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Concern's Knowledge Quarterly Review

KNOWLEDGE MATTERS

Special Issue: The Prevention of Undernutrition

CONCERN worldwide

Any contributions, ideas or topics for future issues of knowledge matters. Contact the editorial team on email: knowledgematters@concern.net

The views expressed are the authors' and do not necessarily coincide with those of Concern Worldwide or its partners.

Cover Image: The photo shows Tarchisia Severin Nyenza (wearing the cap) talking to a group of farmers as part of the farmer field school approach, Magunga Village, Iringa District, Tanzania. August 2014. Photo by Jonas Kamala, 2014.

For more on the farmer field school approach see the article by Martha Maguire and George Mutembei Mutwiri.

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From the Issue Editor

Welcome to this special thematic edition of Knowledge Matters. Coinciding with World Food Day and the launch of the 2014 Global Hunger Index: The Challenge of Hidden Hunger, this issue focuses on the prevention of undernutrition. To mark this connection with the GHI, this issue also features an article from our Alliance2015 partner Welthungerhilfe.

Concern's core mission is to make sustainable improvements in the lives of the extreme poor. Chief among these improvements is the eradication of all forms of hunger and child undernutrition, which are both causes and consequences of poverty. Concern's current organisational plan (2011 – 2015) is centred on specific objectives to increase our impact in the areas of hunger and health.

The article from Ros Tamming outlines how Concern understands and programmes around prevention of undernutrition. It notes how over the past five years, in addition to continuing our work on treatment of acute malnutrition, we have increasingly been involved in programming around preventing undernutrition.

Country articles present experiences on a variety of relevant areas, from the role of Inter-sectoral coordination in Zambia, integrated agriculture and nutrition programming in Rwanda, to using the care group model in Uganda. While many countries are at the early stages of moving towards more integrated programmes, some key lessons and learning are already beginning to become clear.

We hope that you will find the articles informative and of practical use.

Jennifer Thompson

Foreword

By Rosalyn Tamming

This edition of Knowledge Matters is being published to coincide with the launch of the 2014 Global Hunger Index. The theme of this year's edition is Hidden Hunger which refers to micronutrient deficiencies. It features an article on our RAIN project in Zambia. However, because we don't programme directly in the area of micronutrient deficiencies, we decided to bring together our collective experience to date on our 'prevention of undernutrition' programmes which indirectly have an impact on micronutrient deficiencies.

If they grow it, will they eat it? This is the title of a paper produced by our partner the International Food Policy Research Institute (IFPRI) on our Realigning Agriculture to Improve Nutrition (RAIN) project in Zambia. This title epitomises the assumptions that we frequently make in relation to agriculture's impact on nutrition. We assume that by providing a greater quantity and quality of food that the nutrition of the family will improve. However, this is not always the case, particularly for children.

We see this in the paper from Tanzania which shows that in the 'Bread Basket of Africa' over half of children are stunted. There are multiple reasons, from poor health, poor hygiene and sanitation, lack of access to clean water and poor caring practices. Of course in some instances it is also lack of access to good quality food but usually it is not this alone that contributes to acute and chronic malnutrition. Gender inequality is also a contributing factor. We know, for example, that women who have more control over household resources tend to make better decisions for the family for example around nutrition, than men.

Our programmes are increasingly tackling the multiple factors that impact on stunting and the papers included from Burundi, Kenya, Tanzania, Mozambique, Rwanda, Malawi, Uganda, and Zambia all describe how they are doing this. The first paper in this edition lays out Concern's understanding and approach to the prevention of undernutrition which includes both acute and chronic malnutrition.

> You will see repeated references throughout the articles to the Care Group approach and other behaviour change approaches, which is evidence of the focus that the organisation has put on social and behaviour change training and support over the past few years

There are no results of our impact on stunting in this edition. While most programmes aim to have an impact on stunting, the outcome indicators of some programmes focus on proxy indicators such as diet diversity. For those that have stunting as a specific outcome, it is too early to measure the effectiveness of the programmes. We hope to have results from RAIN at the end of 2015.

You will see repeated references throughout the articles to the Care Group approach and other behaviour change approaches, which is evidence of the focus that the organization has put on social and behaviour change training and support over the past few years.

Also included is the description of our urban project in Kenya which has worked to produce indicators of poverty and food security for an urban area. This is ground breaking work as there is currently limited data on urban indicators exist. We are pleased to include a paper from our Alliance 2015 partner Welthungerhilfe. In it they describe their Fight Hunger First Initiative (FHFI) which applies a rights based approach to addressing the challenge of undernutrition in India. We hope to bring you more experiences from Alliance partners in future papers.

Don't forget your Strategy, Advocacy and Learning advisers are available to support you in developing your programmes and providing technical assistance in all the sectoral areas and monitoring and evaluation. We look forward to producing another issue of Knowledge Matters in a few years presenting all the results from these programmes and demonstrating our impact on the prevention of undernutrition in Africa. Finally, I want to thank all those who have made the current issue of Knowledge Matters a reality.

How Concern understands and programmes around prevention of undernutrition

By Rosalyn Tamming

Introduction

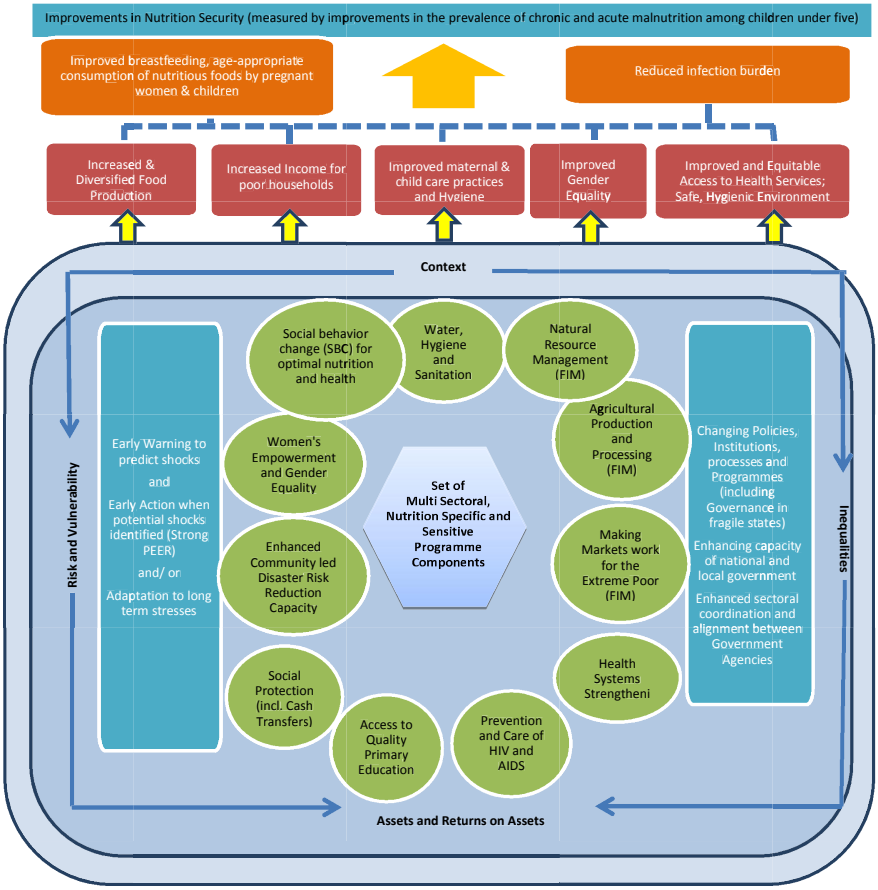
Over the last decade, Concern has developed a reputation around its work in the treatment of acute malnutrition[1]. Over the past five years, in addition to continuing this work, we have increasingly been involved in programming around the prevention of undernutrition.

Malnutrition is a term that encompasses both undernutrition and obesity. Our work to date, based on the needs of the poorest with whom we work, has not identified obesity as a priority and thus we have not programmed in this area. Undernutrition is defined as the outcome of insufficient food intake and repeated infectious diseases. It includes being underweight for one's age, too short for one's age (stunted), dangerously thin for one's height (wasted) and deficient in vitamins and minerals (micronutrient malnutrition) [2]. These often overlap – for example, a stunted child may also be wasted and have micronutrient deficiencies. Undernutrition is usually measured by anthropometric indices (taking a child's weight and height and age). Measuring micronutrient deficiencies is more difficult as it frequently involves measuring blood biomarkers.

Nutrition specific programmes address the immediate fetal and child nutrition and development needs whereas nutrition sensitive programmes are a more long term strategy and address the underlying determinants of undernutrition. Figure 1 outlines Concern's framework for tackling undernutrition, which originated from the United Nations Children's Fund (UNICEF's) causal framework of undernutrition, and highlights that a multi-sectoral approach is required to sustainably reduce morbidity and mortality in children. The overall goal is improved nutrition security as measured by a reduction in the prevalence of acute and chronic malnutrition of children under five.

The framework contains a number of multi-sectoral nutrition sensitive and specific programme components that are combined depending on the needs and priorities of the particular context. This framework embeds Concern's Understanding of Extreme Poverty[3].

Figure 1: Concern's Prevention of Undernutrition Framework



Thanks to the Scaling Up Nutrition (SUN) movement, understanding of the interdependence between various sectors has increased with governments, UN agencies and NGOs committed to accelerating progress in reducing maternal and child undernutrition by combining their efforts across sectors and by promoting interventions from household level through to national level. The goal is to optimise nutrition during the first 1,000 days of a child's life, from pregnancy to the child's second birthday, and therefore reduce the prevalence of stunting.

Box 1: Key terms

- **Chronic Malnutrition:** Often used to refer to stunting but actually includes stunting, underweight and micronutrient deficiencies
- **Malnutrition:** a global problem that encompasses undernutrition and overnutrition
- **Micronutrient Deficiencies:** a form of undernutrition where intake of vitamins and minerals is too low to sustain good health and development due to poor diet or disease. Often referred to as Hidden Hunger
- **Nutrition Sensitive Programmes:** Programmes that addresses the underlying determinants of fetal and child nutrition and development
- **Nutrition Specific Programmes**: Programmes that address the immediate determinants of fetal and child nutrition and development
- **Stunting:** low height for age – a form of chronic malnutrition. A child is stunted when he is < 2 SD from the median height for age
- **Undernutrition:** the outcome of insufficient food intake and repeated infectious diseases. Includes both acute and chronic malnutrition
  - **Wasting/acute malnutrition:** low weight for height
  - **Acute malnutrition:** when wasting is < 2 standard deviations (SD) from the median weight for age
  - **Severe acute malnutrition**: when wasting <3 SD from the median for weight for age

Prevention of Chronic Malnutrition

Although chronic malnutrition includes stunting, underweight and micronutrient deficiencies most of Concern's programmes specifically aim to reduce stunting. These activities are also likely to have an impact on underweight and micronutrient deficiencies but we don't typically measure these. Our health programming includes some elements that tackle micronutrient deficiencies, such as promoting iron for pregnant women but this would not constitute a large part of our work. For prevention of stunting we have two main approaches:

1. Combining nutrition specific and nutrition sensitive approaches

Nutrition specific and nutrition sensitive activities are combined with the aim of reducing stunting, with stunting as the main outcome indicator. This requires programmes to target pregnant women and children less than two years of age i.e. the first 1,000 days. This may be different to traditional targeting where the most vulnerable are targeted and that includes the elderly and female headed households. The interventions required to see change require a significant amount of time to set up, start, expand and have an impact. It is estimated that four to five years are required to see an impact on stunting, particularly if this is to be sustained. Measuring the impact on stunting is different from traditional baseline and endline surveys

conducted in the same population. In this case the impact is generally measured in children two to five years of age who have already received the intervention. In addition the size of the impact is expected to be relatively modest due to the multifaceted causes of stunting. Typically we would be looking at a five to ten percentage point reduction. This requires a larger sample size than normal. These factors can make them more expensive to conduct. In Concern's programming we consider that at a minimum there need to be activities in the following areas for a programme to be able to have an impact on stunting:

- *Improved diversity, quality and quantity of food*
- *Social and behaviour change for optimal nutrition and health*
- *Women's empowerment and gender equality*

In rural areas improved diversity, quality and quantity of food unusually centre around agriculture production and processing. In urban areas it may be around increased income for poor households. Social and behaviour change requires intensive work at the individual and community level. We have found approaches such as Care Groups allow a large reach using mainly volunteers and a cascading training system. The article from Uganda in this issue of Knowledge Matters elaborates further on this. Women's empowerment and gender equality require diverse approaches that enable women to have more decisions around the health and nutrition of the family and within Concern we are increasingly including gender awareness for men and boys in these programmes. In addition, we believe it is critical to have enhanced sectoral coordination and alignment between various government ministries. This will lead to more effective interventions and to increased sustainability and scale up. However, as the article from Zambia illustrates there are significant challenges around coordination and alignment.

> The effective prevention of undernutrition requires a multi-sector approach. This involves sectors such as nutrition and health and agriculture working towards a common goal of improved nutrition security as measured by a reduction in the prevalence of acute and chronic malnutrition of children under five.

2. Nutrition sensitive approaches

These are programmes where we make our activities more nutrition sensitive with the aim of contributing towards the reduction of stunting but not actually measuring stunting. Instead we use proxy indicators such as improved diet diversity in children or reduction in diarrhea disease. Making programmes more nutrition sensitive requires planning and developing a theory of change. If we take agriculture programmes as an example, we know that good agriculture programmes can improve the quality and quantity of the diet of the household. However, often it has little impact on the nutritional status of children and we still see stunting in food secure

areas. This is because child nutrition is affected by a variety of factors in addition to the quality and quantity of food. These include maternal feeding and caregiving practices (e.g., optimal breastfeeding and complementary feeding practices) and health (which in turn is determined by access to health, water, sanitation and hygiene services)[4]. To make agriculture programmes more nutrition sensitive they should promote biofortified crops where appropriate, support homestead gardens that produce a range of nutritious vegetables and fruits, and give messages around nutrition to the farmers and families that they work with.

Prevention of Acute Malnutrition

All the activities described under prevention of chronic malnutrition will have an impact on acute malnutrition, in particular promotion of exclusive breastfeeding and optimal complementary feeding practices, improved access to good quality health and hygiene services and increasing access to high quality and sufficient food. However, acute malnutrition is often a feature of recurring hunger gaps, conflict or extreme weather patterns that may be unpredictable and prolonged.

Concern's approach to the prevention of acute malnutrition in these contexts is through resilience programming at community level. Concern understands resilience as *the ability of a country, community or household to anticipate, respond to, cope with, and recover from the effects of shocks and to adapt to stresses in a timely and efficient manner without compromising their long-term prospects of moving out of poverty*[5]. Resilience calls for more integrated programming between sectors particularly as the complexity of problems presented by, for instance, climate change, requires a new approach to development programming. This includes interventions such as improving agriculture production and diversifying livelihoods and assets, improving access to health services and strengthening health systems, improving infant and young child feeding behaviours, increasing access to safe water and improved sanitation and hygiene behaviours and work with the community to develop capacity, women's meaningful involvement and better governance.

Resilience also includes the need for early warning and responses to be embedded in more long-term development programmes. Early warning systems (EWS) will identify the early onset of potential shocks, enabling the delivery of an early emergency response package that can be rapidly scaled up for delivery in the most effective manner possible, bringing together humanitarian and development programmes in an integrated manner. The EWS identifies thresholds for key indicators that signal the need for an emergency response. The first level of intervention for any response will be the community themselves who will act on their own disaster management plans. After that the programme will initiate a response, which includes strengthened capacities for market analysis, scaling up cash interventions, distribution of emergency supplies, identification of the most vulnerable in the community and scaling up staff capacity. Through our resilience-building approach we expect that shocks and the resulting spikes in cases of acute malnutrition would be much lower and later and that the recovery will happen more quickly.

Concluding remarks

In conclusion the effective prevention of under nutrition requires a multi-sector approach. This involves sectors such as nutrition, and health and agriculture working towards a common goal of improved nutrition security as measured by a reduction in the prevalence of acute and chronic malnutrition of children under five. It will take time and resources for this goal to be realised. However, as the various contributors to this issue of Knowledge Matters demonstrate there is a lot of promising practice emerging in Concern's work. We need to build on this and continue to document and share our learning in order to influence peers, governments and donors amongst others.

References and Content Notes

1. Collins, S., Dent, N., et al. 2006. 'Management of severe acute malnutrition in children', *The Lancet*, vol. 368, iss. 9551 (pp. 1992-2000).
2. Unicef: http://www.unicef.org/progressforchildren/2006n4/index_undernutrition.html
3. The paper 'How Concern Understands Extreme Poverty' is available on Knowledge Exchange
4. Ruel, M: http://www.a4nh.cgiar.org/2014/05/05/dietary-diversity-101/
5. Shocks are single events with negative consequences, such as natural disasters or some types of conflict. Stresses are gradual changes with negative consequences, such as climate change, or slow changes in the economic or political context.

The role of inter-sectoral coordination in addressing malnutrition in Zambia

By Hunter Micheelsen, Danny Harvey, Marjolein Mwanamwenge and Richard Mwape

Introduction

"Malnutrition is a multifaceted problem and it cannot be remedied by one sector alone; rather, it requires concerted effort and attention by all sectors (Government, Cooperating Partners and Non-Governmental Organisations) (District Commissioner Mumbwa, 2012) and is addressed by the cumulative impact of several interventions, in the same place, at the same time, for the same child (Scott Drimie, 2014)"

The above quotes illustrate that malnutrition can only be effectively addressed through inter-sectoral coordination. Inter-sectoral coordination refers to the alignment of technical activities and advocacy efforts of different sectors towards a common understanding of the causes, effects and solutions with respect to malnutrition[1]. This article discusses the progress that the team in Zambia has had in this area.

Tackling Stunting in Zambia

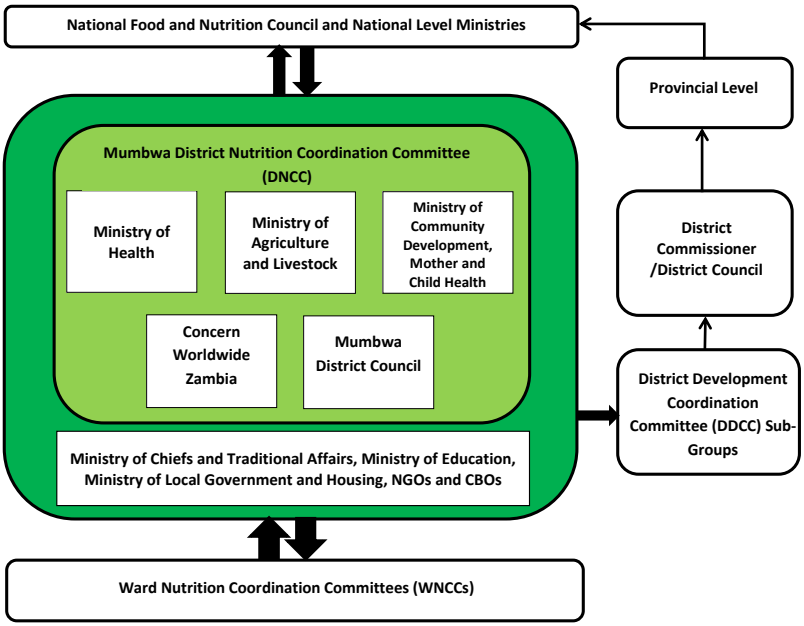
Stunting, a result of chronic malnutrition, is highly prevalent in Zambia, affecting more than one million children under five. In Mumbwa District in Central Province, approximately 50 per cent of children are stunted (NFNC, 2009)[2]. Historically, the problem of malnutrition has been tackled separately by different sectors, particularly by those working in agriculture and health. Power to make decisions is vested at the central level in most institutions, and there is often a lack of authority to innovate and address the unique factors contributing to malnutrition and stunting in a coherent and coordinated way at the district and community level. In order to address these issues, Concern's *Realigning Agriculture to Improve Nutrition project (RAIN)* has teamed up with local stakeholders and the District Commissioner's Office in Mumbwa to create the Mumbwa District Nutrition Coordination Committee (DNCC).

Establishment of the Mumbwa District Nutrition Coordination Committee (DNCC)

The DNCC was formally established in February 2012 to create a learning space where diverse stakeholders, from government ministries to local Community Based Organizations (CBOs),

gather together to engage in meaningful dialogue about the multiple causes of malnutrition and to facilitate a paradigm shift in how stunting is understood and addressed. The purpose of the DNCC is to facilitate district level institutional arrangements to enable sustainable dialogue, which will lead to joint strategies and interventions to efficiently and effectively address malnutrition. Upon establishment of the central structure of the DNCC, Ward Nutrition Coordinating Committees (WNCC) were established in each of the four RAIN project intervention wards as representative bodies for communities to discuss progress.

Figure 1: Structure of the Mumbwa District Nutrition Coordination Committee



Successes of the DNCC

Over the last two years the DNCC has evolved into a forum where members from different sectors who had not historically engaged with each other can address problems together. The DNCC acts as a link between national level policymakers and community level practitioners and supports both community-level nutrition interventions while advocating for change in policy and practice in central level nutrition programming. It is also responsible for helping to disseminate policy information at community level, monitor nutrition programming, and provide national level policymakers with key information and lessons learned to help shape evolving national nutrition policy.

The committee has worked together to finalize a district multisectoral nutrition plan to address the priority interventions of the Government's 1,000 Most Critical Days Programme. This plan will be funded by the Scaling Up Nutrition (SUN) Fund[3] that is also supporting the key line Ministries in capacity building for nutrition and the National Food and Nutrition Commission (NFNC) to promote and strengthen coordination across sectors at all levels. As the first of its kind in Zambia, the DNCC Mumbwa model is being replicated by the government and is so far supported in 13 other districts.

Lessons learnt

Concern Zambia has worked with an external consultant to strengthen the DNCC's shared vision and objectives, ways of working, leadership and planning and is currently investing in future sustainability and capacity for joint monitoring. Despite this structured support, it is clear that designing a strategy and creating a recognised body for achieving coordination and alignment for nutrition objectives through the Zambian Government raises significant challenges at both the structural and individual levels.

Line Ministry operations: It has been difficult to change the mindset and institutional operating systems of ministries from isolated implementation with central level control of decision-making and 'siloed' resources towards a system of joint implementation with shared activities and coordinated budgets. In response, the DNCC is working to redefine the roles and responsibilities of each sector through regular meetings, exposure visits, learning journeys and development of joint operating plans.

Time pressure and staff turnover: DNCC members understandably face multiple demands on their time and are often called out from DNCC gatherings. In addition, there is some movement of staff within government departments resulting in inconsistent attendance and loss of institutional knowledge. The DNCC has tried to address this by requiring line ministries to involve at least two staff members in DNCC activities and by supporting members to hold DNCC briefings and establish a DNCC file within their line Departments to facilitate the transmission of knowledge.

Shared vision: One of the most important investments in the development of the DNCC was creating a shared vision of undernutrition and the solutions to it through joint analysis and activities such as learning journeys. This intervention means that DNCC members can identify the role of their own line ministry in terms of delivering a solution to undernutrition.

Incentives: Beyond allowances, the DNCC identified a number of incentives that sustain their commitment and their work:

- Being held accountable by other DNCC members, stakeholders and their parent institutions
- Understanding their roles and the relevance of nutrition work to the mandate of their parent institutions

- Having a recognised mandate as a coordinating body and the support of the District Administration.
- Good leadership that is held by more than one member.

Community Involvement: The role of the WNCC is to ensure that the people of Mumbwa have a more representative voice. However, the development of the WNCC is challenging. It requires a lot more support to understand the role the community could play in improving service delivery related to improved nutrition, how the WNCC can respond to this and how it can act as a conduit for key issues to be addressed by the DNCC and other development planners.

Concluding thoughts

Concern's RAIN project in Zambia sees alignment and coordination as a dynamic process that is still a work-in-progress, but which has significantly increased the understanding of the multi sectoral approach needed in the fight against malnutrition. The functioning and work of the DNCC is something that is assessed on an on-going basis. As this article has shown there is not one universal blueprint for the creation of committees. Each situation is unique, but valuable lessons are being learned from the experiences of the DNCC. We will continue to document these lessons so that colleagues in other Concern country programmes as well as the Zambian government can learn from our experience.

References and Content Notes

1. Concern Worldwide and IFPRI. 2012.'Rain Programme Technical Brief Number 3 Intersectoral Coordination and Alignment for Nutrition' https://www.concern.net/sites/default/files/media/page/rain_brief_no.3_sep_2012.pdf
2. National Food and Nutrition Commission.2009. National Nutrition Surveillance Report – The status of nutrition in Zambia.
3. More information about SUN available at :http://scalingupnutrition.org/

Using a Farmer Field School approach to address undernutrition in Rwanda

By Alice Simington

Introduction

Rwanda has made impressive progress in the last decade. It was the 10th fastest growing economy in the world during the decade from 2000, achieving economic growth averaging eight per cent between 2007-2012, a reduction of extreme poverty from 35.8 percent to 24.1 per cent and a reduction in income inequality (from 0.52 to .049)[1].

Despite Rwanda's recent records in development and economic growth, the country continues to face significant challenges in relation to persistently high levels of chronic malnutrition (stunting), standing at 44 percent of children under-five years[2]. Although Rwanda was amongst the top 10 countries in terms of improvements in their Global Hunger Index (GHI) scores since 1990, hunger continues to be a serious issue, with Rwanda ranked at joint 40th (amongst 78 countries, down from 57th in 2012 and 41st in 2013) as per the 2013 GHI[3].

Concern's Agri-Nutrition Programme in Rwanda

The Government of Rwanda is committed to eliminating malnutrition amongst children and recognises the importance of nutrition in achieving national economic and social development goals. To this effect, the Government of Rwanda, in 2009, initiated an Emergency Plan to Eliminate Malnutrition (EPEM) with cross-sector leadership from the Ministry of Health, followed in 2010 by a National Multisectoral Strategic Plan to Eliminate Malnutrition (NSEM) to guide the implementation of the various interventions. The Ministry of Health was tasked to coordinate, under the auspices of the Prime Minister's Office, implementation of interventions by various sectors including Agriculture, Education, Infrastructure (responsible for Water, Sanitation and Hygiene (WASH)), Local Government and Commerce etc. It is this strategy which Concern's agriculture-nutrition programme is engaging with, at the decentralised level, through supporting 'District Plans for Elimination of Malnutrition' (DPEMs).

The Concern programme, funded by Irish Aid and the Embassy of the Kingdom of the Netherlands, applies both nutrition sensitive and nutrition specific components, with support to the Ministry of Health in terms of technical training (community health workers and health facility staff), as well as DPEM coordination support at the District level via the secondment of a staff member. This paper focuses specifically on the agriculture component, taking a Farmer Field School approach (FFS),

with a nutrition lens. This activity seeks to integrate agriculture-nutrition interventions to translate increased production into increased household diet diversity and consumption especially by young children and pregnant or lactating women.

The FFS approach is one element of a complementary set of interventions aligned under the agriculture-nutrition programme, within four districts of the Southern Province of Rwanda. Currently we are working with over 3,000 participants on the FFS who were selected on the basis of being from extremely poor households, but also from so-called '1,000 days' households, i.e. households with a pregnant or lactating woman, or children under two years of age.

Being from the poorest households that belong to category 1 and 2 of the Government *Ubudehe*[4] Wealth ranking, the level of malnutrition amongst these households was far greater than the national average, with the baseline survey indicating a prevalence of stunting among children age 0-23 months of 57.9 per cent. Among the same age group, the prevalence of global acute malnutrition was 7.8 per cent with 1.9 per cent (0.8 - 4.9%) being severely acutely malnourished. The prevalence of stunting among the older children (24- 59 months) was higher at 64.3 per cent. The global acute malnutrition rate in this age group was much lower than the younger children at 3.1 per cent (1.4- 6.7) with 1.6 per cent (0.5- 4.5) being severely wasted. While the current prevalence of global acute malnutrition among children under five years is acceptable according to World Health Organisation standards[5], the prevalence of stunting among both age groups in the Concern targeted households is alarming. One out of every two children aged 0-23 months is stunted, while two out of three children aged 24- 59 months are stunted.

The programme participants, the majority of whom are women, work through a nutrition-sensitive agricultural curriculum, which takes approximately 27 weeks (7 months) to complete. Each Farmer Field School group has approximately 40 members, meeting once a week. The training site or 'field' acts as a meeting point for participants to interact with a number of multi-sectoral issues pertaining to 'nutrition' such as appropriate child feeding practices, hygiene and so forth.

On the agriculture side, the focus is on consumption rather than just production, using an on-farm training approach with a strong focus on micronutrient-rich crops including orange-flesh sweet potato and iron-rich beans. While participants learn practical skills in farming production to increase their yields, they also learn about the nutritional content of the crops they are growing for a more micronutrient-rich choice of crops, and the importance of consuming a diverse diet. Participants are also given a goat and chickens or rabbits, to supplement proteins and mirconutrients in their diet.

The FFS component is managed by a local partner, Association Rwandaise pour le Développement Intégré with technical support from Concern agriculture-nutrition staff. Animators (those responsible for cascade training to their peers, following training by Concern staff and local partner extension staff) are selected from within the FFS participants.

The results of a survey a year after the initial baseline survey are very encouraging. All indicators, bar those on hand-washing have seen great improvements, see table 1, and further investigations are planned to explore these results in greater detail. Anthropometric measurements were not taken during this annual follow-up survey as it will be too early to see a change in stunting rates.

These will be taken in 2015, during the endline survey. Two indicators were added which were not in the original survey, therefore there are no comparable baseline values for this sub-set of programme participants.

Table 1: Key results from the baseline and follow-up survey

Dietary diversity and food security	May 2013	July 2014
Average number of food groups consumed by children age 6-23 months living in target agriculture households on the day before the survey (out of seven groups)	2.7	3.3
Percent of children age 6-23 months living in target agriculture households that received food from four or more food groups on the day before the survey	28%	46%
Percent of target agriculture households where the children age 6-23 months consumed at least three meals on the day before the survey	50%	67%
Percent of children age 6-23 months living in target agriculture households that consumed at least one vitamin A-rich fruit or vegetable on the day before the survey	53%	70%
Percent of children age 6-23 months living in target agriculture households that consumed at least one iron-rich food on the day before the survey[1]	18%	40%
Average number of hunger months experienced per year per target agriculture household	4	3
Average number of food groups consumed by target agriculture households on the day before the survey (out of 12 groups)	3.4	3.6
Percent of target agriculture households where the adults consumed at least two meals on the day before the survey	79%	88%
Household decision making		
Percent of mothers of children age 6-23 months living in target agriculture households that reported making the decision regarding major household purchases for food either alone or jointly with their husband/partner	54%	66%
Percent of mothers of children age 6-23 months living in target agriculture households that report that they make the decision regarding what foods are grown in the garden either alone or jointly with their husband/partner	68%	76%
Percent of mothers of children age 6-23 months living in target agriculture households that report that they make the decision regarding how to use the main produce from the gardens either alone or jointly with their husband/partner	72%	78%
Percent of mothers of children age 0-23 months who report that they usually make the decisions regarding their CHILD'S health care either alone or jointly with their husband/partner	(no data collected)	84%
Hand washing behaviour		
Percent of mothers of children age 6-23 months living in target agriculture households that report washing their hands with soap during at least two of the critical times on the day before the survey	21%	18%
Percent of households that had soap available	49%	46% stated they had soap in their household 41% stated that they used soap today or yesterday
Exclusive Breast Feeding		
Percent % of children age 0-5 months who were exclusively breastfed during the last 24 hours	(no data collected)	77%

[1] Iron-rich food defined as eggs, fish/shellfish/seafood, meat/poultry/organ meats, and RUTF.

> While the results present some promising progress, the extent to which this can be attributable solely to the FFS intervention needs to be explored further

Lessons Learnt

While there is emphasis on reduction of malnutrition in Rwanda, there is still a lack of knowledge and understanding around the less obvious chronic malnutrition (stunting), since children can often look otherwise healthy. Within Rwanda, there is a dearth of qualified nutritionists and employing and retaining staff with high capacity can be difficult. In addition, there are no local NGOs that are specifically skilled in nutrition.

A key challenge this programme needs to address is the speed at which participants can absorb information. Originally the animators were selected from amongst the programme participants. It was noted, however, that their ability to transfer the knowledge was weak (there was not much difference between pre- and post-test training). New animators have thus been selected from within the wider community, seeking out those with a higher level of education and skills set.

Given that the majority of programme participants are semi- or non-literate, the use of visual aids is critical. The programme is planning to produce colour laminated aids for use at home, with critical nutrition messaging, for each participant, which will serve as a reminder to them of what they have learnt, as well as allowing them to share this information with their respective partners.

The majority of participants on the FFS are women and therefore the programme needs to find a way to ensure that men are also involved, given that the programme is seeking to address one of the key drivers and maintainers of poverty: inequality. We wanted to ensure that men were also hearing the messages on nutrition, as well as addressing decision making on nutrition, health and the use of assets. Although the indicators demonstrate a positive trend on equity indicators, the programme has not dedicated sufficient time to equality, and the better results might be because, as one participant suggested '*it is easier to share decisions with your husband when you can bring something to the table*'.

Thus, by virtue of being on the programme and accessing seeds and livestock, the women are considered as valuable. Currently we are working with Promundo[6] to develop a specific 15 week curriculum on engaging men, which will be rolled out in 2015.

Next Steps

While the results present some promising progress, the extent to which this can be attributable solely to the FFS intervention needs to be explored further. The same survey was carried out amongst the wider population, without regard to poverty status, and comparisons need to be made between this survey and the results amongst the wider population (this analysis is not available at the time of writing). The data also needs to be triangulated with other sources of data to put the changes in context.

The team will work on action plans to respond to those indicators that are not performing well to improve outcomes in these areas.

References and Content Notes

1. Rwanda Economic Development and Poverty Reduction Strategy II, 2013-2018.
2. Household Demographic Survey, 2010.
3. Global Hunger Index Report 2013.
4. Ubudehe- a wealth ranking system done by the community under ministry of local government. Categories ranging from 1-6 with 1 and 2 being households living in extreme poverty.
5. According to WHO guidelines for interpreting prevalence of GAM, < 15% is acceptable, while 5- 10% medium. Iron-rich food defined as eggs, fish/shellfish/seafood, meat/poultry/organ meats, and RUTF.
6. Founded in Rio de Janeiro, Brazil in 1997, Promundo works internationally to engage men and boys to promote gender equality and end violence against women. It has independently registered organizations in Brazil, the United States and Portugal, which collaborate to achieve their shared mission.

The road to integrated nutrition programming in Malawi

By Gwyneth Cotes

With the support of Concern Worldwide, Malawi was one of the first countries to pilot Community Management of Acute Malnutrition (CMAM) in 2002, and since that time Malawi has been recognised as a country with a high level of commitment to nutrition.

Over the years Concern Malawi has developed a reputation for having a strong focus in nutrition, taking a leading role in scaling up CMAM throughout the country. Despite the national scale-up of CMAM, the rates of malnutrition remained very high; roughly 47 percent of children in Malawi are stunted, and some 40,000 children are treated for acute malnutrition every year. Based on this, in 2006 the organisation identified a need to do more to *prevent* undernutrition rather than just treat it.

Initially, the emphasis was on better integrating nutrition into existing programmes. In 2009, Concern received funding to establish its first child health project in Malawi, which took an integrated health and nutrition approach.

At the time, Concern was one of the few organisations in the country to identify poor complementary feeding practices, and stunting, as critical elements of child health. The project worked with the government of Malawi to pilot nutrition counseling cards, which were used by trained community volunteers during household visits. These same volunteers were trained to encourage households to take sick children for prompt care, use insecticide treated nets, and practice good hygiene and sanitation. A Barrier Analysis study was conducted to identify targeted messages to promote these practices. The endline survey found that the proportion of children who ate foods from four or more food groups increased from 8 to 17 percent in Dowa district, and from 18 percent to 26 percent in Nkhotakota district[1].

At the same time, Concern took steps to try to better integrate nutrition into its agriculture programme, holding an organizational workshop to identify ways of working better across programmes. Staff were not clear how to operationalize nutrition into their day-to-day work, though, and tended to see nutrition as being a secondary part of their role. Little came of these efforts to integrate food and nutrition security until 2011, when a new Food, Income, and Markets (FIM) programme was developed. Designing a new programme provided the opportunity to include clear nutrition-focused objectives into the programme design, such as including targets around child dietary diversity.

The work in Malawi has so far generated a number of lessons. A key lesson learned from these early efforts was that nutrition needed to be a central focus of the programme from inception. Another lesson was that nutrition should be targeted through a comprehensive approach, not just by adding a few activities into a broader health or agriculture programme. Another lesson learned was the need to design staffing structures so that there is a good balance of technical backgrounds and skills sets, such as behaviour change, nutrition education, and food security programming. Finally, the importance of using a high-quality behaviour change approach, guided by formative research such as Barrier Analysis, Trials of Improved Practices, or other community assessments, is essential to effectively promote improved nutrition behaviours.

Since 2012, the prevention of undernutrition has become a key focus area for Concern Malawi. The earlier challenges have been used as a learning opportunity and lessons have been incorporated into new programmes.

In 2013, Concern received funding to deliver a comprehensive programme to reduce stunting in Mchinji District, which has the fourth-highest stunting rate in the country, at 54 percent. In the first two years, Concern will target 40 percent of the district, with an eventual scale-up expected to the whole district. The programme design uses a multisectoral approach, linking nutrition education, social and behaviour change, water and sanitation, food security, and local capacity building.

The programme is rolling out Care Groups throughout the target area to disseminate information on nutrition, sanitation, and reproductive health. Food security activities will include kitchen gardens and support to home livestock production. One key focus is on targeting reproductive health, especially among young people, through the Grassroot Soccer approach[2]. Teenage pregnancy is high in Malawi, at 26 percent (2010 DHS), and is an important contributor to high rates of stunting. Adolescent girls are more likely to give birth to babies who are small for their gestational age and therefore more likely to be stunted.

> **“The results at the community level have been impressive, with some villages building community health structures out of their own funds to hold weekly child health clinics and nutrition screening, operated by Community Health Workers**

In addition, Concern's new FIM programme, operating in three districts, has strengthened the integration of nutrition in its overall programme design. The programme is targeting women (especially those with young children) through its work promoting kitchen gardens, and a package of nutritious seeds has been identified for home production. Dietary diversity efforts have focused on improving the mix of staple crops and legumes, focusing on drought-resistant crops.

In 2014, Concern entered into a new partnership with the International Potato Centre (CIP), which is providing technical support to local farmers in growing orange-fleshed sweet potato, which is high in Vitamin A and other essential nutrients. One area that was often overlooked in the past was the need to improve consumption, not just production, of healthy foods. Through the partnership with CIP, a nutrition adviser will be placed within the FIM programme; this person's role will be to strengthen nutrition education in extension services, starting with sweet potato, but expanding to include other plants as well as animal-source foods and fish – all of which are promoted under the FIM programme already.

Finally, throughout all of Concern Malawi's programmes, there is a strong emphasis on improving local governance. Malawi has a decentralized government structure, with "Village Development Committees" (VDCs) established to guide development efforts at the community level. These VDCs are often very weak or even non-functional when we enter an area. Concern works to engage the VDCs in decision-making and planning for nutrition, health, and agriculture activities, and have been using the Health Institution Capacity Assessment Process (HICAP) tool since 2009 to build their capacity[3]. The results at the community level have been impressive, with some villages building community health structures out of their own funds to hold weekly child health clinics and nutrition screening, operated by Community Health Workers. At the national level, Concern is heavily involved in efforts around Scaling up Nutrition (SUN), and is a co-chair of the national Civil Society Organisations Nutrition Alliance, working to advocate for more commitment and funding for nutrition.

References and Content Notes

1. Households are asked about the foods eaten by the youngest child in the past 24 hours. The seven food groups are: Roots, grains and tubers; legumes and nuts; Vitamin A-rich fruits and vegetables; other fruits and vegetables; meat; eggs; and foods made from dairy
2. Grassroot Soccer (GRS) is a sports-based curriculum targeting adolescent girls and boys; which uses fun, innovative techniques to stimulate discussion around issues of gender, sex, and HIV. Concern has worked with GRS in Nkhotakota District since 2013. http://www.grassrootsoccer.org/
3. The HICAP was first piloted in Concern's Child Survival Project in Bangladesh, and was adapted for use in Malawi, then later on in Sierra Leone. Concern Malawi is now planning to use the approach for capacity building within other sectors, not just for health.

Scaling up nutrition at community level in Tanzania

By Martha Maguire and George Mutembei Mutwiri

Introduction

Between 2005 and 2010 the prevalence of stunting in Tanzania fell by only two percentage points from 44 to 42 per cent and the number of stunted children rose to over 3 million[1].

Regardless of improvements in child wellbeing overall and a reduction in child mortality, there are more chronically malnourished children in Tanzania today than ever previously recorded {2}. Despite it being a country considered food secure, Tanzania is ranked 10th worst affected country in the world with regards to chronic malnutrition and 3rd worst in Africa, following Ethiopia and the Democratic Republic of Congo[3]. Tanzania signaled its commitment to join the Scaling Up Nutrition (SUN) Movement in 2011. The 'Call to Action on Nutrition' launched by the Tanzanian President Kikwete on May 16th 2013 created a new awareness of chronic malnutrition in Tanzania and revived the discussions at a national level, particularly around child stunting and maternal anaemia. This call to action declared that malnutrition is a national emergency and implored immediate action to preventing chronic malnutrition in Tanzania.

The Importance of Addressing Stunting

In collaboration with the United Nations Children's Fund, Concern Tanzania is implementing a three year project funded by Irish Aid which aims to reduce the prevalence of childhood stunting through interventions during the critical period from conception to 24 months of age in three regions of Tanzania; Iringa, Njombe and Mbeya. The project is working at the community level to directly reach 44,902 children less than two years, their caregivers, and 30,318 pregnant women in six districts between April 2013 and June 2016 in an effort to scale up nutrition in Tanzania.

> "Social and behaviour change communication is critical to achieve impact. With this in mind the programme in Tanzania has designed two behaviour change components. One is for community and community health workers and the other is for farmers and agricultural extension workers

The 2010 Tanzanian Demographic Health Survey (TDHS) shows that these regions have some of the highest stunting rates and are also among the country's most agriculturally productive[4]. In order to maximize the impact on reducing stunting, Concern Tanzania is addressing the multiple factors associated with stunting. These factors include poor infant and young child feeding practices, hygiene practices, child stimulation, poor maternal nutrition, inadequate support for women during pregnancy and inadequate dietary intake. A detailed contextual analysis of chronic malnutrition was carried out in year 1 (2013) of the project to better understand the factors associated with stunting in the three regions, the social, cultural, and gender issues influencing nutritional status, and in particular why stunting coexists with relatively good food security. Based on the baseline data Concern and the Centre for Research on the Epidemiology of Disasters are currently undertaking an analysis to investigate further the determinants/ factors associated with stunting.

Working up from the community level

In year two the project aims to directly reach 22,451 children less than two years of age and their care givers, and 15,159 pregnant women, in six districts. In this phase, Concern Tanzania is working closely with the government to help provide a wider range of outreach services at community level. Based on the assessments from year 1 the team felt that the best approach is to work on an integrated, multi-sectorial nutrition programme at the community level. The strategy works on strengthening government and local institutional capacities to scale up and sustain nutrition actions, with reducing childhood stunting and maternal anaemia as priority goals. At the community and health facility level, priority attention is given to behaviours, practices , knowledge and beliefs that influence infant and young child feeding practices, and to the availability and access of nutritious foods for both women and children. To create sustainability, the project is also designed to use the already existing government structure of agriculture extension workers and community health workers (CHWs) who work under supervisors who also are government staff nominated to support the project. Social and behaviour change communication is critical to achieve impact. With this in mind the project in Tanzania has designed two behaviour change components. One is for community and community health workers and the other is for farmers and agricultural extension workers.

Ultimately, for the project to be effective and sustainable it has to be grounded within the community. An example of our community level work is Felista Nganyangwa, the Community Health Worker (CHW) from Magunga village in the Iringa District. Under the supervision of Concern, her supervisor, and the District Nutrition Officer, she trains one Care Group of women in her community, who in turn identify mothers who are pregnant or with a child <2 years of age. She trains this group on how to give behaviour change messages to the households each volunteer visits.

Felista, together with her Care Group members, meet a group of farmers on a monthly basis at Concern supported Farmer Field Schools where she teaches them about healthy consumption and nutrition for mothers and children within the first 1,000 days (from conception to the second birthday). She sees that the community is very excited about the project *"because they expect to*

learn a lot in terms of food production and usage of different foods" to improve the nutrition of their children. As part of the integrated approach she works alongside George Nyalulolo, a farmer in the same community, who is training his community in producing diversified foods with a focus on promoting kitchen gardens using nutritionally rich foods with a focus on using improved varieties of Tanzanian open pollinated varieties of fruits and vegetables and teaching them new techniques in vegetable production and their uses in the Farmer Field School.

Felista Nganyangwa talking to a community member, Magunga Village, Iringa District, Tanzania. Photo by Jonas Kamala, 2014.

George Nyalulolo showing fellow farmers how the Kitchen Garden concept works, Magunga Village, Iringa District, Tanzania. Photo by Jonas Kamala, 2014.

Ensuring Sustainability

The overall objective of the project is to reduce the prevalence of chronic malnutrition among young children under five in Mbeya, Iringa and Njombe regions by 7 percentage points (from 45 percent in 2013 to 38 percent in 2019)[5]. To ensure future successes that go beyond the duration of the project, Concern Tanzania developed a sustainable model to prevent stunting that stakeholders are able to implement and improve. The project utilizes existing government and community structures and mechanisms. The Regional Secretariats and Local Government Authority staff are expected to engage in the project as part of their regular work. Service providers and community-based workers are incentivized through skills training, recognition as local experts, and with working tools and job aids.

Concluding thoughts

To conclude, it was essential to understand the specific causes of the high prevalence of stunting in Mbeya, Iringa and Njombe, given the fact that these regions are generally considered food secure. A detailed contextual analysis gave the country team an insight into the various causes of stunting. This knowledge has proven pivotal in designing and implementing the current project.

The Tanzanian project is an example of a good model for scaling up nutrition at the community level. The model works to provide evidence to current global discussions related to addressing stunting by providing both nutrition sensitive and specific interventions. Furthermore the project provides greater knowledge on linking agriculture with nutrition interventions, a model that can be duplicated in other projects whose objective is to scale-up nutrition at the community level.

References and Content Notes

1. Malnutrition: Can Tanzania afford to ignore 43,000 dead children and Tshs 700 billion in lost income every year? Twawesa Policy Note 02/2010 http://www.twaweza.org/uploads/files/Fighting%20Malnutrition%20English(1).PDF last accessed 10.05 05/08/2014
2. Albeit due to more stringent recording mechanisms and/or a rise in the demographics
3. Malnutrition: Can Tanzania afford to ignore 43,000 dead children and Tshs 700 billion in lost income every year? Twawesa Policy Note 02/2010 http://www.twaweza.org/uploads/files/Fighting%20Malnutrition%20English(1).PDF last accessed 10.05 05/08/2014
4. http://www.nbs.go.tz/takwimu/references/2010TDHS.pdf last accessed 05/08/14
5. The overall programme is for five years and Concern are collaborating in the first 3 year phase of the programme.

Reflections on how Mozambique links agriculture and nutrition

By Alexandra Valerio

Introduction

The Linking Agriculture and Nutrition for Development (LAND) programme is an innovative initiative that works with the private, not-for-profit and public sectors to tackle chronic malnutrition and extreme poverty in Mozambique. The programme runs from 2012 to 2016 in Zambezia province and from 2013 to 2016 in Manica province, funded by the Department for International Development (DFID) and Irish Aid. The implementation in Manica Province is in partnership with the public-private partner *Beira Agricultural Growth Corridor* (BAGC).

The link between agribusiness and nutrition is facilitated through collaboration between BAGC and Concern to deliver increased agricultural productivity among smallholder farmers and private sector agribusiness and through rolling out extensive Social and Behaviour Change (SBC) activities with a major focus on Infant and Young Child Feeding (IYCF) practices. LAND integrates two community-based delivery platforms - Farmer Field Schools and modified Care Groups - to target 25,000 direct programme participants across the two provinces. Up to 623,000 people in the Beira Corridor – of which 350,000 are pregnant and lactating women, women of reproductive age or children under five years of age – will be reached via nutrition sensitive media outreach such as radio broadcasts.

Concern is also working closely with SETSAN (the Government's technical secretariat on food security and nutrition) in Manica Province to gather evidence on nutrition interventions and new models of behaviour change that will contribute to improving the nutritional status of Mozambicans in the Beira Corridor and reduce chronic malnutrition in the country. SETSAN is also the Government's body spearheading Scaling Up Nutrition (SUN) activities within the country.

Barrier Analysis and baseline surveys

The opening phase of the programme focused on formative research to identify specific cultural beliefs and behaviours that could represent a barrier to improving the nutritional status of programme participants. The formative research consisted of two nutrition baseline surveys, and several Barrier Analysis surveys, concluded in early 2014.

The baselines confirmed a high prevalence of stunting in children <5 years of 45.1 percent (which is higher than the national average) in the target areas. The baseline surveys have demonstrated that the programme appropriately addresses some of the major concerns regarding chronic malnutrition and IYCF practices in the intervention areas. Given its design and multi-institutional partnership approach, the LAND programme has great potential to impact on the infant and young child feeding practices and subsequently on the prevalence of stunting in the intervention districts[1].

The Barrier Analyses identified the key determinants of behaviour change at the household level. For instance, through the Barrier Analysis it was possible to identify several cultural beliefs around food consumption. One cultural belief was that if a child consumes eggs they will have teeth problems and their hair will fall out. Findings from the Barrier Analysis are currently informing the design of a 'Social and Behavioural Change (SBC) strategy'. Both the baseline and the Barrier Analysis ensure that the LAND intervention is designed based on evidence and addresses local challenges.

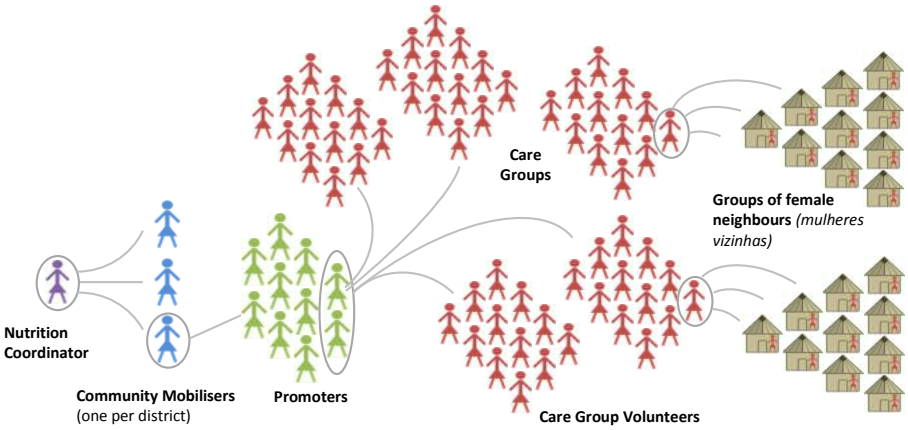
An integrated approach that links the public-private and not-for-profit sectors

The programme uses an integrated approach to use evidence from agribusiness operations with nutrition outcomes targeting a population of 350,000 programme participants. It uses this evidence in a coordinated way to provide information for policy-makers. The programme is working with two sets of programme participants: (1) smallholder farming households that are connected to Concern's Farmer Field Schools and (2) emerging and economically active farmers who are connected to the Beira Agricultural Growth Corridor (BAGC) programme.

> "Concern is training 900 Care Group volunteers in each province, who collectively reach a total of 9,000 households per province via the cascading training structure

The programme participants are extreme poor and vulnerable small holder farming households. Concern will implement intensive nutrition activities via women's volunteer support groups – modified Care Groups that are established alongside the existing Farmer Field Schools (FFS). One modified Care Group is formed within the vicinity of each FFS, up to a total of 75 groups in Manica and 75 in Zambezia province. Each modified Care Group consists of 12 female Care Group volunteers, and each volunteer will work with another 10 "*Mulheres Vizinhas"* (neighbour women). Concern is training 900 Care Group volunteers in each province, who collectively reach a total of 9,000 households per province via the cascading training structure outlined in the diagram below. The IYCF trainings use the national IYCF training curriculum and tools.

Figure 1: Care Group Structure for the LAND Programme



The Farmer Field School approach focuses on horticulture and cash crop production in a bid to increase household income and access to more diverse and micronutrient-rich foods. It directly targets 1,875 small holder farmer households (55 percent are women farmers). Whilst 9,375 are indirect programme participants. The FFS deliver technical training, and agricultural experimentation, innovation and inputs to improve production & crop diversity through Conservation Agriculture, Healthy Harvests and appropriate High Value Cash Crop techniques.

In the 'emerging farmer communities' covered by BAGC in Manica, the groups consist of more economically active farmers and families engaged in existing activities within the BAGC portfolio. Concern/BAGC will carry out *light touch* nutrition activities by leveraging the delivery platforms already established amongst the BAGC members to engage them by promoting nutrition sensitive business practices. We will also support farmers within those organisations to make more informed choices for improved nutrition with their income. The light touch approach is also delivered via SBC communication mechanisms such as radio broadcasts.

Concluding thoughts

Concern has seconded a nutrition adviser to support the work of SETSAN in Manica Province. The support to SETSAN aims to improve accountability and better coordination of activities. Concern will continue working closely with SETSAN to gather evidence on nutrition interventions that are contributing to improve the nutritional status of Mozambicans in the Beira Corridor and reduce chronic malnutrition in the country.

Concern Mozambique is looking at the work and lessons learned from similar initiatives launched in other countries, such as the Realigning Agriculture to Improve Nutrition (RAIN) project in Zambia. This will inform the implementation of the LAND programme using the best available evidence.

References and Content Notes

1. Mehjabeen, S. 2014. 'Linking Agribusiness and Nutrition in Mozambique: Baseline Survey Report, Tambara, Guro, and Barué Districts in Manica Province.' Concern Worldwide Mozambique.

Tackling malnutrition in Burundi through a multi-sectoral approach

By Karine Coudert, Joseph Jasperse, and Edward O'Carroll

Introduction

Starting in 2014 Concern Burundi's "*Improving Child Nutrition in Reducing Child Chronic Malnutrition project*" will run over a two year period. The project will integrate agriculture, economic resilience, nutrition and health interventions with a strong focus on behaviour change communication. The latter is related to the prevention of chronic malnutrition as well as implementing and building local ownership of a package of services that links Positive Deviance/Hearth[1] with kitchen gardening and community-based saving groups[2]

Box 1: Key terms

Positive Deviance/hearth	Kitchen Gardening	Community-based saving groups
Positive Deviance/hearth approach promotes behaviour change and empowers mothers to take responsibility for nutritional rehabilitation of their children using local knowledge and resources.	Kitchen gardens help provide long-term solutions to food security and nutrition situation by teaching vulnerable households how to grow their own nutritionally-rich foods, rather than depending on others.	Community-based saving groups provide financial services that keep money in the community. Members save a small amount of money on a regular basis to invest in income generating activities, to mitigate the impact of food insecurity, particularly during the lean season when stocks are depleted and to help pay for unexpected costs such as medication.

Fifteen years of civil war and extreme poverty have strongly impacted on Burundi's economy and nutritional well-being of the population. Ninety percent of the population are subsistence farmers who live below the poverty line and possess limited land, which means they only grow enough to feed their families, which has serious repercussions on the ability of households to meet basic needs. In addition to land scarcity, diseases such as malaria, diarrhea and parasitic infections are contributing factors to the high levels of chronic malnutrition (58 percent) in Burundi.

While the country has made strides in reducing acute malnutrition, the problem of chronic malnutrition is at high levels in Burundi, resulting from children being deprived of the necessary nourishment within the first two years of their lives, causing irreversible damage to both their bodies and minds.

Malnutrition in Burundi is a direct consequence of poverty. Families cannot afford to buy nutritious food, often have poor hygiene practices and have difficulty accessing basic health care services. Children are at risk even before they are born, as mothers are starved of the necessary nutrients during pregnancy.

To help address this problem of poor nutrition, Concern Worldwide Burundi will focus on multisectorial approaches to tackle malnutrition such as behaviour change sessions for caregivers to make sure children receive the necessary nutrients; the creation of kitchen gardens to encourage food diversification; the implementation of nutrition sensitive actions such as Saving and Internal Lending Communities (SILC) to ensure adequate access to nutritious foods and mitigate the impact of food insecurity.

Figure 1: Multisectoral approaches to tackle malnutrition in Burundi

The expected results of the project will be:

1) Improved access to and utilization of quality nutrition services,
2) Improved access to community-level treatment within the first 24 hours for young children with malaria, diarrhea, and Acute Respiratory Infections (ARI),
3) Reduced vulnerability and strengthen household resilience through the adoption of improved maternal and child health care and nutrition practices.

The project will use a number of approaches in order to achieve the above results. These approaches are discussed below.

Integrated Care Group Model: Using this model, Care Group Volunteers will promote household-level behaviour change through conducting monthly home visits to all households with pregnant women and children under five. Care Groups will facilitate behaviour change at the household level, creating a multiplying effect to equitably reach every participating household with interpersonal behaviour change communication messages. All messages are based on best family practices for the prevention of chronic malnutrition, infant and young child feeding practices, family planning, etc.

Integrated Community Case Management (iCCM): Using this approach community health workers will quickly diagnose and treat malaria, diarrhea, and ARIs among children under five at the community level. The iCCM will help maximise coverage and access to health services. For a country like Burundi where the health service is under-resourced this will be critical.

Strengthening nutrition services: This will focus on strengthening nutrition interventions at community level through staff training on community-based management of acute malnutrition (CMAM) and on Positive Deviance /Hearth (PD/Hearth), which focuses on home learning and nutritional rehabilitation. To strengthen PD/Hearth services, the project will train 164 Mamans Lumières (Mother Leaders) to facilitate PD/Hearth sessions for children under five suffering from moderate acute malnutrition. Mother Leaders will then teach mothers how to prepare balanced meals during cooking demonstrations and education sessions over a 12 day period, using locally available foods with high nutritional value. Positive Deviant Hearth mothers will be trained in the use of vegetable gardens. The idea here is that food security and access to nutritious food will be increased.

“”

The group members will then use the loan for either their personal use or to set up a small income generating activity, such as selling vegetables

Reduce vulnerability and strengthen household resilience: The project will implement community-based saving groups (SILC) for PD/Hearth participants. Members will be encouraged to save a fixed amount of money on a regular basis, thus enabling families to manage risks, build resilience to shocks, and reduce the risk of depletion of household assets or removing children from school. When the sum is substantial enough it is given to one or more members of the group as a loan to be paid back within three months with interest of 10 percent. The group members will then use the loan for either their personal use or to set up a small income generating activity, such as selling vegetables. The loan can also help members to pay for unexpected costs such as medical costs or funeral expenses.

Interest accrued is then shared among members of the group at the end of the year. All SILCs will create a special PD/Hearth fund, with regular contribution to purchase local foods to be used during cooking demonstrations, therefore ensuring the sustainability of PD/Hearth activities.

Concluding remarks

As was stated in the introduction, the project has only started implementation. This article has sought to articulate the various approaches that will be utilised to address malnutrition. Concern Burundi is committed to documenting and sharing lessons as we work to tackle malnutrition in Kirundo province.

References and Content Notes

1. Positive Deviance/Hearth, A Resource Guide for Sustainably Rehabilitating Malnourished Children, CORE. 2003.
2. Vanmeenen, Guy.2006.Catholic Relief Services, Savings and Internal Lending Communities – A Basis For Integral Human Development.

Using the Care Group model to prevent undernutrition in Uganda

By Finola Mohan

Introduction

Resiliency through Wealth, Agriculture and Nutrition (RWANU) is a United States Agency for International Development (USAID) funded, five year integrated agriculture, health and nutrition programme. As part of a consortium with ACDI/VOCA and Welthungerhilfe, Concern is implementing RWANU in four districts (Moroto, Napak, Nakapiripirit and Amudat) of South Karamoja, Uganda. Concern is implementing the Care Group model in the intervention areas as a means to improve health and nutrition practices at the household level.

Karamoja Context

The Karamoja sub-region in north-east Uganda, with a population of 1.3 million people, suffers from persistent food insecurity and high levels of malnutrition. In 2014, the global acute malnutrition (GAM) rate was 11.0 percent, with severe acute malnutrition (SAM) rates of 3.5 percent[1]. Despite on-going humanitarian efforts, Karamoja remains the region with Uganda's worst health indices where about 100 children below five years of age die each *week* from preventable illnesses (153 deaths per 1,000)[2]. Eight out of 10 people in Karamoja cannot meet their basic needs, and less than 7 percent of women are literate.

According to the Government of Uganda's Karamoja Integrated Development Plan 2011-2015 the region is "off-track in meeting health and nutrition-related Millennium Development Goals and is the worst place to be a child, with highly elevated levels of early childhood mortality and morbidity"[3]. This is attributed to low access to and utilization of basic health services – averaging 24 percent compared with the national rate of 72 percent. Maternal mortality is estimated at 750 per 100,000 live births – 40 percent higher than Uganda's national average.

Karamoja is chronically food insecure and dependent on food aid. Hunger seasons can extend for more than five months and child malnutrition rates regularly exceed World Health Organisation emergency threshold levels. In the last few years improved security in the region, coupled with commitments by the government of Uganda and donors to invest in economic and social development, has opened a window of opportunity to address the root causes of food insecurity.

Improving health and nutrition practices at the household

RWANU (meaning 'future' in the Karamojong language) responds to the overall strategic objective of USAID's Food for Peace Title II programme: *reduce food insecurity among chronically food insecure households*. The programme aims to improve availability and access to food for vulnerable households and reduce malnutrition in pregnant and lactating mothers and children under five. The programme is reaching 287,461 people. Concern implements the health component working to improve health and nutrition practises at household level and improve prevention and treatment of maternal and child illnesses.

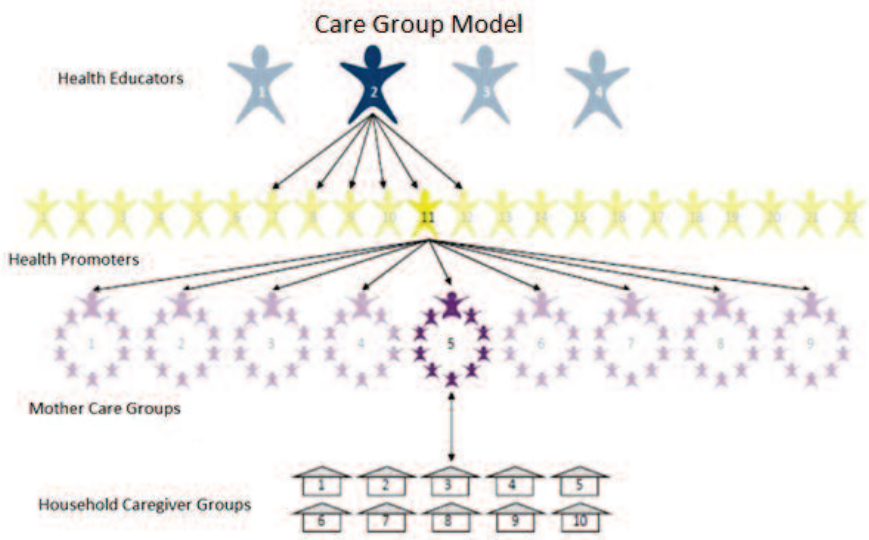
Concern's activities in RWANU focus on preventing malnutrition during the first 1,000 days of life through a comprehensive package of curative and preventative health care, behaviour change activities, and improved consumption of micro- and macronutrients. At community level the programme is working with 1,946 household caregiver groups to achieve behavioural changes conducive to the care and well-being of children. This is matched by activities at health centre level. These seek to improve the quality and outreach of services that support mothers and infants. The health and nutrition components are complemented by agriculture and income generation activities implemented by consortium partners.

Care Group

Concern is using the Care Group model to reach mothers at household level. The Care Group model links Concern's Health Educators and Health Promoters with Mother Care Groups (MCGs) and household caregiver groups. The MCGs are comprised of 10-15 Lead Mothers, who are volunteer community-based health educators. They regularly meet with the programme's Health Promoters for trainings on messages and behaviours that promote good health and nutrition for children and mothers. Each Care Group Lead Mother is responsible for 10-14 households who are grouped into a Household Caregiver Group.

A mother Care Group meeting in Loteede village, Acegeretolim parish in Nabilatuk sub-county, Nakapiripirit district. Photo by Maya Hageali, August 2014

Figure 1: Care Group Model



The health and nutrition messages are delivered through a social behaviour change strategy and the care group curriculum. This curriculum was specifically developed following formative research in year one of the programme which included Barrier Analysis on feeding practices, trials of improved practices, cost of diet analysis and barriers to health care access for women and children. Module topics in RWANU include: Infant and Young Child Feeding; Maternal Nutrition and Health; Linkages between Agriculture and Nutrition; Essential Hygiene and Sanitation Practices; Reproductive Health and Family Planning and Child Health.

"After joining the Mother Care Group, I learnt a lot about what might make my children sick. Now I make sure that my children are clean, wear clean clothes and wash their hands before eating. Now I want to construct a latrine." Quote from Moru Alice, Pedo Manyatta, AjokoKipi village, Loregae sub-county, Nakapiripirit District

A photograph from Module 2 Lesson 2: '*Dietary diversity for women before, during and after pregnancy'*. The image shows the diversity of food required by this breastfeeding mother, Opuwa Catherine with her husband, Kenn Joseph and mother, Nakee Magdelena, looking on approvingly. Photo by Noel Molony, December 2013

Lead Mothers responding to emergencies

In response to the seasonal spikes in malnutrition, the programme saw the potential of Lead Mothers to enhance the community component of Integrated Management of Acute Malnutrition (IMAM) through identifying children at risk and referring them to the Ministry of Health and Village Health Team (VHTs). Lead Mothers are trained to identify malnourished children using Mid-Upper Arm Circumference (MUAC) tapes and refer them to the VHT for treatment or onward referral. Similarly lead mothers are trained to counsel mothers of IMAM defaulters to take their children back to the health centre. In addition to promoting healthy behaviours and encouraging households to change their behaviours, VHTs and Lead Mothers are helping each other and working together to ensure that their villages are healthy. To quote a lead Mother from Thimoni village, Nadunget sub-county, Moroto district.

"I am very excited to learn how to know if a child is malnourished or not. I will be doing this with the children in my manyatta[4]. I know the VHT in my village so I will be sending these children I measured 'red or yellow'[5] so that they can get treatment at the health centre" Quote from Nager Maritina, Kodet Manyatta, Kopoe village, Nadunget Sub-county, Moroto District.

Mark Lodim, RWANU programme staff conducting practical sessions with a Lead Mother, Nager Maritina on measuring the mid upper arm of a child using the MUAC tape. Photo by Rose Luz, June 2014

Concluding thoughts

Although the formal mid-term evaluation for the programme is not due until 2015, it has been observed that there is an increase in the awareness of mothers of the different causes of malnutrition, including hygiene and sanitation and health service utilisation. Encouragingly, women are beginning to play a more active role in community sanitation management structures. The care group model is proving to be an effective way of sharing vital health and nutrition information and receiving feedback from mothers and caregivers in order to prevent undernutrition in South Karamoja.

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4. A *manyatta* is a typical homestead in Karamoja which contains a cluster of grass thatched huts, encircled by protective thorns, in which often entire extended families live together. There can be about 25 people living in an average *manyatta*.
5. Red means severely malnourished, yellow means moderately malnourished. A measurement of red indicates the need for referral for therapeutic feeding and yellow indicates the child may need supplementary feeding.

When numbers don't lie

By
Ivy Ndiewo

The Arid and Semi-Arid Lands (ASAL) of northern Kenya are experiencing hunger once again. Of the 17 counties affected, Marsabit, Wajir, Turkana, Baringo and Samburu are worst hit. A July 2014 survey in three sub-counties (North Horr/Loiyangalani, Chalbi and Laisamis) in Marsabit revealed global acute malnutrition (GAM) rates of 29.2, 20.5 and 18.2 percent respectively (approximately 7,000 children), and SAM of 7.4, 4.1 and 3.1 percent (approximately 1,499 children)[1]. The Government of Kenya has released Ksh. 1 billion (approx. US$11,400,000) to provide relief food supplies.

While a lot of resources are in place to manage the hunger situation in the ASALs, the situation in the urban slums is bleak as depicted by Concern Kenya's Indicator Development Surveillance of Urban Emergency (IDSUE) surveys and the nutrition assessment survey data. The nutrition survey for Nairobi slums in June 2014 shows a GAM rate of 5.7 percent (approximately 22, 000 children) and a severe acute malnutrition (SAM) rate of 1.9 percent (approximately 7,500 children)[2].

Although the GAM and SAM rates are much lower than in the ASAL, the numbers of children affected are much higher, so although these rates are below the emergency thresholds (15 percent for GAM) action must be taken to prevent excess morbidity and mortality in children. This is a serious humanitarian crisis as health facilities in the slums cannot manage such big numbers. Concern supports nutrition sites in the urban slums and provides supplies such as food supplements and therapeutic foods to manage cases of acute malnutrition. We also work with the Kenya government to monitor the nutrition situation, strengthening health systems and management of malnutrition through training. With limited finances, facilities frequently run out of supplies meaning the 7,500 SAM cases receive inadequate treatment so recovery rates are sub-optimal. Given the cost of a box of ready to use therapeutic food and the quantity needed to treat a SAM case, the estimated cost to treat the 7,500 SAM cases would be Kes. 75million (assuming 180 sachets of ready to use therapeutic food per SAM case).

The use of the Integrated Food Security Phase of Classification (IPC)[3] masks the reality of severe food insecurity in the urban slums and thus little or no action is taken by governments and humanitarian actors to help the households in need. With this in mind, Concern developed the IDSUE tool for understanding urban poverty. Concern collects data using smart phones in

five slums in Nairobi to substantiate the difference between urban and rural poverty. The tool monitors vulnerable urban areas using specific indicators (such as food security, personal security and coping strategies) that bring out the livelihood situation in the slums. For instance, in the recent IDSUE round 8 and 9 surveys conducted, Korogocho is worst hit by food insecurity. Sixty five percent of households are food insecure, 12 percent of households are severely hungry while 37 percent are experiencing moderate hunger. The tool gives a clear picture of the socio-economic situation of slum communities as well as what factors to watch for when an emergency is looming.

Korogocho is the oldest slum in Nairobi with an average of 12 years residency and the majority of its residents are chronically poor. The 2009 national census[4] stipulates that there are 3,129 households in Korogocho. However, Concern Kenya's current listing is at 9,492 households. Most of the population (78 per cent) are casual labourers who are paid on a daily basis, 67 percent of their household income is spent on food with the very poor spending up to 150 percent. Thirty eight percent of households are female headed, which further exacerbates the situation since women earn 30 percent less than their male counterparts for doing the same work. It is therefore inevitable that many households in Korogocho are vulnerable to food insecurity. These households can hardly cope with shocks such as increased food costs and decrease in wages. While the Government of Kenya has various social protection programmes, Concern survey data highlights that less than 1 percent of the Nairobi urban slum population is enrolled in these safety net programmes.

> "This is a serious humanitarian crisis as health facilities in the slums cannot manage such big numbers

Korogocho is known as one of the most insecure informal settlements in Nairobi. The shift from chronic poverty to an acute emergency situation may lead vulnerable households to adopt negative coping strategies. The IDSUE survey showed that negative coping strategies are on the rise. For instance the uptake of credit increased from 54 to 57 percent and the rate of withdrawal of children from schools rose to 38 percent up from 23 percent. Such a situation may lead to children being forced to work and contribute to household income. Other negative coping strategies such as reducing the number of meals per day are also expected to increase.

In conclusion, as Concern continues to work with the most vulnerable in the urban slums, the surveillance system needs to be institutionalized by the Government of Kenya to assist in monitoring the urban situation so that they can activate assistance to the urban poor in a timely manner. The IDSUE tool is meant to demystify urban and rural poverty so that real time support can reach the most vulnerable. The IPC should also adopt this tool so that humanitarian actors working in urban slums don't have to rely on indicators developed for a rural setting.

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The Fight Hunger First Initiative

By Andrea Sonntag, Welthungerhilfe

It was the same food that Parmila Hembram, 22, a resident of Siri village in Deoghar district, in the Indian state of Jharkhand, used to dish out for every meal – rice, potatoes and, sometimes, dal. Despite the fact that wild greens and pumpkin grew in the vicinity of her home, they were never generally cooked because, traditionally, food in the family was all about rice and potatoes.

According to Rajesh Jha of the Centre for World Solidarity (CWS), a local non-government organisation that is involved in combating malnutrition in the region under the Fight Hunger First Initiative (FHFI), when they started working in the district, people were not aware of the need to have an adequate and balanced diet. *"When we conducted a study on nutrition security in the district of Deoghar in rural Jharkhand",* he says, *"what came to our notice was that people just liked to eat rice and potato. Their idea of 'proper food' was the quantity consumed and not the quality."*

The study revealed that almost 53 percent of the children younger than five were stunted, suffering from chronic undernutrition and 23 percent were wasted, due to acute undernutrition[1].

Despite significant progress in reducing child underweight in the past few years, India still has the highest number of chronically malnourished children under five with nearly every second child under five being stunted (UNICEF 2014)[2].

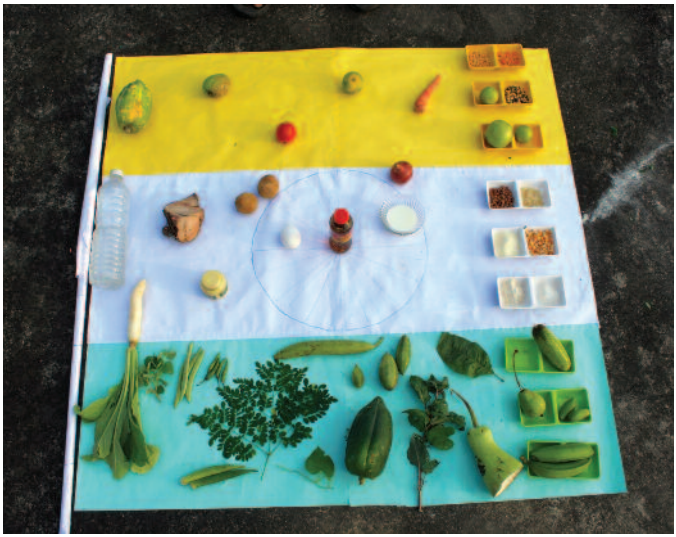
> Joint programming, knowledge-sharing, and advocacy by the partners of the Fight Hunger First Initiative provide the opportunity to identify and scale-up promising approaches to fight malnutrition at state and national level

Access to food is unevenly distributed and public policies still focus on quantity (energy supply) while investments in improving nutrition security such as the quality of diets and sanitation are lagging behind[3].

The farmers in the study area in Jharkhand typically produce less than half of the food requirements on their own fields. Apart from the lack of access to nutritious food, poor hygiene and sanitation practices, low quality health services and education, low status of women and discrimination against tribal groups are among the key causes for the severe nutrition situation.

The Fight Hunger First Initiative (FHFI) addresses these problems from a human rights-perspective. Developed through a consultative process by ten Indian partners and German NGO Welthungerhilfe in early 2011, the programme aims at significantly improving the key indicators related to food and nutrition security at the sub-district level within a six-year period, in the most vulnerable parts of five Indian states. The programme covers 48,000 households, or more than 186,000 people in 11 districts of Odisha, West Bengal, Madhya Pradesh, Jharkhand and Karnataka.

To improve the nutrition and health of mothers and children, the communities are engaged by CWS staff through a participatory learning and action (PLA) methodology. Women's and village groups assess their family situation and learn about the vicious cycle of undernutrition being passed from one generation to the next and develop strategies for breaking it at every stage – childhood, adolescence, pregnancy, and lactating period. The training provided highlights the different elements of a healthy diet throughout the life cycle, personal and domestic hygiene, techniques to limit nutrient losses during food storage and preparation, and appropriate maternal and childcare practices. In addition, the villagers get support for the production of nutritious food using agroecological or integrated farming practices.



The photo shows the Indian flag. Local organisations use the flag to promote dietary diversity. Photo by Rupam Roy, 2014.

Women are motivated to add variety to their daily meals by using the "trianga bhojan", or tricolor approach. They are encouraged to include all the three colors of the Indian flag –orange, white and green– into their meals. The saffron-yellow foods like orange, mango, pulses, tomato, egg yolk, papaya contain Vitamin A and proteins; the white foods like rice, flat rice, puffed rice provide carbohydrate content, and the green foods like leafy vegetables contain minerals, such as iron and calcium, and vitamins.

For a steady supply of greens and other vegetables in her kitchen, Parmila created a small home garden. According to the CWS team's observations, none of the elements of the 'tiranga bhojan' are difficult to either source or cultivate locally. Yet, despite this, it proved difficult to change old habits. Often cultural practices prohibited the intake of certain nutrition-rich foods like soybean and mushrooms.

As to the experience of the partners participating in the initiative, nutrition and health education have proven to be more empowering if it involves dialogue and problem solving in addition to behaviour change communication. Local women and men are encouraged to share their perceptions and identify priorities for action to tackle the underlying social and political determinants of undernutrition. For example, families become aware of unhealthy traditional practices such as certain food taboos or continuous hard working conditions for pregnant or lactating mothers and realize the need for change.

Furthermore, community-based organizations are empowered to claim access to entitlements and actively participate as citizens in development processes. The Fight Hunger First Initiative is designed on the premise that, in the longer term, people cannot break out of the vicious cycle of poverty and malnutrition unless basic rights, such as adequate access to productive resources, as well as public services are met and related public services are put in place.

For example, the villagers use community score cards and social audits to monitor service delivery by local governments and demand improvements in the reach and quality of health and education services. In addition, health staff are trained to improve the quality of their services providing counselling, check-ups, growth monitoring, supplements, deworming, and immunization to pregnant women and their children.

While it is too early to provide comprehensive evidence of the programme's impact on reducing malnutrition, availability and access to food of adequate quantity and quality as well as the diversity of households' diets have increased. Furthermore, access to government schemes such as the Rural Employment Guarantee Scheme for income generation has increased. The quality of health services has improved and attendance rates have gone up. Extensive child tracking procedures during the critical period from conception up to the age of two, and counselling show positive results with regard to improvements of feeding and caring practices.

In conclusion, Joint programming, knowledge-sharing, and advocacy by the partners of the Fight Hunger First Initiative provide the opportunity to identify and scale-up promising approaches to fight malnutrition at state and national level.

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The challenge of hidden hunger

Extract from 2014 Global Hunger Index

By **Klaus von Grebmer, Amy Saltzman, Ekin Birol, Doris Wiesmann, Nilam Prasai, Sandra Yin, Yisehac Yohannes, Purnima Menon, Jennifer Thompson and Andrea Sonntag**

Introduction

Hidden hunger, also known as micronutrient deficiency, afflicts more than 2 billion individuals or one in three people globally (FAO 2013a. The State of Food and Agriculture. Rome. http://bit.ly/KAn84P).

Its effects can be devastating, leading to mental impairment, poor health, low productivity, and even death. Its adverse effects are particularly acute, especially within the first 1,000 days of a child's life from conception to the age of two, resulting in serious physical and cognitive consequences. Even mild to moderate deficiencies can affect a person's well-being and development. In addition to affecting human health, hidden hunger can curtail socioeconomic development, particularly in low-and middle-income countries.

Hidden hunger is a form of undernutrition that occurs when intake and absorption of vitamins and minerals/trace elements (such as zinc, iodine, and iron) are too low to sustain good health and development. Factors that contribute to micronutrient deficiencies include poor diet, increased micronutrient needs during certain life stages, including pregnancy and lactation, and health problems such as diseases, infections, or parasites.

While signs of hidden hunger, such as goiter from inadequate iodine intake, become visible once deficiencies become severe, the health and development of a much larger share of the population is affected by less obvious "invisible" effects, which explains why micronutrient deficiencies are often referred to as hidden hunger.

Much of Africa south of the Sahara and the South Asian subcontinent are hotspots where the prevalence of hidden hunger is high. The rates are relatively low in Latin America and the Caribbean where diets rely less on single staples and are more affected by widespread deployment of micronutrient interventions, nutrition education, and basic health services. Although a larger share of the burden of hidden hunger is in the developing world, micronutrient deficiency, particularly iron deficiency, is also widespread in the developed world.

Health impacts

The health effects of hidden hunger can be serious. Micronutrient deficiencies cause an estimated 1.1 million of the 3.1 million child deaths each year as a result of undernutrition. Vitamin A and zinc deficiencies adversely affect child health and survival by weakening the immune system. Lack of zinc leads to stunting and impairs growth in children. Iodine and iron deficits prevent children from reaching their physical and intellectual potential. Nearly 18 million babies a year are born with brain damage due to iodine deficiency. Iron deficiency saps the energy of 40 percent of women in the developing world.

Although pregnant women, children, and adolescents are often cited as populations most affected by hidden hunger, it impairs the health of people throughout the life cycle, leading for example to malnourishment among adults and increased mental impairment among the elderly.

Economic impacts

Vitamin and mineral deficiencies impose a significant burden on the affected persons and societies, both in terms of health costs and negative impacts in lost human capital and reduced economic productivity. Hidden hunger impairs physical growth and learning, limits productivity, and ultimately perpetuates poverty in a continuous cycle. The return on investment in nutrition on the other hand can be high. The Copenhagen Consensus Expert Panels consistently find nutrition interventions cost-effective. In 2008, it ranked supplements for children (Vitamin A and zinc), fortification (iron and iodine), and bio-fortification among the top five best investments for economic development (http://www.copenhagenconsensus.com/sites/default/files/cc08_results_final_0.pdf).

Solutions to Hidden Hunger

Increasing dietary diversity is one of the best ways to sustainably prevent hidden hunger. In the long term, dietary diversification ensures a healthy diet that contains a balanced and adequate combination of macronutrients (carbohydrates, fats, and protein); essential micronutrients; and other food-based substances such as dietary fiber. Effective ways to promote dietary diversity involve food-based strategies, such as home gardening and educating people on better infant and young child feeding practices, food preparation, and storage/preservation methods to prevent nutrient loss.

> “To sustainably tackle hidden hunger, a multisectoral approach is needed. It must include action on agriculture, health, water and sanitation, social protection, education, and empowering women

Commercial food fortification adds trace amounts of micronutrients to staple foods or condiments during processing to help consumers get the micronutrients they need. Fortification has been especially cost-effective for iodized salt, which 71 percent of the world's population has access to. Other common examples of fortification include adding B vitamins, iron, and/or zinc to wheat flour.

Bio-fortification is a relatively new intervention that involves breeding food crops to increase their micronutrient content. To date, bio-fortified crops released to farmers include vitamin A orange sweet potato, vitamin A maize, vitamin A cassava, iron beans, iron pearl millet, zinc rice, and zinc wheat. One of the most cost-effective interventions for improving child survival is vitamin A supplementation.

To sustainably tackle hidden hunger, a multisectoral approach is needed. It must include action on agriculture, health, water and sanitation, social protection, education, and empowering women.

Concluding thoughts

While the international community has long recognized the importance of food security, it has not always accorded nutrition security the attention it deserves. As a result, hidden hunger continues to exact a devastating human, societal, and economic toll. Every man, woman and child has the right to adequate food in a quantity and quality sufficient to satisfy their dietary needs. One of the key challenges going forward is to shine a light on food quality, to address hidden hunger so that it is eliminated.

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This edition of Knowledge Matters along with previous editions are available on Knowledge Exchange at: http://concern365.net/

Knowledge Matters basics

Knowledge Matters is a Concern Worldwide internal organisational peer reviewed publication. The publication is committed to encouraging high quality analysis in the understanding of Concern's work. Concern staff document their ideas and experiences through articles. Articles are very short – 600 – 1,000 words. Usually you only have space to make two or three interesting points. Here are some tips on writing a short feature article:

- Start by imagining your audience – a Concern colleague. Why are they interested – why do they want to read what you have to say? When you identify what your most important point is, say it straight away, in the title or first sentence.

- What can others learn from your story? Focus on this. Remember to back up your story with evidence. This can be got from evaluations.
- It's easier to get people reading if you start with the human perspective – mentioning real people and real-life events. (You don't have to give names).
- Use short sentences. Use Concern's style guide to help you.
- Keep paragraphs to a maximum of six lines long.
- Use clear language. Many of the readers of Knowledge Matters are non-native English speakers, so think carefully about using idioms or colloquial language that might not be easily understood by others.
- Always avoid assuming too high a level of knowledge of the topic you are writing about, on the part of the reader.
- Use active sentences ('we held a workshop' not 'a workshop was held by us')
- Use short and clear expressions.
- Keep your title short - no more than eight words.
- Where necessary use photos to accompany the narrative but ensure that you follow the Dochas Code of Conduct on Images and Messages.

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For whom is the publication

All staff involved in designing, implementing , managing, monitoring, evaluating and communicating Concern's work. This publication should also be shared with partners.

What this publication includes

- Promising practice
- Organisational learning
- Promotion of multi-sectoral and integrated approaches to programming
- Links to full reports

What it doesn't include

- Targeted recommendations
- Additional evidence not included in the papers cited
- Detailed descriptions of interventions or their implementation

Editorial Working Group

Key words

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