Against Hunger therefore launched a Link NCA study, financed by ECHO, to determine the underlying causes and risk factors for under-nutrition in Khaknar Block.

The Link NCA was conducted over 5 months between April-August, 2014 at the end of the lean season, in four phases:

Preparatory Phase

The first step focused on a literature and data review of existing sources. This was part of the preparatory phase conducted to determine the necessity and feasibility for all potential Link NCAs. There were also preliminary stakeholder interviews with Community Health and Nutrition Workers (CHNW) and NRC staff, which were undertaken to generate an overall understanding of the local undernutrition context and to develop a set of local causal hypotheses of undernutrition.

### Developing Nutrition Causal Hypotheses

The next step was to develop hypotheses for the causes of undernutrition in Khaknar, with the information gathered from the first phase. These hypotheses were validated to be tested by technical experts during a technical workshop held on the 9th May 2014 in New Delhi.

Community Level Data Collection

Qualitative enquiries (Observations, FGD (Focus Group Discussion), KII's) and quantitative surveys were carried out between May-June, 2014 in order to validate causal hypotheses and potential risk factors developed during the second phase.

Building Consensus and Prioritizing Undernutrition Causes

After the data collection, the hypotheses were validated by the local community and then ranked according to importance, while paying careful attention to historical variations and vulnerable groups. A consensus was reached during a technical workshop on July 18th, 2014, when outcomes were discussed with stake-holders and experts from multisector social sciences, WASH (Water Sanitation and Hygiene), Health/nutrition and food security. A sequential, participatory process was employed to build consensus around the plausible causes of undernutrition in Khaknar Block.

India

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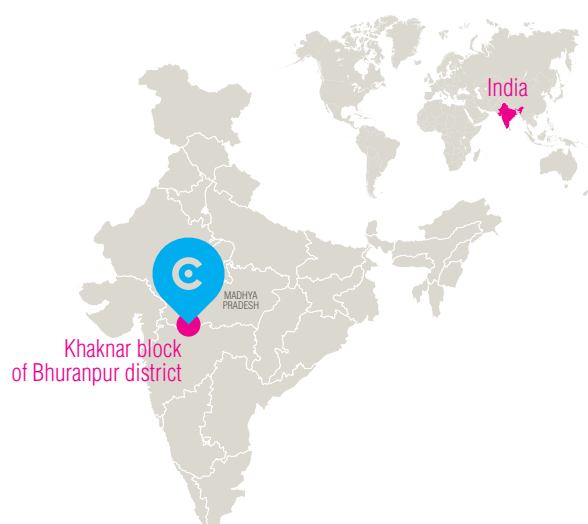
1) Link NCA Nutrition Causal Analysis April-August 2014 Khaknar Block, Burhanpur, Madhya Pradesh, India, Blanche Mattern, NCA Expert of understanding of the causes of child

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LINK NCA PROCESS IN INDIA: THE CHALLENGE OF STUDYING UNDERNUTRITION IN INDIA

The Link NCA team met numerous methodological challenges in India. These difficulties encountered in India are important to analyze leassons learnt for future Link NCA's in similarly complex contexts. Overcoming these obstacles showed that the Link NCA methodology is flexible enough to be adapted a multifaceted reality.

India is a vast country with a subsantial population (1.3 billion)[2] and extremely heterogeneous, which inadvertently makes the analysis of the causes of undernutrition more challenging. Among existing social constructs is the complicated and ancient social hierarchy called the caste system. This complex social organization officially designates historically disadvantaged local groups such as Scheduled Castes (SCs) and Scheduled Tribes (STs), who receive aid from the government. Other Backward Class (OBC), a caste which comprised 41% of the population in 2006, contains underprivileged groups, although not all OBC castes receive aid. Much depends on the exact social standing based on religion or tribal status within the complicated hierarchy. Forward caste groups do not qualify for any aid from official channels and are considered less disadvantaged.

Although the Indian constitution officially banned caste discrimination following the end of British colonial rule, prejudice based on social status very much exists and can possibly have an impact on nutrition in India. It should be noted that although Madhya Pradesh is not completely devoid of this form of discrimination it is experienced to a lesser degree. For this reason the Khaknar block is considered a mixed tribal zone with heterogeneous practices, but which seems to be based on factors linked with geographic proximity rather than social characteristics. The causes of undernutrition are not just numerous and multi-dimensional, but are also intricately linked to different groups and their practices. This element should be taken into account when implementing nutrition causal analyses.

There are also other social components which make the Indian landscape appear especially heterogeneous, such as religion. The predominant Hindu and Islam populations could possibly have different feeding and care practices on a familial or individual basis, thereby affecting nutrition in each community differently. Social characteristics can potentially define risk factors in Khaknar Block such as: livelihoods, access to food and safe drinking water, general health of the mother and child and child rearing practices.

For reasons which will be explained in the following section the two primary religions and different groups were determined to have similar practices, thus revealing the cultural landscape of Khaknar Block to be less complicated and more homogenous, in terms of nutrition, than it appeared.

Practices were concluded to be based on adaptation to climate, food availability and land access than social structure.

If causal pathways are too varied in a given context it can become problematic or even impossible to study undernutrition according to the Link NCA process. Some hypothesis may apply to some groups and not others or may apply even on an individual level. It becomes a question of feasibility and ability to study many groups with many different causes of malnutrition in a limited amount of time. It is crucial to have an in depth contextual understanding of major factors for undernutrition during the preparatory phase, in order to determine if a Link NCA is feasible or needed. Another factor such as migration, which is heavily present in the zone, further complicates nutrition analyses. Migration was recognized as an important dynamic and was studied in its relation to malnutrition. More research is needed to determine exact relations.

By operating in the study zone, at a village level, Action Against Hunger was able to determine beforehand that although the Indian landscape seems very socially heterogeneous, the causes of undernutrition are generally homogenous in the Khaknar block. In this specific context it was possible to study all groups in the same manner as they generally face the same problems concerning diet and food access and availability.

FOOD SECURITY AND LIVELIHOODS

Another challenge was encountered and overcome while employing the risk factor survey (RFS) in the 32 chosen clusters. The Link NCA indicator guide (the basis for the Risk Factor Survey) was developed as a tool to help conduct surveys that are flexible enough to apply to any context where a Link NCA could potentially be carried out. The RFS was implemented in this case to supplement existing quantitative studies and to triangulate data with the Link NCA qualitative findings.

Quantitatively food security and livelihood indicators seek to accurately measure food availability, access, utilization and intake, which have been recognized to be major determinants of undernutrition in other local contexts. Quantitative indicators such as the Individual Diet Diversity Score (IDDS)

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or the Food Consumption Score (FCS) are not designed to be used within a primarily vegetarian population, as their calculations are based on food categories, which include non-vegetarian items. The scores that reflect Diet Diversity (DD) are key elements to any comprehensive analysis of the food security situation at the individual, household or community level.

IDDS is often used to measure the nutritional quality of an individual's diet, notably for children. An IDDS is considered appropriate when at least 4 of 7 groups are consumed. Considering the predominant part of vegetarian among the population and taking into account all food groups (7), a first analysis gave a "picture" of the limitations of meat and fish consumption within the population (n=313, 3.83% [1.1 – 6.56%; CI 95%]). This analysis and further discussions allowed for a better understanding of vegetarian food consumption. Accordingly, a score with at least 3 out of 7 food groups in the last 24 hours was considered acceptable, for a vegetarian diet for the age group 6-23 months.

As the index did not account for a purely vegetarian diet, the scale was adapted to the context by looking at eating habits and practices and creating different thresholds for food groups consumed daily. A second analysis, based on only 6 food groups gave better figures: n=313, 14.7% [10.28 – 19.12%, CI 95%]. The last results should be taken with caution, but seemed to more accurately reflect the local context.

The Link NCA methodology was equally adapted during the qualitative focus group discussions (FGD) to confirm, in part, if various social groups had similar practices. FGD were designed following castes and tribal determinants, socio-economic status and familial status (mothers, grand-mothers, fathers & grand-fathers), with some non-mixed and some mixed groups. This set-up made it possible to identify different existing dynamics amongst different groups. These sessions welcomed landless or migrant participants. Once the participants were identified, the discussions was adapted to study those different situations. From these adapted Focus Group Discussion (FGD), it was determined that there are general care practices in the study zone with certain specificities and dynamics between groups.

It was ascertained during FGD's that most households depend on grain, cereals, and pulses which together represent the foundation of their vegetarian diet. These findings were substantiated by the RFS outcomes. The Food Consumption Score revealed that 75.46% (n=766 [67.97 – 82.94% - 95%) of the studied population had acceptable food consumption, meaning that the remaining 25% had unacceptable food consumption.

The FSC is a composite score based on dietary diversity, food frequency, and the relative nutritional importance of different food groups. It is an indicator to measure the nutritional adequacy of the food consumed at the household level. It should be acknowledged however that the FCS showed some limitations as the ranking of each food group does not take into account that some food products could be "over-consumed" (i.e. grains, pulses) to compensate for foods not included in their diets such as: meat, fish and eggs. This might give an overestimation of the global score, resulting in an overestimation of food consumption.

The FGD's were able to further complement the RFS by establishing that a vegetarian diet is a predominant practice throughout the study zone. Globally, Hindus are culturally vegetarians while Muslims are not. Muslims in the Khaknar block have nevertheless primarily vegetarian diets. All socio-economic groups in addition, seemed to have adopted a vegetarian diet. A likely explanation for this occurrence is that the whole population is not vegetarian by choice but because they adapted to the local context and adopted a different diet conforming to the limited access to meat and fish products.

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FOOD SECURITY & INADEQUATE FOOD ACCESS

Focus groups conveyed that food access, especially to fresh products (fruits and vegetables) is a problem affecting food security in Khaknar Block. Access is restricted to as little as one market-day a week with limited or no access to other markets during the rest of the week. Although there are itinerant food vendors in the area, their prices are not affordable for many and this is not a viable alternative for most households. Due to poor food access, many households are not able to consume fruits and vegetables on a daily basis, leading to poor diet diversity. As most of the population practices a vegetarian diet based on grains, pulses and fruits and vegetables, regular access to fresh products is especially important.

Food conservation is very difficult during summer months, when temperatures are elevated. Women cook early in the morning and food can spoil by midafternoon from high temperatures. Fruits and vegetables spoil particularly quickly, despite efforts to store fresh produce in covered baskets. During the summer fruits and vegetables are less available and as a result market prices for fresh produce increases. This seasonality directly impacts children's diets as they principally eat grains instead of the unavailable fruits and vegetables, which has a major impact on nutrition.

Food availability is directly linked with agricultural production. India achieved food security in terms of quantity decades ago. Food products such as rice, pulses and sugar are provided through the Public Distribution System (PDS). Food diversity remains an issue. Adequate Household Food Provisioning (AHFP or MAHFP) indicators showed that households had access to food 11.5 months of the year on average. Qualitative enquiries showed that landowners preferred to sell their crops to manage daily expenses. Land owners prefer to grow cash crops such as cotton and cultivate soy and sugar cane for their own use. Households will sell as much as possible and only eat whatever remains.

The absence of Below Poverty Line (BPL) ration cards has been linked with poor food access. Most interviewed households possessed a card, yet low income families without cards cannot access "faire price" PDS foods and may be forced to pay elevated prices. The distribution and process to obtain BLP cards is inefficient however many of the most at risk families do not receive cards. Some are forced to buy them (BPL cards can cost up to INR 1,500-2,000) while they are supposed to be free.

MIGRATION IN KHAKNAR BLOCK: A MULTISECTORAL DYNAMIC IMPACTING NUTRITION

Two migration patterns (traditional and new migrants) play an important role in the livelihoods of the Khaknar block. Seasonal migration is a strategy to improve household's well-being. The Link NCA determined that migration is related to land ownership, unemployment and low income. The Link NCA confirmed that seasonal migration has become a durable component of livelihood strategies in the Khaknar block. The interstate migration cycle is structured. Work in brick factories or on farms takes place during the dry season starting in November and worker return during the monsoon season, between March and June to harvest local crops. Most households depend on agricultural labor (69.9%[3]).

According to the RFS, 60% of the block population is landless. The qualitative analysis revealed that nearly all migrants are landless. The agricultural sector is heavily dependent on the rain fall levels. Late or atypical precipitations impact cash crops and family incomes. Seasonal migrants who are landless or without the means to endure the dry season, are forced to seek manual labor in nearby states such as Gujarat or Maharashtra. Poor application of the Tha Mahatma Gandhi National Rural Employment Act 2005 (MGNREGA), an Indian labor law and social security measure which provides 100 payed days' work per year to adult volunteers in rural zones, was considered a pathway to low income. Locals are not confident in the program (late payment and poorly adapted work for participants) and may choose or be forced, without an adequate application of the Act, to migrate in order to find work.

Social networks are crucial to traditional migration patterns which follow old, established routes and are supported by host communities. Occasional migrants do not benefit from existing social structures while migrating, making them vulnerable to external shocks and stresses. Migration is directly and indirectly linked to undernutrition. Caregivers have a higher workload during migration season and have less time to feed their children or to seek medical care. Caregiver's well-being is poor as mothers feel isolated from their children and often have inadequate lodging during migration. Occasional migrants can be trapped in negative migration patterns. Highly dependant on contractors, they can be trapped in debt cycles from one year to the next.

3) National Institute of Nutrition, Hyderabad, 2011. Assessment of Nutritional Status of under-five year rural children in the Districts of Madhya Pradesh State, District: Burhanpur.

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LINK NCA RESPONSE AND RECOMMENDATIONS

ADVOCACY RESPONSE AND RECOMMENDATIONS

The Link NCA findings had several noteworthy impacts on nutrition responses in India. Results contributed both theoretical and practical knowledge of nutrition in Khaknar block. Operationally, analysis outcomes aided the government and various nutrition organizations (including Action Against Hunger) to plan and execute intervention strategies for improving undernutrition in a holistic manner. A portion of the information was already known to Action Against Hunger but findings helped to corroborate and formalize important data which was then distributed at the national level. Results were used to restructure the strategy of Action Against Hunger on Infant and Young Child Feeding in Khaknar block. Inadequate complementary feeding practices and inappropriate breastfeeding practices are both determined to be major risk factors for undernutrition.

Many causal pathways were linked with the poor application of existing programs meant to alleviate malnutrition and poverty and generate livelihoods. The results have been used to develop recommendations for an advocacy response, targeting food security, livelihoods and other multisector risk factors to promote a better understanding of the role and dynamics of existing programs and their implementation.

FOOD SECURITY & LIVELIHOODS RECOMMENDATIONS

The food distribution structure (PDS) established under the Ministry of Consumer Affairs, Food and Public Distribution has its roots in the rationing system implemented by the British during World War II. Jointly managed by the state government and the Food Corporation of India (government entity), through an elaborate network of Fair Price Shops, the PDS is meant to provide basic food and non-food items to eligible low income households. There is generally good access to rice, grains and pulses through the PDS, but food diversification is inadequate and can negatively affect nutrition. Food quality is also a problem and is frequently unacceptable for nutrition needs.

Recommendation: Advocate for better diversification and quality of cereals and legumes provided by Public System Distribution shops.

Poor application of the MGNREGA has been linked to low income, as locals are reluctant to participate in the program and are unable to cope with day to day expenses while waiting for payment. Locals may even choose to migrate to work as an alternative.

Recommendation: Advocate for an improved application and operation of the MNREGA, especially to reduce payment times for participants and offer more adapted work opportunities.

The inefficient distribution of Below Poverty Lines (BPL) cards and corruption in the form of extortion and bribes throughout the system mean that the cards do not always reach those who need them most. The absence of BPL cards among low income families impacts their access to reasonably priced grains and pulses, items that are the base of their diet. This has a major impact on nutrition.

Recommendation: Conduct additional research on local allocation of BPL ration cards in order to better understand existing limits and advocate for better distribution and limiting corruption.

Land ownership is a complex problem in Khaknar block. Landlessness has been linked with unemployment or limited employment and limited income and livelihoods. Land provides an important livelihood (agriculture) that is unavailable to the 60% of the block who are landless. Landlessness is also heavily linked with migration as those without the financial means to last through the dry season are forced to migrate seeking manual labor.

Recommendation: Connect with NGOs working on land issues to advocate for improved land distribution.

CROSS-CUTTING ISSUES RECOMMENDATIONS

Migration, as identified in the Link NCA findings is a multisector dynamic affecting many aspects of nutritional security, directly and indirectly impacting undernutrition in Khaknar block.

Recommendation: Identify positive coping mechanisms of traditional migrants to complement the Assisting Behavior Change (ABC) strategy toward health and care practices for migrants.

The Indian constitution banned caste discrimination following the end of British colonial rule. In 1950, authorities allocated financial and benefits for those determined to be in most need. Caste discrimination is still very much a part of Indian society however.

Recommendation: Carry out additional research in order to better understand caste discrimination and its impact on poverty and under-nutrition.

Caste discrimination was identified to be less intense in Khaknar block, though internal micro discrimination between groups within castes was observed.

Recommendation: Conduct further research to better understand caste and tribal subdivisions.
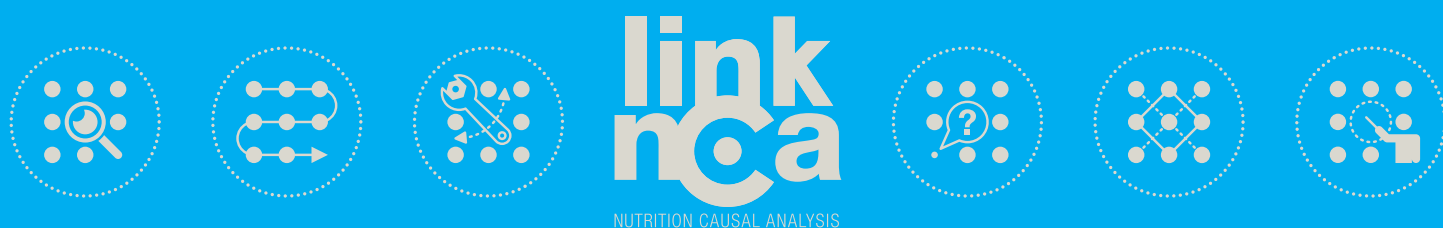
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For further information about the design
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www.linknca.org

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