

# Field Exchange

Emergency Nutrition Network



- **Food, goats & cash for assets in Kenya**
- **SMART anaemia analysis in Bolivia**
- **Cross-sectoral approach to Konzo in DRC**
- **Food security in Afghanistan**
- **Early warning system in Somalia**
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This is another bumper issue of Field Exchange, with eight field articles and just under 20 research summaries. On the one hand, we apologise for the ever-growing volume of our publication and on the other, we are pleased that so many field practitioners want to write up and share programming experiences. There also seems to be an ever increasing volume of research out there that warrants dissemination. Usually a theme or two leaps out at us once we have amassed our Field Exchange content – not so this time, and we have a broad mixture of material for you to read. So for a change, this editorial doesn't attempt to link articles by themes but instead, simply highlights field articles and research pieces which we feel are of particular interest. Inevitably this will be subjective and we hope that this doesn't stop you looking at all the contents in this issue.

Four articles get a special mention in this editorial. The piece by Adèle Fox at Concern Worldwide describes a programme to build capacity of multi-sector actors at woreda, kebele and community levels in Ethiopia to deliver effective infant and young child feeding (IYCF) messages as part of the productive safety net programme and encourage social and behaviour change. It went beyond the usual communication channels, engaged and coordinated with community leaders and worked across sectors to address barriers to good IYCF practice - policies around women's maternity leave were strengthened, agricultural support addressed food insecurity, and support to water and health services aimed to prevent common illnesses. It appears to be yielding sustainable and substantial improvements in IYCF practices.

Marie-Morgane Delhoume, Julie Mayans, Muriel Calo and Camille Guyot-Bender from ACF- USA have written an article about tackling Konzo in DRC through introduction of cassava retting techniques and improving access to water. This is a nice follow on to a baseline study shared in Field Exchange 41 that found a 1% incidence in the area. ACF-USA used a community outreach and nutrition education and training strategy to get the information across at large scale, coupled with interventions to improve dietary diversification, water access and agricultural processing. At the end of the project, households reported soaking cassava for longer periods across the intervention area (critical to reducing Konzo risk). Impressively, the intervention had at least some part in effecting an 84% reduction in incidence of Konzo between 2010 and 2011. The greatest reduction in new cases was observed among the under 5 years age group.

An article by Geoff Brouwer describes a comparative study of four relief and emergency response activities – Cash-for-Assets (CFA), Goat-for-Assets (GFA), and two Food-for-Assets (FFA) projects – implemented by World Renew (formerly the Christian Reformed World Relief Committee (CRWRC)) in response to the 2011 drought in Kenya. The objective was to gather a deeper understanding of the various modes of asset-exchange and their differences as emergency responses. The authors conclude that while cash transfer programmes may be more effective where markets function, other key factors need to be considered in selecting an intervention including gender participation, beneficiary preference, project ownership, adverse impacts and behavioural responses. The article shows that while there are many similarities between different models of asset exchange, they are not interchangeable and cannot be expected to achieve identical results.



Group of women participating in a focus group discussion



A final article to mention is by Kate Sadler of Tufts University. This is a study that follows on from earlier work about the importance of milk in the diet of children of pastoralists in the Somali region of Ethiopia. This latest study shows that through targeted livestock support to milking animals that stay close to women and children during dry season and/or drought (overall a relatively small proportion of the whole herd), milk production and consumption among children is improved, and their nutritional status benefits.

We have a very large section of research summaries in this issue ranging from clinical trials of food products to reviews of the whole humanitarian system.

One recent study examines the effect of including a lipid based nutrient supplement (in the form of a Ready to Use Supplementary Food (RUSF)) with a household food distribution in Abeche, capital of Chad, on the wasting incidence during the seasonal hunger gap. Interestingly, the study found that although the RUSF improved haemoglobin status and linear growth, as well as reducing diarrhoea and fever episodes, there appeared to be no effect on preventing acute malnutrition. Another study by Martha Mwangome and colleagues in Kilifi, Kenya assesses the accuracy and reliability of using MUAC, length for age and weight for length in measuring nutritional status of infants under six months of age. They found that community health workers can be trained to take MUAC, weight and length measurements accurately and reliably among infants age <6 months but that length-based z score indices (length for age and weight for length) are the least reliable anthropometric measures.

There is also a summary of a recent systematic review on the effectiveness of agricultural interventions that aim to improve nutritional status of children. Interventions included were bio-fortification, home-gardening, aquaculture, small scale fisheries, poultry development, animal husbandry and dairy development. The review found that interventions had a positive effect on production and consumption of the agricultural goods promoted, but that there was no evidence of a change in total household income and little evidence of a change in the overall diet of poor people. Furthermore, there was no evidence found of an effect on iron intake or on the prevalence of under-nutrition, although there was some evidence of a positive effect on the absorption of vitamin A.

We also include a series of letters from the World Health Bulletin about corporate sponsorship in the public health sector, specifically relating to alcohol giant SABMiller who received a grant from the Global Health Fund to carry out an education intervention aimed at young adults in drinking establishments in South Africa. The letters reflect divergent views about this type of corporate sponsorship which to some extent, rehearse the same arguments around corporate sector involvement in the nutrition sector.

Another review by HelpAge International and Handicap International quantifies the funding provided by donors to meet the humanitarian needs of two of the most vulnerable groups: older people and people with disabilities. It does so by analysing the amount of humanitarian funding targeted at these two groups through the UN Consolidated Appeals Process (CAP) and Flash Appeals in 2010 and 2011. It is incredible to realise that in 2010 and 2011, only 145 (2.4%) of the 6,003 projects submitted to the CAP and Flash Appeals included at least one



Dr. Iqbal Kermali, Afghanistan, 2009

activity targeting older people or people with disabilities, and 61 of these were funded (1%). Not surprisingly, the authors conclude that if the humanitarian community is to fulfil its commitment to the impartial provision of humanitarian assistance to those in greatest need, it must take urgent steps to address the needs of these two vulnerable groups.

Finally, we have two pieces that address the state of the humanitarian system. A recent ALNAP report presents a system-level mapping and analysis of the performance of the international humanitarian assistance between 2009 and 2011. One of the major recommendations in the report is that with the rise of the 'resilience' agenda, it is critical that new financing instruments are considered to provide the long-term, flexible financing that these broader non-relief interventions require. These findings are also reflected in a recent Tufts University published paper which explores the relationships between climate change, humanitarian crises, and humanitarian response through a review of published and grey literature. Drawing heavily on the CRED data base, the authors state that over the past 11 years, climate-related disasters have been killing an average of 33,520 people a year, and, as critically, affecting the lives of over 211 million people. The paper goes on to explore the likely impact of climate change based on a number of scenarios. Major challenges identified include the fact that prevention, mitigation, and adaptation policies are not in place, capacity to implement policies is weak and that systematic data collection to evaluate and report response results does not exist. A number of quotes from the conclusions of this report are well worth repeating in this editorial:

*"The evidence also suggests that humanitarian operations are no longer synonymous with emergency operations. Most humanitarian assistance today goes into operations that have been running for five years or more. As much as 45% goes into programmes more than eight years old."*

*"In these long-term crisis environments, in Ethiopia, Sudan, Afghanistan, Palestine – all environmentally fragile states – a major opportunity is being missed to use aid to transform the way communities and their states develop the necessary economies and governance for the future."*

*"The humanitarian aid system evolved as a Western based interventionist endeavour, seeing crises as abnormal and responding through exceptional interventions."*

*"The old methods of working around government systems, rather than with them, have to be challenged. In many crisis-affected states, aid agencies need to see themselves as long-term partners of the state, providing response services, but must also work to build resilience into livelihood systems and the infrastructure of hazard-exposed populations. They need to view recovery from crisis as a process of change to a more resilient state. Such change will not be easy. The humanitarian response sections of aid agencies have tended to see their work in terms of logistics and the impartial, neutral supply of live-saving aid and have shunned much of the political analysis of the development sector, let alone developed an analysis of complex global processes"*

*"International humanitarian aid agencies have grown to become large, multinational organizations, turning over billions of dollars each year and playing a critical role in the creation of international civil society norms. They now resemble major transnational corporations and find themselves increasingly challenged by the risk aversion and inertia that comes with scale and an operational model that is still essentially about organizational control."*

There is much food for thought here. While criticism is levied at the humanitarian aid system, it could be argued that the system has developed mainly due to whole scale failure of development actors to include the vulnerabilities and risks of 'fragile states' in their operations. Let's hope therefore that the rapidly emerging resilience agenda proves more than the 'emperor's new clothes' and enables a continuum of approach at country level and within agencies (including donors and their funding mechanisms). One marker of progress might be a new profile of development-orientated partners stepping up to engage in recovery activities especially. On that note, we welcome new faces to the pages of Field Exchange and encourage our seasoned readership to share this publication with your colleagues in other sectors and in particular those working in the development arena.

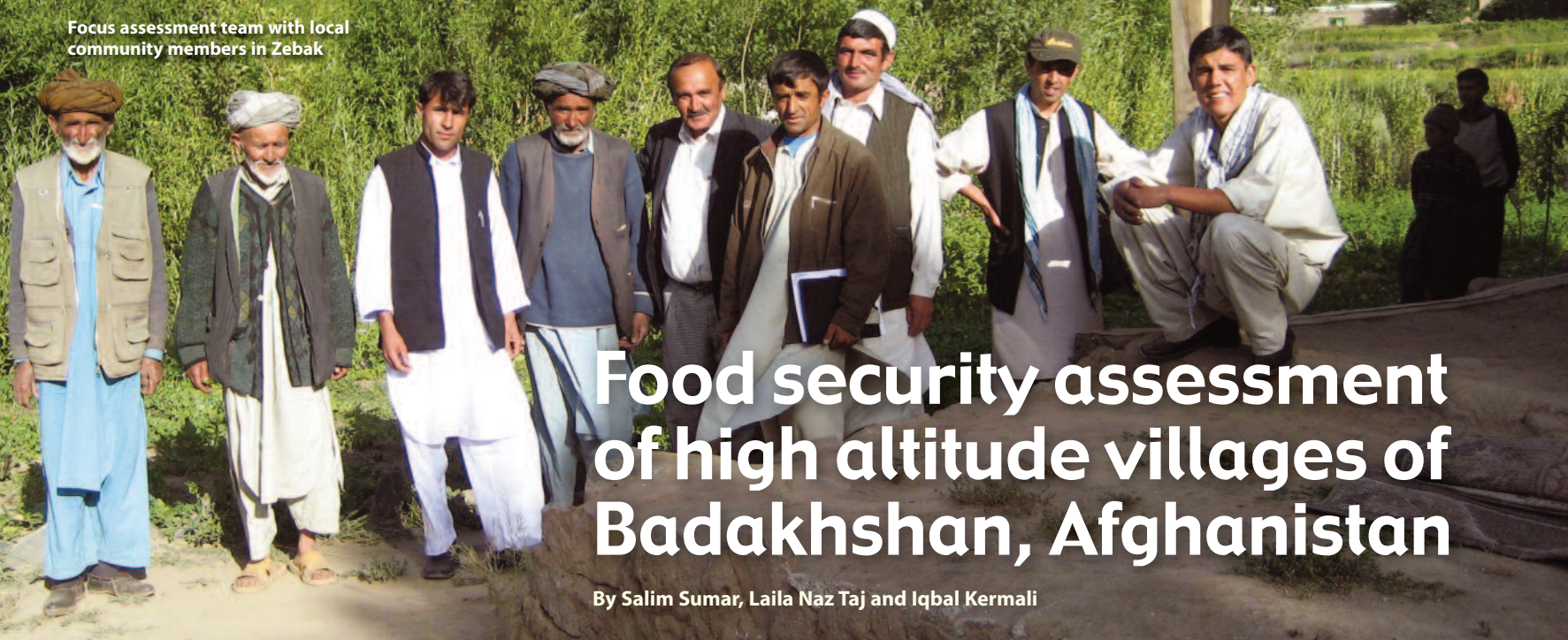
We hope you enjoy another edition of what is ultimately your publication, Field Exchange.

Jeremy Shoham and Marie McGrath

**Any contributions, ideas or topics for future issues of Field Exchange? Contact the editorial team on email: [office@enonline.net](mailto:office@enonline.net)**



Focus assessment team with local community members in Zebak



# Food security assessment of high altitude villages of Badakhshan, Afghanistan

By Salim Sumar, Laila Naz Taj and Iqbal Kermali

Dr. Iqbal Kermali, Afghanistan, 2009



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Dr Iqbal Kermali has a strong international background with significant experience in relief, rehabilitation and development programmes,

particularly Central Asia. His specialisation includes agriculture development, livelihoods and management of natural resources. He has worked for FAO and the Aga Khan Development Network in Afghanistan. Currently he is the Team Leader and Training Coordinator of the Asian Development Bank-funded Capacity Development for the Western Basins Water Resources Management Project and is based in Herat, Afghanistan.

The authors acknowledge the organization support of Focus Humanitarian Assistance and the Aga Khan Development Network in preparing this article. They wish also to acknowledge the contributions made by the staff of Focus Humanitarian Assistance, Afghanistan, in particular Noor Kashani and Hesamuddin Hashuri.

Afghanistan is a landlocked country that is bordered on the north by Turkmenistan, Uzbekistan and Tajikistan, on the extreme north-east by China, on the east and south by Pakistan, and by Iran on the west. The country is divided east to west by the Hindu Kush mountain range, rising in the east to heights of 24,500 feet (7,485 m).

In its recent past, Afghanistan has endured decades of political instability, protracted conflict and natural disasters, all of which have contributed to various insecurities in the country. As such, progress with regard to human development has been slow, with life expectancy marginally increased to 44.5 years for men and 44 years for women<sup>2</sup>. Most other human development indicators also remain unacceptable and are among the worst in the world, including maternal mortality rates (1,600 deaths per 100,000 live births) and under 5 mortality rates (199 per 1,000 live births). Based on the broader set of the United Nations Development Programme (UNDP) human development index indicators (health, education, living standards), Afghanistan ranks 181 out of 182 countries.

Almost half of the estimated population of 25 million still live below the poverty line and the nation faces many challenges, particularly with regards to poor nutrition and food insecurity<sup>3</sup>. Approximately half of Afghan children under 5 years are chronically malnourished and over a third are underweight. In addition, three-quarters of all children under 5 years suffer from critical micronutrient deficiencies, most notably of iron and iodine. These poor nutritional outcomes are closely linked to the state of food security in the country. Food security and its consequences vary considerably across the 34 provinces in Afghanistan, reflecting the diversity of social and economic conditions<sup>4</sup>.

## FOCUS in Afghanistan

Focus Humanitarian Assistance (FOCUS) has been implementing emergency response and rehabilitation activities in Afghanistan since the 1990s. FOCUS also work in the most remote (high altitude) regions of eastern Afghanistan. As a part of its activities,

detailed food security assessments are conducted at regular intervals. This information is shared with its partners including the government and international organisations, especially the World Food Programme (WFP). The assessment described in this article was conducted in Badakhshan, one of the 34 provinces of Afghanistan with a population of 2 million inhabitants.

## Methodology

The study conducted in 2009/2010 profiles food security in the high altitude regions of Badakhshan province. The province is located in the north-east of the country and has a total area of 44,060 km<sup>2</sup>, most of which is occupied by the Hindu Kush and Pamir mountain ranges.

Food production is limited by insufficient arable land, extreme winters, a shorter growing season, poor marketing and lack of inputs.

A team of four trained assessors, accompanied by community volunteers, visited 195 villages over a period of ten months, starting in mid-June, 2009. The team interviewed key informants including members of the village councils, officials of the local and district governments and members of civil society organisations. A semi-structured assessment form was designed, translated into Dari and validated to facilitate use at the field level. The team was also trained in conducting semi-structured interviews and in collecting information from communities. Information collected included data on demographics, livelihoods, state of food security, causes of and any coping/management strategies employed to deal with food insecurity. This information was translated from Dari into English and compiled into a database.

<sup>1</sup> <http://www.akdn.org/>

<sup>2</sup> Afghanistan Overview, Fighting Hunger Worldwide, *World Food Programme*, [online] Available at <http://www.wfp.org/countries/Afghanistan/Overview> > [Accessed] 10 May 2012

<sup>3</sup> Summary Evaluation Report Afghanistan, 2010, *World Food Programme*, [online] Available at <http://one.wfp.org/eb/docs/2010/wfp213169~1.pdf> > [Accessed] 16 May 2012

<sup>4</sup> Poverty and Food Security in Afghanistan, 2012, *The World Bank Economic Policy & Poverty Sector South Asian Region*, [online] Available at [http://moec.gov.af/Content/files/FSR\\_v7.pdf](http://moec.gov.af/Content/files/FSR_v7.pdf) > [Accessed] 18 May 2012



Finally, the information collected for all the villages at district level were consolidated, reviewed and validated by the local representatives and the non-governmental organisations (NGOs) and UN agencies working in the area. A copy of the information collected was provided to the respective village leader for future reference.

## Results

The assessment focused on 195 villages at high altitudes and examined both agro-ecological (e.g. altitude, wheat yields) and socio-economic factors (e.g. market access, infrastructure, and livelihoods) in relation to food security.

A substantial number of the 195 villages surveyed were found to be food insecure despite various efforts to rehabilitate agricultural systems, improve livelihoods and mitigate against disasters. These efforts included humanitarian and rural development activities by various UN and other international agencies, such as food for work and fertiliser distribution, since the 1990s.

Overall, results of this study indicated insufficient support, infrastructure and access to markets and frequent shocks from floods, landslides, and droughts. Furthermore, demands on natural resources and recent (sharp) increases in the price of food, fuel and transportation had all contributed to increasing food insecurity and the vulnerability among the rural populations. A recent World Bank survey indicated similar concerns with regards to food insecurity and vulnerability among the population, with 70% of the local population being calorie deficient and 61% considered to be in poverty<sup>5</sup>.

Despite sharing international borders with Pakistan, Tajikistan and China, international trade links barely exist outside of narcotics. Official trade exists only with Tajikistan across two border posts, both of which are difficult to access (especially in winter). There is no major electricity grid and the first paved main road (linking to neighbouring Takhar) came to the province in 2010. Badakhshan's inaccessibility and lack of available agricultural land has resulted in a slow and generally underdeveloped local economy.

## Altitude

Badakhshan province is largely mountainous (reaching as far up as 7485 m), allowing for little agriculture except animal husbandry, usually of sheep and goats. The population surveyed is mostly settled in higher altitude areas: 49% at 2,500m to 3,000m range followed by 24% at 2,000m to 2,500m range. Fourteen per cent of the villages are at less than 2,000m while 13%

are at more than 3,000m. This is shown in Figure 1 which plots the altitudes of individual villages of the nine districts surveyed.

Villages located above 2,000m (86% of those surveyed) depend mostly on subsistence farming for food and are generally food insecure and characterised by both low food consumption and lack of dietary diversity. These mountainous areas have only one crop per year and there is very little arable land for cultivation. In general, most communities in these areas are geographically isolated because of poor or no roads and they have little or no access to seasonal food markets or health facilities, particularly during winter. The traditional livelihood system in these areas is primarily livestock husbandry.

## Overall living conditions

The overall living conditions for each village were assessed by the local village informants using simple and local Dari language terminology (translated into English for analysis). These keywords roughly equated to the village as 'very poor', 'poor', 'sufficient', 'good' and 'very good'. These simple and qualitative scores are therefore based on informant's perception relative to other villages in the province. Results showed that 102 villages were below normal (poor or very poor), 33 villages were normal (sufficient), and the remaining 60 villages above normal (good or very good). While, the data was encouraging in identifying a significant number of villages above normal, the majority of villages were below normal, indicating a worrying trend. The geo-political instability in the province presents a further risk as in most cases, the local, central and provincial authorities remain weak.

## Livelihoods

Diversity of income streams outside of the agricultural sector is a key component to ensuring food security. The main sources of on-farm income in the villages were crop production (58%) and livestock (30%), followed by fruit production (7%) and forestry (5%) (see Figure 2).

Only 6.5% of the total population is employed in the off-farm sector. About 52% of off-farm employment is in the work force (labourers), followed by government service mostly in education (28%), military (11%), private service (5%), NGOs (5%), and business/shopkeepers at (4%).

On average, 11% of the households in the districts assessed receive external support, usually as remittance from family members working in other parts of Afghanistan or in the

neighbouring countries. With sufficient infrastructure and investment, it is clear that there exists a vast labour pool which can be channelled into productive industries.

Despite popular belief, there is no significant production of narcotics in the area. However, trade involving external actors is evident along the border with Tajikistan. There is no monetary gain to the villages assessed through narcotics production or through trade. However, narcotics are readily available to the residents and thus represent a large monetary loss to the families whose members are addicts. The overall addiction rate in all the villages assessed was estimated at approximately 4%. This compares to a national figure of 8% of the population aged 15 to 64 years. The lower addiction rates in Badakhshan are due primarily to improved security in the region and the population being more aware of the negative impact of consuming and trading in narcotics. There also appears to be a correlation with the geographic areas of production that are mainly in the northern and southern regions of the country<sup>6</sup>.

## Food security conditions

Food secure villages were also scored based on the local knowledge of the informants using local Dari terminology. The informants scored the general food security conditions of their respective villages in the better year, worst year and the previous year (2008). Food secure villages were scored either as normal or borderline.

In an average year<sup>7</sup>, 99 villages are food secure (17 villages are normal and 82 villages are borderline) and 96 are insecure (of which 39 are very insecure). The number of very food insecure villages in 2008 was 56, i.e. it was a very bad year. The average annual food gap duration in the villages is 58 days, and the average number of households within a village that are food insecure is 80%.

In a bad year, the percentage of food insecure households is higher than 90% in all areas and is 100% in 10 of the 13 districts. In the face of such conditions, families employ various (damaging) coping mechanisms; respondents indicated that they have on different occasions resorted to selling assets, migrating, purchasing

Figure 1: Altitude of surveyed villages

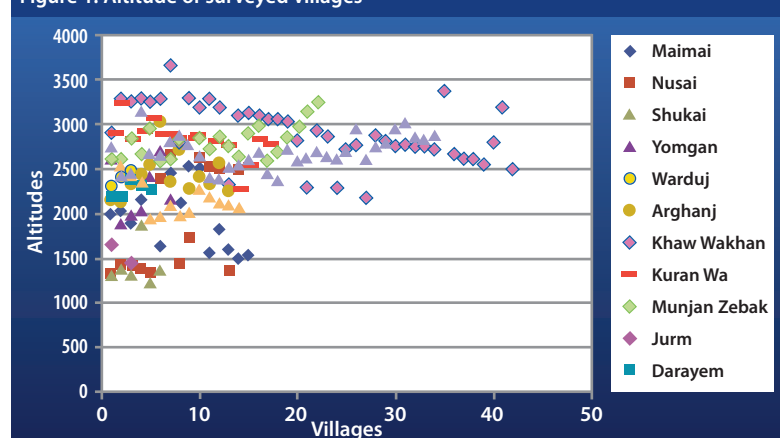
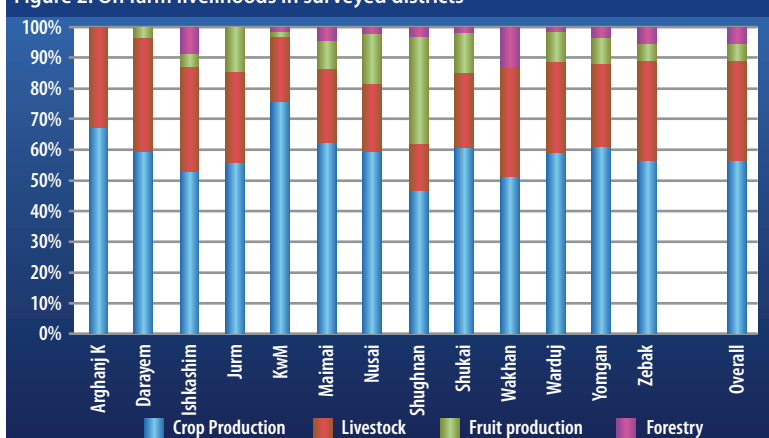


Figure 2: On farm livelihoods in surveyed districts



<sup>5</sup> Anon, 2011, Afghanistan, *World Bank Provincial Briefs*, [online] Available at: <<http://siteresources.worldbank.org/AFGHANISTANEXTN/Resources/305984-1297184305854/ProvBriefsEnglish.pdf>> [Accessed 13 January 2012]

<sup>6</sup> Drug Use in Afghanistan, Executive Summary, 2009, *United Nations Office of Drugs and Crime*, [online], Available at <http://www.unodc.org/documents/data-and-analysis/Studies/Afghan-Drug-Survey-2009-Executive-Summary-web.pdf> > [Accessed 25 May 2012]

<sup>7</sup> Average year score is derived from the scores for the better and worst years.





Dr. Iqbal Kermali, Afghanistan, 2009

Focus staff conducting interviews with community informants

food on credit, increasing child labour, and begging.

### Overall causes of food insecurity

The villages surveyed identified a number of different causes of food insecurity. In 186 villages, lack of agricultural inputs is the main cause of food insecurity followed by damage from hazards (138), poor markets (133) and lack of employment (118). The effects of natural disasters are exacerbated by the lack of infrastructure and the isolation of villages strung out along high mountain valleys, causing disruption to food production. Transportation to and access to agricultural inputs and products for the isolated and remote villages is always difficult due to lack of formal roads and/or availability of inputs. This is particularly challenging during winter, given the volume of snow or at times of landslides and floods, when assistance is most needed. In addition, lack of capital or unusually high price increases for food results in communities having to cope by borrowing, selling or exchanging other assets to pay debts and/or to get more cash to buy food during shortages or emergencies. Addiction to drugs was also another cause of food insecurity among the communities.

### Wheat yields and prices

Wheat is the main staple food for most Afghans. In many villages assessed, there are

no local markets and the population depends on markets in the neighbouring big towns to buy this staple. Moreover, availability varies from month to month.

Yield of irrigated wheat is a good indicator of food productivity in these areas. Overall, the 2008 average yield in the villages (742 Kg/ha) was lower compared to 907 Kg/ha in 2007 and 888 Kg/ha in 2006. The 2008 rain-fed wheat yield (408 Kg/ha) was on average 85% of the 2007 yield (481 Kg/ha) and 70% of the 2006 yield (587 Kg/ha).

On average, the rain fed yield was 47% of the irrigated wheat yield in the villages assessed. A similar trend was observed in previous years, with significantly lower yield in rain fed areas (34% in 2006, 47% in 2007 and 45% in 2008). In 2011, the combination of falling yield in both rain-fed and irrigated lands in Badakhshan, coupled with a decrease in the geographical area available for farming, has seen a significant wheat deficit arise (-86,100 metric tons). Wheat prices, in turn, have significantly risen since 2008, with prices of wheat and wheat flour having increased by 79% on the year before. The July 2011 price of all cereals increased by a further 60% above pre-food price crises (Jan-Oct 2007, FEWS, 2011)<sup>8</sup>.

### Conclusions and recommendations

The study conclusion reveals a population

#### Box 2: National Rural Access Programme (NRAP)

The National Rural Access Programme (NRAP), formerly called the National Emergency Employment Programme (NEEP), was launched in 2002. Its aims were to increase access to rural infrastructure for local communities and to provide employment opportunities for rural labours. As a result of a joint assessment of NEEP conducted by the World Bank and the government of Afghanistan in early 2005, the programme was restructured to make a smooth transition to more development-centred assistance in Afghanistan. The renamed 'National Rural Access Programme (NRAP)' has a more strategic focus on the provision and support of enhanced livelihoods. The Programme provides for the development of quality rural access infrastructure and capacity to maintain it (enabling rural road access to services such as markets, health care and schools) and in doing so, a mechanism whereby temporary employment will provide a safety net for vulnerable rural people.

NRAP is a joint national priority programme that is executed by Ministry of Public Works (MoPW) and the Ministry of Rural Rehabilitation & Development (MRRD). Under the two ministries, UNOPS is responsible for implementation and also provides technical support and capacity development of the ministries.

locked into a cycle of food insecurity with very few avenues of escape. The increased incidence of natural disasters coupled with a dependency on subsistence farming has meant that Badakhshan is a region blighted by poverty and very low living standards.

On the basis of information collected from the food security assessment and from discussions with community leaders, authorities and officials of civil society institutions, a number of inter-linked measures were recommended for responding to the repeated cycles of food crisis among the communities in Badakhshan. These include:

- Empower the Community Development Councils (CDCs) (see Box 1) in the target villages to play a leading role when planning and implementing any food security related activity at the village level.
- Further develop and implement a comprehensive food insecurity surveillance and response mechanism for the target areas, with the CDCs playing a major role.
- Strengthen support to create or increase the existing food stored in the stockpiles owned and managed by the communities.
- Continue emphasis on multi-dimensional agricultural approaches such as agriculture diversification, agro-enterprises and value added agriculture to reduce the food gap.
- Improve access to appropriate agricultural inputs through microfinance or other innovative credit programmes with emphasis on sustainability and economic viability.
- Cash transfers to the most vulnerable during food crisis can be made more sustainable by linking them to community managed revolving food stockpiles.
- Implement additional disaster mitigation projects that can also contribute to the local food economy by improving market access

<sup>8</sup> Anon, 2011, Afghanistan Food Security Outlook, *Famine Early Warning Systems Network (FEWS)*, [online], Available at: [http://www.fews.net/docs/Publications/Afghanistan\\_OL\\_2011\\_01.pdf](http://www.fews.net/docs/Publications/Afghanistan_OL_2011_01.pdf) [Accessed 13 January 2012]

#### Box 1: Community Development Councils (CDCs)

Community Development Councils (CDCs) in Afghanistan were first established under the National Solidarity Programme (NSP) which is the largest community development programme in the history of Afghanistan. Known in the local Afghan language of Dari as 'Hanbastagi Milli' and in Pashtu as 'Milli Pawastoon', it is based on the Afghan traditions of 'Ashar' – community members working together on a volunteer basis to improve community infrastructure and 'Jirga' – councils comprised of respected members of the community; and Islamic values of unity, equity and justice.

The primary role of the CDCs is to serve as a consultative decision-making body that includes men, women, and traditionally marginalised members of the community. It is selected by the community through fair and open elections. Through participation in NSP and other programmes, communities will acquire or strengthen the skills and attitudes necessary to define, manage, and govern their development.

CDC/NSP consists of four core elements:

1. Community mobilisation – facilitating elections to establish CDCs and helping CDCs identify priority sub-projects, prepare Community Development Plans, and implement approved subprojects.

2. Building the capacities of CDC and community members (both men and women) in participation, consensus-building, accounting, procurement and contract management, operations and maintenance, and monitoring.
3. Providing direct block grant transfers to fund subprojects
4. Linking CDCs to government agencies, NGOs, and donors to improve access to services and resources.

Two types of subprojects may be financed under NSP: public infrastructure (such as water supply and sanitation, irrigation, transport, hospital and school buildings) and human capital development (general education including health and hygiene, child development training, training on birth attendant training and productive skills training, e.g. kitchen gardens, animal husbandry, bee-keeping, food processing, and vocational education).

CDCs are encouraged to link with other programmes and take on additional responsibilities as their capacity evolves (and as allowed under Afghan law). Discussions are currently underway within the Government to identify an appropriate strategy for legally recognizing CDCs as a local government body and establishing mechanisms to link CDCs to district, provincial, and national government bodies.



and increasing water availability, in addition to reducing the hazard risks.

- Participate actively in processes such as the Afghanistan Humanitarian Action Plan<sup>9</sup> that are a potential source of funding for disaster response including food insecurity.

In addition to the above, four broad recommendations also emerge from the study for Badakhshan:

There needs to be recognition that food programmes do not represent the best method of achieving food security. Income-generating programmes are generally more efficient, such as the National Rural Access Programme (NRAP) formerly called the Afghan National Emergency Employment Programme (NEEP) and micro-finance programmes (see Box 2 for NRAP/NEEP). Regular wage incomes smooth consumption patterns, therefore also ensuring health and education security. These incomes can also be reinvested back into purchasing agricultural inputs, thereby ensuring a diversity of incomes and food sources within a single household.

It is important to appreciate that extreme weather events represent a major threat to food security in Afghanistan, and in particular in mountainous areas of Badakhshan where natural hazards are prevalent.

An approach that not only emphasises food security, but also outlines a path to food sovereignty should be considered. National programmes which engage locally governing CDCs are best situated to tackle this issue successfully.

Ensuring sustainable food production, resolving disputes related to land tenure, and stewardship of natural resources needs to be encouraged. Water conservation, food harvesting techniques based on indigenous knowledge, and low tech construction methods need to be intensified through basic technology transfer and extension work by agricultural aid agencies. Drought-resistant high market value crops should be identified and tested for long-term productivity.

In conclusion, only an integrated (and adaptive) approach will ensure a sustainable food security future in Afghan Badakhshan with improved health outcomes, especially among high altitude vulnerable communities. This is based on the recognition that extreme weather events, disasters, land degradation, lack of investment in infrastructure, poor trade links may all be a consequence and cause of poverty and therefore food insecurity in this province.

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<sup>9</sup> Ministry of Rural Rehabilitation and Development, access at: <http://mrrd.gov.af/en/page/69>

## Effect of adding RUSF to a general food distribution on child nutritional status and morbidity: a cluster randomised controlled trial

Child during appetite test at a health facility offering treatment in Monrovia, Liberia

### Summary of research<sup>1</sup>

#### Research

The authors of a recent study hypothesised that including a daily dose of 46 g of Lipid based Nutrient Supplement (LNS) as Ready to Use Supplementary Food (RUSF), for consumption by children between 6 and 36 months of age as part of a household food distribution programme would reduce cumulative wasting incidence during the seasonal hunger gap (June to October).

The study was conducted in the city of Abeche, the capital city of the Ouaddai region in eastern Chad. Since 2006, this part of the country has been characterised by chronic political instability, which has led to the decline in nutritional status of children under 5 years of age. Recently, the non-governmental organisation Action Contre la Faim – France (ACF-France) conducted two cross-sectional nutritional surveys of children under 5 years in Abeche. A first survey was conducted at the beginning of the rainy season (June 2009) and revealed a prevalence of wasting of 20.6%, with 3.2% severe wasting, using the National Centre for Health Statistics (NCHS) growth reference. A second survey was carried out during the post-harvest period (January 2010) and reported a wasting prevalence of 16.8%, with 2% severe wasting.

The study was conducted in seven vulnerable sectors of the city of Abeche that were preselected from a total of 45 administrative sectors. These seven sectors were identified based on data from a community network organised by ACF-France involving a set of socio-economic, sanitary and nutritional (proportion of children admitted to ACF-France nutrition rehabilitation programmes) criteria. The selected sectors were subdivided into 14 geographical clusters using main roads and rivers as cluster boundaries. The cluster was the unit of randomisation and random assignment was conducted through an official ceremonial gathering with officials and community members. Seven clusters were assigned to the intervention group and seven to the control group.

The researchers designed the study as a two-arm cluster-randomised controlled pragmatic trial, targeting children from 6 to 36 months of age from vulnerable households. A household was considered to be “vulnerable” when it met one of the following criteria: (1) household head being disabled, pregnant or lactating, or (2) an economic dependency ratio of 4:1 or more (number of economically inactive versus active household members). The inclusion criteria for the study were being non-wasted (weight-for-height >80% of the NCHS reference median, and lack of bilateral pitting oedema) and being from a “vulnerable” household.

The study used the NCHS growth reference for enrolment in the study, to conform with the Chad national protocol for the management of malnutrition. However, the researchers opted to analyze the data using the WHO international growth standards to make the results more comparable to recent studies. None of the study conclusions were altered when analysing the outcome data using the NCHS growth reference.

The primary study outcome was the cumulative incidence of acute malnutrition or wasting defined as weight-for-height Z-score (WHZ), or presence of bilateral pitting oedema. In order to detect a 50% reduction in the cumulative incidence of wasting over a period of 4 months, with a statistical power of 80%, a sample size of 1,220 children was calculated to be needed. Taking into account a study dropout of 15%, a total sample size of 1,435 children was projected. Secondary outcomes included mean WHZ change over time, prevalence of stunting at end point defined as height-for-age Z score (HAZ), mean HAZ change over time, mid upper arm circumference (MUAC) change over time, mean haemoglobin concentration at end point, prevalence of anaemia at end point (haemoglobin <110 g/l).

<sup>1</sup> Huybregts L et al (2012). The Effect of Adding Ready-to-Use Supplementary Food to a General Food Distribution on Child Nutritional Status and Morbidity: A Cluster-Randomized Controlled Trial. PLOS Medicine. [www.plosmedicine.org](http://www.plosmedicine.org). September 2012, volume 9, issue, 9, e1001313, pp 1-11



**Study interventions**

Households of both the intervention and control groups received a monthly food package representing a daily ration of 425g of sorghum, 25 g of legumes, 25 g of bleached palm oil, 20 g of sugar, and 5 g of iodized salt. This ration was estimated to cover approximately 86% (<1,800 kcal) of the daily energy requirements for a population at risk of an emergency. The number of food rations distributed per household was proportional to its size. Children from the intervention group received a monthly quantity of RUSF (Plumpy'Doz, Nutriset) representing a daily ration of 46g (<247 kcal/d). Recommendations on dosage and frequency of consumption by targeted children were made to caretakers and repeated at each follow-up visit. The intervention lasted 4 months (June 2010 to September 2010). Prior to this intervention, an acceptability test was conducted in a convenience sample of 30 non-wasted children.

The study team encouraged the mothers to bring their children with them to the monthly food distributions, regardless of their intervention status. Children were enrolled from early June to mid-July 2011 and scheduled to come for four follow-up visits. At each visit, child anthropometric measurements and morbidity were recorded. Children who were classified as moderately wasted (weight-for-height  $\geq 70$ -<80% of NCHS reference median) or severely wasted (weight-for-height <70% of NCHS reference median) were discharged from the study and referred to a community-based management of acute malnutrition programme located within the city's nutrition rehabilitation centres. All participating mothers were given a family food ration as described above.

The study team used a pretested questionnaire to collect data on socioeconomic and demographic characteristics of enrolled households. Child age at screening was estimated using a locally adapted event calendar if a birth certificate was unavailable. Anthropometric measurements were conducted monthly. Episodes of diarrhoea, respiratory tract infection, and fever were recalled for 1 week before the monthly interview. Respiratory tract infection was diagnosed through reports by the mother/ caregiver of persistent cough or difficulty in breathing during the last week (yes/no). A diarrheal episode was defined as having at least three loose stools within a day. Fever episodes were diagnosed by mother/caretaker during the last week (yes/no). In case of death, the team carried out a verbal autopsy adapted from WHO standards. Haemoglobin concentration was measured at baseline (June) and at the end of the intervention (November) or when a child was discharged from the study, using a daily calibrated electronic device HemoCue Hb 201+. Standardised forms were used to collect data.

**Results**

The overall sample size was 1,038 children in 784 households: 598 children in the intervention group and 440 children in the control group.

Table 1 details the effects of preventive RUSF on child anthropometry. Compared to baseline values, mean WHZ for both control and intervention groups were slightly higher at end point, while mean HAZ was slightly lower. There was no difference in the incidence of

wasting (incidence rate ratio: 0.86; 95% CI: 0.67, 1.11;  $p=0.25$ ) or mean change in WHZ (20.002 WHZ/month; 95% CI: 20.032, 0.028;  $p=0.89$ ) between the arms. The difference in weight increase between groups was 0.02 kg/month (95% CI: 20.01, 0.04;  $p=0.10$ ). Children in the intervention group had a significantly higher linear growth velocity of 0.03 HAZ-score/month (95% CI: 0.02, 0.05;  $p<0.001$ ) compared to the control group. This observed difference was equivalent to a small difference in height gain of 0.09 cm/month (95% CI: 0.04, 0.14;  $p<0.001$ ).

Identical ponderal (weight) growth in control and intervention groups was confirmed by a lack of difference in MUAC growth. Age at inclusion was not found to modify the intervention effects on child anthropometric measurements. After adjustment for age, sex, socioeconomic status, and morbidity status at inclusion, the study found that children from the RUSF group had lower risk of self-reported diarrhoea by 29.3% (95% CI: 20.5, 37.2;  $p<0.001$ ) and fever by 22.5% (95% CI: 14.0, 30.2;  $p<0.001$ ), compared to the control group. RUSF significantly increased mean haemoglobin concentration at end point by 3.8 g/l (95% CI: 0.6, 7.0;  $p=0.02$ ), resulting in significantly lower odds of anaemia (OR: 0.52; 95% CI: 0.34, 0.82;  $p=0.004$ ) for children in the intervention group.

The absence of an effect on wasting incidence could have multiple explanations. First, the energy contribution of RUSF may have been "diluted" by the general food distribution, which mainly provided a supplement of energy and protein. Second, the energy dose of 46 g (<247 kcal) daily RUSF and the duration of the supplementation could have been insufficient to support ponderal growth, particularly for the older children in the cohort. Furthermore, it is possible that the RUSF may have been shared with other children in the household. However, if this were done to a large extent, the observed intervention effects on secondary outcomes like HAZ and haemoglobin concentration are hard to explain.

The absence of an effect on ponderal growth, but modest effects on morbidity, linear growth,

and, most of all, haemoglobin could suggest that a multiple micronutrients (MMN) effect is at play. For example, zinc, one of the micronutrients added to RUSF, is currently recommended as adjunct therapy by the United Nations Children's Fund and WHO for the treatment of diarrhoea.

These observations could lead to the speculative hypothesis that supplementation with MMN supplements like powders or tablets might result in the same effects as RUSF, if basic food rations were provided.

One important additional benefit that LNS offer is the lipid component. In addition to providing a small amount of essential fatty acids, which hold a potential to support child growth, the lipid component serves as an essential matrix that ensures that fat-soluble vitamins like vitamin A, D, and E are properly absorbed. Particularly when the child's diet is poor in fat, this would provide leverage to increase the efficacy of supplemented fat-soluble vitamins. Therefore, more mechanistic studies are required to elucidate the additional contribution to the efficacy of the MMNs by the functional fat fraction of the RUSF.

The study had a number of limitations. The projected sample size was not attained, limiting the study's statistical power. The study participants were not blinded with respect to the intervention assignment because of the type of supplement (paste) provided to children. Clusters were not always geographically separated from each other. And finally, child morbidity was recorded through caretaker recall, which could have resulted in underestimation.

In conclusion, adding child-targeted RUSF supplementation to a general food distribution resulted in increased haemoglobin status and linear growth, accompanied by a reduction in diarrhoea and fever episodes. However the study did not find clear evidence that adding RUSF to a household food ration distribution of staple foods was more effective in preventing acute malnutrition. Other context-specific alternatives for preventing acute malnutrition should therefore be investigated.

**Table 1: Effects of preventative RUSF on child anthropometry**

Outcome	Control Arm (n=440)	Intervention Arm (n=598)	p-Value
<b>Wasting</b>			
End point mean WHZ (SD)	-1.09 (0.95)	-1.05 (0.93)	
Intervention effect (95% CI), Z-score/mo <sup>a</sup>	Reference	-0.002 (-0.032, 0.028)	0.89
Cumulative episode WHZ<-2	174	241	
Number of observed child-months	1,427	2,199	
Number of episodes per child-months (95% CI) <sup>b</sup>	0.12 (0.10, 0.14)	0.11 (0.09, 0.14)	
Incidence rate ratio (95% CI) <sup>c</sup>	Reference	0.86 (0.67, 1.11)	0.25
<b>Stunting</b>			
End point mean HAZ (SD)	-2.06 (1.39)	-1.79 (1.46)	
Intervention effect (95% CI), Z-score/mo <sup>a</sup>	Reference	0.03 (0.01, 0.04)	<0.001
End point prevalence of stunting percent (n)	52.3 (230)	46.2 (276)	
OR of end point stunting (95% CI) <sup>d</sup>	Reference	0.69 (0.45, 1.07)	0.099
<b>MUAC</b>			
End point MUAC, cm (SD)	14.1 (1.2)	14.3 (1.1)	
Intervention effect (95% CI), cm/mo <sup>a</sup>	Reference	0.01 (-0.02, 0.04)	0.49
<sup>a</sup> Analyzed using a linear mixed model with random effects cluster, household, and child, adjusted for child's age at baseline, child's sex, SES, and baseline value. <sup>b</sup> Confidence intervals are estimated from a Poisson model adjusted for clustering. <sup>c</sup> Analyzed using a mixed Poisson regression model with random effects cluster, household, and child, adjusted for child's age at baseline, child's sex, SES, and baseline value. <sup>d</sup> Analyzed using a mixed logistic model with random effects cluster and household, adjusted for child's age at baseline, child's sex, SES, and baseline value. doi: 10.1371/journal.pmed.1001313.t003			



# Impact of livestock support on animal milk supply and child nutrition in Ethiopia

Dry riverbed in Shinile

## Summary by Kate Sadler and Emily Mitchard

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The full report of the research summarised here, including additional methodology and the results from the other three intervention sites, can be found on the Feinstein International Centre website <http://sites.Tufts.edu/Feinstein/2012/Milk-Matters>

## Background

Animal milk has long been recognised as an important component of pastoralist diets across the world<sup>1</sup>. As a nutrient-dense food, milk is known to contribute a high proportion of the nutrients, such as high quality protein and micronutrients, to the pastoralist diet<sup>2,3,4</sup>. Previous research in the Somali region of Ethiopia has found that Somali pastoralists consume, on average, between 20 and 50 percent of their energy requirement as milk and animal products in a normal rain year<sup>5,6,7</sup>. For Somali children in particular, when milk is plentiful it was found to constitute a central pillar of the diet, providing two-thirds of the daily energy requirement and 100 percent of the daily protein requirement<sup>7</sup>. Yet, in recent decades, levels of global acute malnutrition among young children in the Somali region are regularly reported to rise above 15%, the level defined as a nutritional emergency by the World Health Organisation (WHO)<sup>8</sup>. These surveys identified a seasonal aspect to child

malnutrition, with particularly high rates of acute malnutrition occurring during the dry season and periods of drought. Seasonal variation in livestock milk production has also been well described in the literature on pastoralism in Africa, with milk supply falling as the dry season advances<sup>10,11,12</sup>. Whilst this work indicates that the main risk period for child malnutrition occurs routinely in the late dry season in many pastoralist areas, nutrition and humanitarian programming continues to take a reactive emergency approach emphasizing the delivery of food aid and therapeutic treatment of severe acute malnutrition (SAM). Moreover, food aid is typically characterized by the delivery of a food aid basket that rarely includes a protein or fatty acid source suitable for infants and young children. Finally, little has been done to understand the potential role of milk in preventing malnutrition in pastoral regions.

As part of Save the Children's African Region Pastoral Initiative<sup>13</sup>, the 'Milk Matters'

project is a joint venture between the Feinstein International Centre at Tufts University, Save the Children USA (SC US), and Save the Children UK (SC UK) in Ethiopia. The Milk Matters project aims to improve the nutritional status of children in pastoralist/semi pastoralist areas of Ethiopia through demonstrating an explicit link between livestock health, milk availability and access, and child nutrition<sup>14</sup>. It also aims to contribute to improvements in policy and programming for child nutrition by providing scientific evidence in support of more holistic and preventative approaches to malnutrition in pastoral regions. This article briefly describes the findings from two cohort studies conducted in two Zones in the Somali region of Ethiopia from July 2010 to July 2011. The studies were designed to assess the impact of small-scale livestock interventions to sustain access to and availability of animal milk at the household level over the dry season on the nutritional status of children less than five years of age. The study objective, design, and find-

<sup>1</sup> Sadler, K., C. Kerven, et al. (2010). The fat and the lean: a review of production and use of milk by pastoralists in press. Pastoralism: research, policy and practice  
<sup>2</sup> Galvin, K. A., D. L. Coppock, et al. (1994). Diet, nutrition, and the pastoral strategy. African pastoral systems: An integrated approach. E. Fratkin, K. A. Galvin and E. A. Roth. London, Lynne Rienner: 113-132.  
<sup>3</sup> Fratkin, E., E. A. Roth, et al. (2004). Pastoral sedentarization and its effects on children's diet, health, and growth among Rendille of Northern Kenya. Human Ecology 32(5): 531-559.  
<sup>4</sup> Barasa, M., A. Catley, et al. (2008). Foot-and-mouth disease vaccination in South Sudan: benefit-cost analysis and livelihoods impact. Transboundary and Emerging Diseases 55:339-351.  
<sup>5</sup> Webb, P. and J. Braun (1994). The Pastoral Experience. Famine and food Security in Ethiopia: lessons for Africa. Chichester UK, Wiley & Sons Ltd: 85-98.  
<sup>6</sup> SCUk and DPPA (2002). Filtu-Dolow Pastoral Livelihood Zone: a HEA baseline study. Addis Ababa, Save the Children UK and Disaster Prevention and Preparedness Bureau.

<sup>7</sup> SCUk (2007). The causes of malnutrition in children under 3 in the Somali Region of Ethiopia related to household caring practices: Preliminary Report. A.-M. Mayer. Ethiopia, Report on research findings from Somali Caring Practices research project in Shinile and Dambal districts of Shinile zone, Somali region, Ethiopia.  
<sup>8</sup> Sadler, K. and A. Catley (2009). Milk Matters: the role and value of milk in the diets of Somali pastoralist children in Liben and Shinile, Ethiopia. Addis Ababa, Feinstein International Center. See also footnote 7.  
<sup>9</sup> Ethiopian Health and Nutrition Research Institute, UNICEF, et al. (2009). Final Report from Nutrition and Mortality Surveys conducted in Seven Mega Livelihood Zones in Somali Regional State, Ethiopia. Addis Ababa, Ethiopian Health and Nutrition Research Institute.  
<sup>10</sup> Chell, D. and A. Chell (1979). A detailed evaluation of the primary health care programme among nomadic tribes of North Kordofan Province, Sudan. El Obeid, Nomadic Health Project, Euro-Action Accord.

<sup>11</sup> Arhem, K. (1985). Pastoral Man in the Garden of Eden: The Maasai of the Ngorogoro Conservation Area, Tanzania. Uppsala Research Reports in Cultural Anthropology. Uppsala, Sweden, Uppsala University.  
<sup>12</sup> Catley, A. (1999). The Herd Instinct: Children and Livestock in the Horn of Africa. Save the Children Working Paper 21. London, Save the Children UK.  
<sup>13</sup> The goal of Save the Children's Africa Region Pastoral Initiative is to "deepen and replicate innovative approaches to improve access to basic services and reduce vulnerability to drought in pastoralist populations in order to create positive change for children in this unique and harsh environment."  
<sup>14</sup> Previous work under the Milk Matters project, described extensively in the report, *Milk Matters: The Role and Value of Milk in the Diets of Somali Pastoralist Children in Liben and Shinile, Ethiopia*, laid the foundation for the results discussed in this article and can be found at <http://sites.tufts.edu/feinstein/2009/milk-matters-phase-one>



ings from one intervention site, as well as discussion and recommendations, are summarised below.

## Study objective

The objective of this study was to evaluate the impact of community-defined livestock interventions on child nutritional status during the dry season. In doing so, the study asked the following primary research question:

What is the impact of livestock interventions on children's consumption of animal milk and nutritional status over one calendar year, particularly during the dry season?

In addition, the study sought to compare the costs of an early intervention focusing on livestock health and milk production with an emergency feeding programme for children.

## Study design

Two cohort studies, each involving three sites, were implemented over one calendar year, from July 2010 to July 2011. In each study, two sites were designated to receive livestock interventions and one site served as a control. All children aged 6 to 59 months in both intervention and control sites were enrolled in the monthly surveillance system that collected data on child health and nutrition. Overall, the surveillance system aimed to follow 940 children, 610 living in intervention sites and 330 living in control sites.

## Study site, household, and milking animal selection

Six sites were selected to participate in the study, three from two separate Zones in the Somali region. Site selection criteria included:

1. Pastoral livelihoods
2. Targeted for assistance under SCUS Protective Safety Net Programme (PSNP) and SCUK Revitalising Agriculture/Pastoral Incomes and New Markets (RAIN) programme in Liben and Shinile respectively
3. Population size greater than 200 households<sup>15</sup>, and
4. Vulnerability to elevated rates of child malnutrition during the dry season, as indicated through regional nutrition assessments<sup>16</sup>.

**Table 1: Final feed rations (kg/day) for milking species**

	Liben	Shinile	Extended Feeding (Shinile only) Wheat bran
	Sudan grass	Rhodes grass	
Adult cow	9	6	3
Adult goat	3	2	1
Calf	3	2	
Kid	2	1	

**Table 2: Vaccinations and medications for milking species**

Care Type	Cattle	Goats
Vaccination	Anthrax, blackleg, contagious bovine pleuropneumonia (CBPP), Lumpy Skin Disease (LSD)	Contagious caprine pleuro-pneumonia (CCPP), capri pox, peste des petites ruminants (PPR)
Prophylactic treatment	Ivermectin (internal and external parasites)	Ivermectin (internal and external parasites)
Other curative treatment	Treatment provided with diagnosis throughout the dry season	Treatment provided with diagnosis throughout the dry season



**Weighing a child in Biyoley intervention site**

Kate Sadler/Tufts University, Ethiopia, 2010

Site selection was completed in December 2009 in consultation with local government officials, SCUS (Liben) and SCUK (Shinile), and local communities. As far as possible, sites with a similar level of access to basic resources such as pasture, water, health care, and education services were selected. Selection of households was also done in consultation with local officials and community members, with a focus on inclusion of all households with children under the age of five years. Cows and small ruminants were designated as the targeted livestock species for support under the intervention<sup>17</sup>. In the four designated intervention sites, households were asked to choose either one milking cow or three to four milking goats, a ratio based on estimated milk off-take per species. The particular milking animals at each household were selected for support according to the following set of criteria: (1) recently lactating, (2) with a normal milking yield and (3) in overall good health with no problems that could compromise milk production.

## The livestock interventions

Two livestock interventions were designed. In two of the four designated intervention sites (Waruf in Shinile and Biyoley in Liben), the milking animals were given a daily ration of supplementary feed over the dry season. In the

other two intervention sites (Ayiliso in Shinile and Washaqabar in Liben), the milking animals were given a daily ration of supplementary feed plus a package of vaccinations and de-worming medications at the outset of the dry season<sup>18</sup>. The two remaining sites were designated as control sites and received no intervention. While the dry season, *Jilaal*, typically falls between February and April in the northern Shinile Zone and between January and March in the southern Liben Zone, the interventions were extended in both Zones due to the onset of a drought in 2010/11<sup>19</sup>. In total, the interventions spanned 146 days in Shinile and 135 days in Liben, but due to certain site-specific occurrences, the total days of actual livestock feeding varied by site and ranged from 47 to 73 days.

The supplementary feed ration size for each animal species was based on the livestock feeding guidelines for drought set by the Ethiopian government<sup>20</sup> and was meant to supplement natural browse. However, the ration size was subsequently raised as a result of the drought (Table 1). Local agricultural cooperatives with irrigation capacity were contracted to grow and transport Sudan grass in Liben, while a private contractor was ultimately contracted to provide Rhodes grass in Shinile after an unexpected frost

destroyed the Sudan grass crop. The care and shelter of the grass hay upon delivery to the sites was tasked to community members in each intervention site. Both SCUS and SCUK provided assistance in building the shelters for the hay. Participating households were responsible for providing the milking animals with sufficient water.

For the two sites receiving the livestock health package, vaccinations were procured through the Ethiopian Government Bureau of Livestock, Crop and Rural Development, while private vendors of veterinary drugs were contracted to maintain a consistent supply of the designated prophylactic drugs throughout the dry season (see Table 2). The drugs were then collected as needed by trained community animal health workers using the voucher system established by SCUS and SCUK in the respective regions.

<sup>15</sup> It was determined that a community with at least 200 households would ensure the desired sample size of 150 children/site.

<sup>16</sup> See footnote 9.

<sup>17</sup> The decision to support small ruminants and cows was based on the results of previous work under Milk Matters which found that households kept a cow or a few goats at the household during a typical dry season while the men took the larger stock far from the settlement site in search of pasture and water.

<sup>18</sup> Animal feed was provided in all sites based on the fact that animal health care alone would do little to improve milk off-take if the animal remained malnourished, but that extra health provisions in addition to feed may improve milk off-take compared to animals receiving only feed.

<sup>19</sup> The Somali Region is characterized by a bimodal rainfall pattern with one long and one short rainy season, and one long and one short dry season. *Jilaal* is the Somali term for the long dry season.

<sup>20</sup> Ministry of Agriculture and Rural Development (2008). National Guidelines for Livestock Relief Interventions in Pastoralist Areas of Ethiopia. Addis Ababa, Ethiopia, Ministry of Agriculture and Rural Development



**Box 1: Key Findings from Washaqabar**

Milk off-take	Livestock milk off-take in Washaqabar was significantly greater during the dry season/drought in 2011 with the intervention, compared to the previous year dry season in 2010 with no intervention.
Milk availability	Milk was more available to young children in Washaqabar compared with the control site, with 94 percent of children receiving milk compared to 56 percent in the control, and each child consuming on average 366 mL more milk per day than in the control.
Nutritional Status	The nutritional status of children in Washaqabar remained relatively stable during the intervention, compared with declining nutritional status among children in the control site.

**Table 3: Milk off-take in Washaqabar**

Livestock Type	Stage of Lactation	Mean Daily Milk Off-take (ml)		Percent Change
		Dry season, 2010, no intervention (95% CI)	Dry season, <sup>b</sup> 2011, with intervention (95% CI)	
Goat <sup>a</sup>	Early	224 (190.5, 257.6)	628 (473.8, 782.9)	280 <sup>c</sup>
	Middle	54 (24.5, 84.2)	567 (428.3, 706.6)	1050 <sup>c</sup>
	Late	8 (0.0, 20.2)	382 (317.6, 446.6)	4775 <sup>c</sup>

<sup>a</sup> Because a goat yields less milk than a cow, three goats were considered equivalent to one cow during the intervention. The above yield estimates are for one goat.  
<sup>b</sup> The 2011 dry season became a drought (see Table 11 of original publication).  
<sup>c</sup> Significant at the 95% confidence level.

**The surveillance system**

The surveillance system was designed to monitor selected anthropometric measurements, milk consumption patterns, and infection status of enrolled children less than 5 years of age. Thirty-two data collectors were selected from within the communities because of their unique ability to track down and follow children as they moved with their families. The data collectors were trained in May 2010 and were responsible for following between 25 and 30 children each on a monthly basis. The data collectors administered three questionnaires per child, designed to collect a range of health and nutrition data, including age and weight, from which weight-for-age z-scores (WAZ) were derived, 24 hour recall of milk consumption (plain milk and milk in tea), and infection status over the last two weeks.

**Results**

The data were evaluated by intervention site compared with the control site in the same Zone and then analysed according to the impact of the interventions on three key variables: (1) animal milk off-take, (2) milk availability – measured as a function of both the proportion of children in each site consuming milk and the average amount consumed by those children receiving milk, and (3) child nutritional status measured by WAZ. In summary, the results seen across all four of the intervention sites were:

- Milk off-take in the intervention sites was

significantly greater during the 2011 dry season with the intervention as compared to the 2010 dry season with no intervention.

- Given the drought conditions and lack of rainfall, the increase in milk off-take is attributed to the project interventions.
- By the end of the intervention, a greater proportion of children were consuming milk in the intervention sites as compared to the control sites.
- Those children who received any milk in the intervention sites consumed, on average, more milk than children in the control site.
- There was an overall trend towards stabilized nutritional status among young children in the intervention sites over the course of the intervention compared with a decline in nutritional status in the control sites.
- Within the intervention sites, those children who continued to consume some milk throughout the intervention time period maintained higher average WAZ scores than those who did not receive any milk, a difference that was frequently significant.

**Case Study: Results from Washaqabar, Liben Zone**

Key findings from Washaqabar, Liben Zone are summarised in Box 1 and detailed below.

**Milk off-take**

Milk off-take increased significantly in Washaqabar, by as much as 4775%, from the 2010 dry season to the 2011 dry season with the

intervention (Table 3). This increase was attributed to project inputs. The primary non-project factor that could have resulted in increased milk off-take was rainfall leading to better browse and water for livestock, but drought conditions and lack of browse over the intervention period rule out this factor<sup>21</sup>. A secondary factor, household purchase of feed for livestock, could also have affected attribution, but was similarly ruled out. A high level of ration was delivered by the study to study animals relative to recommended levels and feed intakes. This suggests that very limited, if any, feeding of study animals with privately-purchased feed is likely to have taken place.

**Milk availability**

More children received milk and children on average consumed greater quantities of milk per day throughout the intervention in Washaqabar than in Makinajab (Figure 1). From December to May, the percent of children receiving milk in Washaqabar increased by 31% compared to 20% change in Makinajab, and the average daily amount consumed increased by 241ml compared to gradual decline in Makinajab.

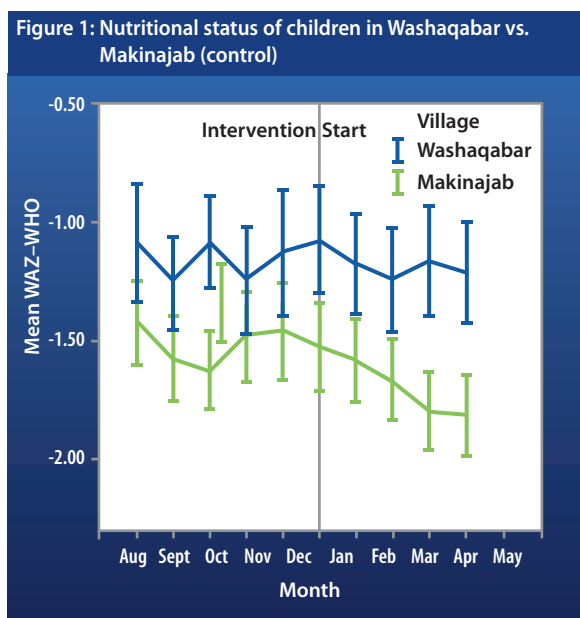
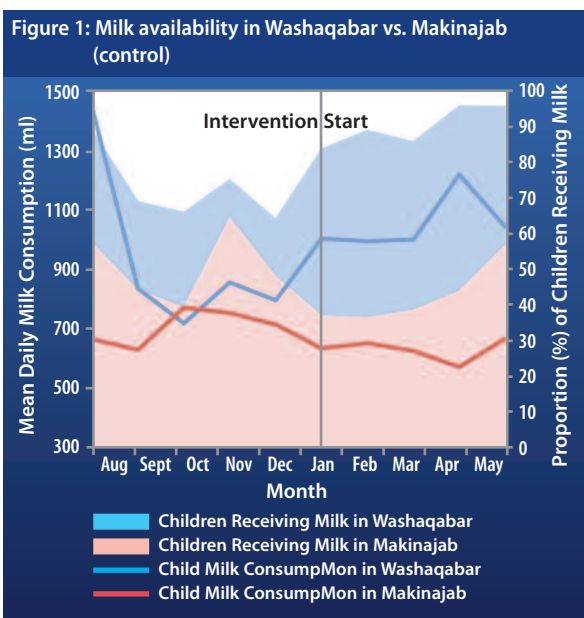
**Nutritional status**

Pre-intervention nutritional status was relatively stable in both the intervention and the control site (Figure 2). However, with the start of the dry season in January 2011, the average WAZ of children in the Makinajab control site started to decline, with an overall decrease of 0.31 points between January and May. In contrast, the average z-score fell by only 0.07 points from January to May in the Washaqabar intervention site.

**Discussion**

The results of this study demonstrate that targeted livestock support can significantly increase daily milk off-take during very dry periods with direct links to improved milk consumption among young children and positive implications for nutritional status. To our knowledge, this is the first study that presents quantitative data demonstrating this link for young children in pastoralist areas. There were several factors, however, that affected the relationship between milk off-take, child milk consumption, and child nutritional status, summarized in Box 2. These factors are important to consider as they have implications for both the impact of the intervention seen here and the design of similar interventions in the future.

Where the intervention worked well and intervention coverage of households was high, such as in Washaqabar, the increase in milk consumption seen (1050 mL/day compared to 650mL/day in the control site) translates into an additional 264kcal, 12.8g of protein, and considerably higher intakes of essential fatty acids, vitamins, and minerals per child each day. For a young child of two years of age, this increase in nutrient intake would meet circa 26



WAZ: Weight for age z score Error bars: 95% CI

<sup>21</sup> Please refer to the original publication for a detailed presentation of rainfall data for the referenced time period provided by the Ethiopian National Meteorology Agency, Addis Ababa, Ethiopia.



Box 2. Factors affecting milk off-take, child milk consumption and nutritional status	
<b>Milk off-take and consumption</b>	
Challenges of implementation delivery	Feed procurement and delivery challenges in the two Zones included: unexpected frost late in the growing season in Shinile that killed the Sudan grass crop and necessitated a new contract for Rhodes grass that was located a greater distance from the study sites, high transportation costs, occasional poor quality of feed delivered to study sites, preference of some participants to feed animals from home instead of at designated feeding centres, long distances to feeding centres that impacted milk supply and availability for young children, movement of a small proportion of targeted cattle reduced access to feeding centres.
Independent purchasing of feed	While this happened to varying extents in all sites, the provision of vouchers used for feed purchase by an external agency to households in one control site affected the validity of the control; this event also demonstrates the difficulty of implementing field research in settings not easily controlled.
Drought conditions	Limited natural browse due to drought necessitated an increase in ration size. Water and pasture shortages forced families to move further than planned resulting in some loss to follow-up.
Sharing of milk	In sites where household coverage by the interventions was lower, participating households reported sharing milk with non-project households.
Prioritization of milk	With less overall milk available, milk was prioritised to children under three years resulting in less consumption amongst the older children enrolled in the study.
<b>Milk consumption and nutritional status</b>	
Infection status	Several misunderstandings between mothers and data collectors led to widespread underreporting and underestimation of the prevalence of childhood infections.
Activity levels	Data to reflect this was not collected or measured by the study.

percent of energy and 98 percent of protein requirements. Whilst we don't see a dramatic improvement in weight gain among intervention children, we do see an overall pattern of stabilized WAZ among these children compared with a general decline in children in control sites over the intervention period. Together, these impacts indicate that interventions such as those tested here hold potential to maintain weights of young children in times of drought and to prevent a deterioration to acute malnutrition. It is well documented in the scientific literature that preventing acute malnutrition is crucially important for a child's survival and overall mental and physical development<sup>22</sup>. Moreover, the results of this study also suggest that it could be more cost-effective, with the cost of the livestock interventions tested here ranging from 34 to 81 USD per child to prevent weight loss versus the cost of 145 to 200 USD per child to treat severe acute malnutrition in a CMAM programme.<sup>23,24</sup>

In addition to the impacts seen on milk consumption and nutritional status in young children, the interventions had several positive livelihood outcomes for participating households, including:

- More free time for women as a result of reduced workload – research on maternal and child health suggests that increasing maternal well-being frequently translates to improved infant and young child feeding practices (such as perceived ability to exclusively breastfeed) with important outcomes for child nutrition<sup>25,26,27</sup>.
- Protection of critical assets during drought conditions – many households reported a high survival rate of dams and suckling calves and perceived improved rates of reproduction in some of their animals as compared to previous dry seasons and periods of drought.
- Improvement in milk off-take for local Somali indigenous breeds – this result indicates the potential to enhance production in local breeds, which are well adapted to

harsh environmental conditions and disease risks in the pastoralist areas targeted here.

### Conclusions and recommendations

This study has demonstrated that through targeted livestock support to milking animals that stay close to women and children during dry season and/or drought (overall a relatively small proportion of the whole herd), milk production and consumption among children is improved, and their nutritional status benefits. There is some consensus in the programming literature at present that the humanitarian community tends to spend much more time before humanitarian disasters preparing to treat acute malnutrition rather than trying to prevent it<sup>28</sup>. The interventions presented here provide us with the opportunity to change this focus and reconnect food security interventions

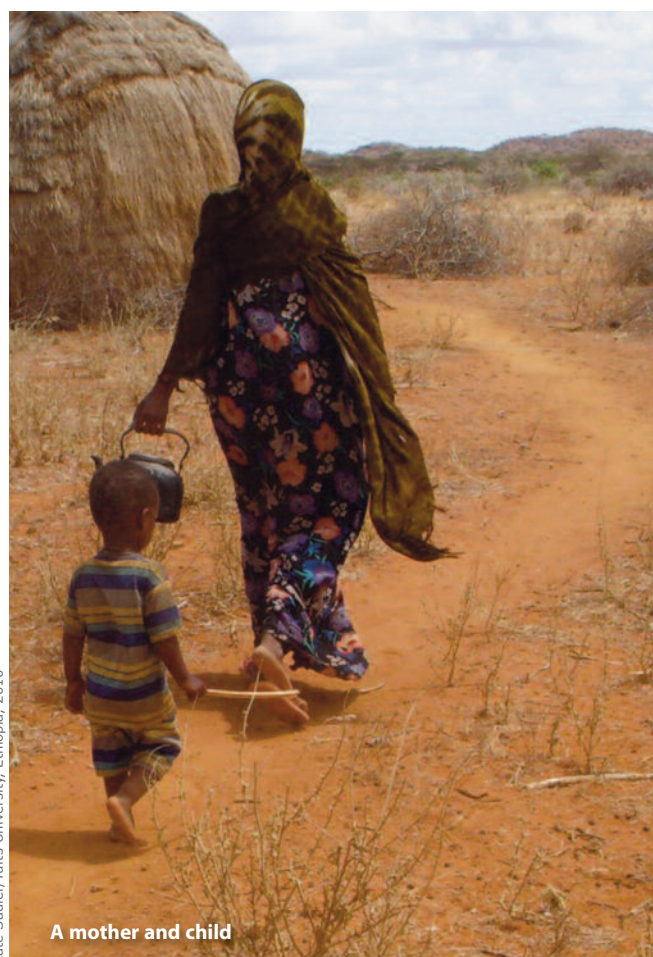
and nutrition outcomes in these areas with the potential of creating substantial aid cost savings by preventing the need for large selective feed programmes such as CMAM.

Recommendations therefore include:

- Applying a nutrition lens to the drought management cycle by, for example, supporting preservation of milk surplus during the rainy season, community level feed production/storage, feed interventions for reproductive/milking stock, and designing cash/food-for-work activities that do not negatively impact on women's time and ability to maintain their own or their children's nutrition status.
- Scaling up similar feed interventions as that conducted in this project, but with adjustments to control costs from feed supply and transport. This could be done through the provision of vouchers or other financial mechanisms where market supply for feed is adequate<sup>29</sup>.
- If private sector provision of feed is not adequate, investigating opportunities to support local livestock feed production<sup>30</sup>.

Finally, food security and livelihood programmes must start monitoring more systematically their impact on nutrition outcomes. This need not involve frequent collection of anthropometric data and the measurement of nutritional status itself, which, as discussed above, can be challenging in these environs. But simple tools for measuring nutrition impact, such as participatory impact assessment<sup>31</sup> and the dietary diversity index<sup>32</sup>, need to be used as standard if we are to create the momentum for investment in food security interventions to prevent increases in rates of malnutrition where these have been shown to be effective.

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A mother and child

Kate Sadler/Tufts University, Ethiopia, 2010

<sup>22</sup> Bhutta, Z. A. (2009). Addressing severe acute malnutrition where it matters. *Lancet* 374: 94-96.

<sup>23</sup> Puett, C., K. Sadler, et al. (2012). Cost-effectiveness of the community-based management of severe acute malnutrition by community health workers in southern Bangladesh. *Health Policy and Planning* in press.

<sup>24</sup> Please refer to original document for more in-depth presentation of the cost comparison.

<sup>25</sup> Shell-Duncan, B. and S. A. Yung (2004). The maternal depletion transition in northern Kenya: the effects of settlement, development and disparity. *Social Science and Medicine* 58(12): 2485-2498.

<sup>26</sup> Nyaruhucha, C., J. Msuya, et al. (2006). Nutritional status and feeding practices of under-five children in Simanjiro District, Tanzania. *Tanzania Health Research Bulletin* 8(3):162-167.

<sup>27</sup> See Footnote 7

<sup>28</sup> Levine, S. and C. Chastre (2011). *Nutrition and food security response analysis in emergency contexts*. London, Humanitarian Policy Group.

<sup>29</sup> In the participatory impact assessments for this project, households stated that they frequently purchased animal feed from local sources as a "normal strategy" during drought, a very positive trend that could be supported.

<sup>30</sup> The role of aid projects in supporting local livestock feed production is not clear and this recommendation is dependent on good analysis of existing private sector production and apparent growth of this activity, as well as on trends in private enclosures and commercial fodder production. Please refer to full report for additional information: <http://sites.tufts.edu/feinstein/2009/milk-matters-phase-one>

<sup>31</sup> Catley, A., J. Burns, et al. (2008). *Participatory Impact Assessment: A guide for practitioners*. Medford, MA, Feinstein International Centre.

<sup>32</sup> Drescher, L. S., S. Thiele, et al. (2007). A New Index to Measure Healthy Food Diversity Better Reflects a Healthy Diet Than Traditional Measures. *Journal of Nutrition* 137:647-651.



# Climate Change as a driver of humanitarian crisis and response

Summary of published research<sup>1</sup>

Thousands of Somalis have been displaced by what is described as the worst floods in the country in 10 years.



Tufts University has recently published a paper which explores the relationships between climate change, humanitarian crises and humanitarian response through a review of published and grey literature. According to the authors and based on the database of disasters worldwide maintained by the Centre for Research on the Epidemiology of Disasters (CRED) at the Université Catholique de Louvain, Belgium over the past 11 years, climate-related disasters have been killing an average of 33,520 people a year, and, as critically, affecting the lives of over 211 million people. Seven categories of disasters on which data are gathered can be attributed directly to meteorological phenomena and thus directly affected by climate change: drought, extreme temperature, floods, mass movement because of drought, mass movement because of flooding, storms, and wildfires.

In a detailed statistical analysis of the death toll from recent natural disasters between 1980 and 2002, it has been shown that there is no evidence that rich nations experience fewer disaster-events per se; rather, the events have less impact. It has been shown that less democratic nations and nations with larger income inequalities suffer proportionally larger death tolls from disaster.

However, geography is still important. A nation in Asia is 28.5 percentage points more likely to experience a disaster in a given year than one in Africa. The UNISDR (UN Office for Disaster Risk Reduction) in its 2011 review points out that the populations of people at risk from weather-related disasters, and particularly tropical cyclones, has almost tripled since the 1970s. This is because the number of people living in vulnerable coastal cities has increased, with most of this increase being in low-income, shanty-town like developments.

Furthermore, it appears that the intensity, and cost of natural disasters are increasing, and the twenty-first century holds the possibility for much greater levels of destruction than previously experienced. To date, increases in the natural disaster burden can be attributed, at least in part, to development forces, including population growth, endemic socio-political inequities and the failure of governance systems to avoid human settlement on dangerous terrain. However, in its Fourth Assessment

Report in 2007, the International Panel on Climate Change (IPCC) found that natural hazards themselves were likely to increase in frequency and intensity during the course of the century. The report concluded that rain-fed agricultural yields in Africa could drop by up to 50% by 2020, and that as many as 1.25 billion people in Africa and Asia could be exposed to water shortages and stress by 2050.

The International Food Policy Research Institute (IFPRI) projected that climate change will in fact cause a decline in the availability of calories per capita in developing countries, relative to 2000 levels. The result will be a 20% increase in the number of malnourished children, relative to a world without climate change.

A more recent 2012 IPCC report on climate extremes found that several hazards – with the potential to spawn humanitarian crises – were likely to emerge in the twenty-first century – more intense cyclones, food and water shortages, major flooding, droughts, degraded ecosystem goods and services, and changes in the frequency and patterns of disease. This increasing future risk is partially due to prospects for an expanded range for disease vectors and partially due to the impact that climate change is expected to have on food production and on flooding – malnutrition and flood events being aggravating factors in the spread of infectious disease. Since least-developed countries, by definition, suffer from deficiencies in food, water, sanitation, and health care, these excess stresses are likely to place disproportionate harm in those places. Potential effects of increased temperature may be further intensified by the demographics of affected populations; a growing proportion of elderly people in many countries will be susceptible to heat waves.

The humanitarian implications of such impacts are clear, yet the true costs are not. At least one organisation, however, suggests the price of aid missions might jump by anywhere from 32% to 1600% due to climate change.

A landmark report from FORESIGHT in 2011 found that migration was likely to be a major feature of human societies in the coming decades. However, the authors argued that, for underlying social reasons, this movement was

equally likely to be *towards* areas of environmental stress as *away* from such areas—as in the river deltas and mega-cities of coastal Asia. Meanwhile, the authors distinguished between *migration* (which may have a positive role in risk-reduction) and *displacement* (which is likely to be universally negative). Preventing *migration* out of stressed areas may lead to an increase in *displacement*.

A second school of thought focuses on the dislocation related to natural events. Climate change will create more environmental pressures and natural disasters that displace people from traditional homelands, particularly in areas of extreme exposure, such as coral atolls. These mass migration events will cause human security challenges and may serve as the basis for humanitarian crises.

The number of people on the move due to climate change is deeply contested. Commonly cited figures range from 50 million to 1 billion people by 2050 (UNFPA, 2009). Critics argue that such numbers are “deterministic,” failing to account for human agency and strategies in the face of climate change.

Moreover, major policy biases against migration (especially in its international forms) may impede movement for many affected people. Migration calculations are also subject to uncertainties about the intensity of climate change. Mild climate change, a less than two degrees Celsius rise in pre-industrial levels, would yield migration flows “virtually indistinguishable” from existing patterns of migration. Meanwhile, moderate levels of climate change, two to four degrees Celsius, would lead to more migration, especially displacement, projected at 250 million people. Catastrophic global warming, above four degrees Celsius, could lead to environmental destruction and social dislocation displacing untold numbers of people.

There is also the issue of government-sponsored migration in the face of climate change. Directly or indirectly, policy decisions not only *respond* to environmental migration but also *contribute* to the actual flows of people, especially within national borders. Government

<sup>1</sup> Walker, P et al (2012). Climate Change as a Driver of Humanitarian Crisis and Response. Feinstein International Centre, Tufts University. June 2012.



development policies may influence whether people build and settle on ecologically sensitive areas, such as flood plains and hillsides. Governments may resettle populations from areas of perceived natural hazard, or in the wake of a natural disaster. Alternatively, governments may take climate-related actions, especially water or food security projects, such as hydroelectric dams, that either attracts workers to an area, displace local populations, or both. These adaptive actions could reduce certain vulnerabilities, but may create others of concern to humanitarians.

Many of the world's large and fast growing cities are located at lower than ten metres above sea level along coastlines (so-called 'low-elevation coastal zones', or LECZs, which are susceptible to all manner of 'seaward threats').

Rural-to-urban migration has been (and remains) a key strategy for resilience in many developing country contexts, where rural livelihoods are particularly susceptible to climate variability. However, the nature of rapid urbanization is critical. With the number of slum dwellers set to rise from one billion to two billion in the coming decades, and "urbanisation [becoming] synonymous with slum formation", the potential for urban humanitarian crisis is rapidly expanding. The low-cost and informal nature of slum settlements also means that they are located on highly marginal land, such as flood plains and steep slopes.

Many slums are highly vulnerable to flooding. Data from Dhaka, Bangladesh, show that nearly two-thirds of the country's urban slums flood once or more per year. Similarly, a study in Gorakhpur, India found that parts of the city were water-logged for five to six months out of the year, due to waste management and drainage problems. This reconfiguration of where and how people live must be accounted for in any humanitarian planning around climate change.

Climate change is itself a product of globalisation; in many ways it is the world's first fully globalised environmental risk. Climate emissions cause atmospheric warming, no matter where on earth they are produced. Indeed, the poor people in poor countries who will be most burdened by climate-related disasters are among the world's smallest emitters of greenhouse gasses.

Globalisation also changes the profile of populations vulnerable to climate change. For example, food systems are more integrated today than ever before in human history. Disruptions in one part of the world can thus affect accessibility thousands of miles away. Food shortages in 2007–2008 triggered food riots in more than 30 countries. Meanwhile, the Russian forest fires of 2010 - fueled by abnormal heat and drought - led to that country imposing an export ban on grain. Globalisation is also creating incentives for states to establish industrial production zones at close proximity to the sea, for easier access to intercontinental shipping. However, these developments are often at very low elevation, jeopardising the people and investment in property should sea levels rise in the coming century.

Another hallmark of globalisation has been the recent trend of Asian countries, such as China, investing heavily in trade with Africa

nations, in order to obtain sufficient food and raw materials for their large and industrialising populations. Recently, this investment has extended to the purchase of large tracts of land in the region, for the purposes of growing food. In doing so, the supply of arable land in the region is facing a squeeze, just as climate change will begin to accelerate drought and desertification processes in a region where agricultural land is already under heavy pressure. The implications for land and food security are potentially alarming.

Conversely, globalisation may impact the humanitarian response to climate change in more constructive ways. For example, the IPCC has noted that humanitarian response is often required as the result of a failure in disaster risk reduction (DRR). By expanding global flows of capital, products, and know-how, globalisation may improve DRR capacity in vulnerable locales, mitigating the need for humanitarian response. Technological innovations, ranging from early warning systems in Bangladesh to disaster-resilient schools in Thailand can be developed, shared via the Internet, and accessed around the globe. Moreover, the globalised development and dispersion of community-based participatory methods may bolster DRR and reduce future vulnerabilities to climate change.

State-mediated vulnerability is also a problem. A good example of this comes from the major waterways in South and Southeast Asia that run through China. Chinese policymakers have reason to be concerned about future water and energy scarcities. They have taken adaptive action such as the hydroelectric damming of rivers and the routing of water from southern to northern China, where it can be put to use in the country's traditional agricultural belt. However, these projects may create water shortages for countries downstream, elevating the potential for scarcities and reduced agricultural yields, and triggering human security crises. Moreover, these projects have ratcheted up political tensions between China and its neighbours, further raising the humanitarian stakes.

Four major challenges exist with respect to state response to climate change-related disaster:

- Prevention, mitigation, and adaptation policies are not in place.
- Capacity to implement policies is weak. On a larger scale, while 168 countries subscribe to the landmark Hyogo Framework for Action (HFA) that guides disaster response planning, not all participants are fully able to meet its goals.
- Systematic data collection to evaluate and report response results does not exist
- Lack of data to evaluate and inform the nature of the DRR efforts.

Although widespread support of international disaster guidance signals a shift in support of standardised methods of managing disaster response, the gap between policy and action remains a major hurdle. One basic issue that contributes to this dilemma lies in the tenure of political representatives versus the need for long-term disaster planning. While a politician might be in office for two years, comprehensive decision making requires a much longer time horizon and commitment that is not subject to the ephemeral oscillations of election cycles

Agencies typically are very good at measuring and tracking the inputs to their programmes (the finance, personnel, and supplies) and the processes these inputs feed (logistics systems, the supply of water, health-care, food, and so on). However, they become progressively poorer at measuring and monitoring as they move downstream to programme outputs and outcomes and, at the end of the line, hardly ever measure or evaluate impact. If humanitarian aid programmes are to become concerned with enhancing system resilience as well as basic survival, then they will have to both adopt the methodologies of impact assessment and create the financial and management support needed to ensure such evaluations become routine.

The evidence also suggests that humanitarian operations are no longer synonymous with emergency operations. Most humanitarian assistance today goes into operations that have been running for five years or more. As much as 45% goes into programmes more than eight years old. Whilst this no doubt saves lives, it also condemns the victims to an endless state of purgatory, beholden to others, the agencies or the state, for their survival. Building resilience is not part of this mind-set. In these long-term crisis environments, in Ethiopia, Sudan, Afghanistan, Palestine – all environmentally fragile states – a major opportunity is being missed to use aid to transform the way communities and their states develop the necessary economies and governance for the future.

The humanitarian aid system evolved as a Western based interventionist endeavour, seeing crises as abnormal and responding through exceptional interventions. If we face a future where crises are more pervasive, many more states will have to repeatedly meet the needs of their crisis affected populations. Increasingly, Southern states - Indonesia, Philippines, Mozambique, for example - are reforming their own disaster response systems, seeing this as a normal part of sovereign responsibility.

External aid agencies need to adapt to and support this change. The old methods of working around government systems, rather than with them, have to be challenged. In many crisis-affected states, aid agencies need to see themselves as long-term partners of the state, providing response services, but must also work to build resilience into livelihood systems and the infrastructure of hazard-exposed populations. They need to view recovery from crisis as a process of change to a more resilient state. Such change will not be easy. The humanitarian response sections of aid agencies have tended to see their work in terms of logistics and the impartial, neutral supply of live-saving aid and have shunned much of the political analysis of the development sector, let alone developed an analysis of complex global processes.

International humanitarian aid agencies have grown to become large, multinational organisations, turning over billions of dollars each year and playing a critical role in the creation of international civil society norms. They now resemble major transnational corporations and find themselves increasingly challenged by the risk aversion and inertia that comes with scale and an operational model that is still essentially about organisational control.



Older people, not only children, need support

HelpAge International, Pakistan, 2011



## A systematic review of obstacles to treatment of adult undernutrition

Summary of MMedSci research<sup>1</sup>



By Claire Bader

Since graduating as a Registered Nurse in 1995, Claire has spent over 12 years working in a variety of health and nutritional programmes throughout Africa. She is an appointed member of the Isle of Man Overseas Aid Committee and has recently joined the Save the Children team in Sierra Leone as their Health Advisor.

Claire would like to acknowledge her dissertation supervisor, Dr Tony Blackett, for his support through the process and also to Dr Peter King for inspiring her to share my work.

This research dissertation reviewed some of the obstacles to treatment of adult undernutrition in adults – particularly in a humanitarian context, where inclusion of adults in nutritional response programmes remains limited. It is important to identify what are the common obstacles experienced by humanitarian health professionals around the provision of care for adults with undernutrition during emergency response programmes.

This issue is not new. In 1999, Salama and Collins reviewed the humanitarian response in Bahr a Ghazal in South Sudan (1999) where adult undernutrition had presented itself as a large challenge<sup>2</sup>. The highlighted key issues underpinning why international non-governmental organisations (INGOs) were not considering adults for nutritional treatment projects:

- Diagnosis and treatment of malnourished adolescents and adults still in its infancy with a weak evidence base and limited guidance.
- Inexperience at both individual and agency levels to manage adult malnutrition, particularly relevant given the lack of guidance.
- Complexity of adult feeding programme design where health complications and food choice are just two issues that make interventions less clear cut than with young children.
- Media and public relations, where images of 'starving children' attract more attention (=resources) than starving adults.

The review concluded that despite gaps in guidance and capacity, it is certain that in famine situations, adult malnutrition is a public

health problem and that successful adult treatment is possible and is essential for the survival of individuals and communities. The South Sudan response in 1999 failed in this regard.

### Methodology

For this latest review, reports and documents were collected using the words 'adult' 'malnutrition' and 'humanitarian' from a variety of sources and websites. Literature in both English and French were selected. The inclusion criteria were literature reviewing nutritional responses in the context of a humanitarian emergency and relating to adolescents and adults including those older than 65 years of age. Given the wide range of types of papers and methods of research involved, the Critical Appraisal Skills Programme (CASP) tool (2006)<sup>3</sup> was selected and adapted to screen the literature.

A key limitation was that much of the literature existed as grey literature, e.g. on agency websites and accessed through internet searches. There were very few peer review publications. Also, the majority of reports on undernutrition focus solely on children under the age of 5 years. Occasionally, reports include a token reference to adults in relation to the impact childhood chronic undernutrition has later in life or on women in relation to infant nutritional status (PLW).

### Results

A total number of 2,280 reports were identified and screened. Of these 2,280 reports, approximately 107 were eligible for the final detailed screening. Of the 107 reports, 105 were written in English and only 2 (1.5%) in French.

All 107 documents were screened a second time using the detailed questions on the CASP tool, narrowing down the final selection to 38

reports all published or released between January 2000 and February 2011. These final 38 reports met the proposed selection criteria for the review, all involved an actual type of research methodology and showed a higher quality of robust research methods or reflection on programmatic practice.

Fourteen (37%) of the selected reports focused on reviews of emergency response programmes and 24 (63%) were nutritional reviews or focused on nutrition research. Analysis of the 38 selected reports revealed that 19 (47%) were written by individual authors or teams of researchers, 13 (37%) by INGOs and 6 (16%) by international organisations (UN, donors and institutions). Reports reflected programming/research in Kenya, Sudan, Ethiopia, Niger, Chad, Malawi and Guinea, Haiti and Myanmar.

The author assumed that most of the obstacles noted by Salama and Collins in 1999 would emerge in this review. However, on screening the 38 documents, the findings were surprisingly different. The main obstacles identified in this review were 'weak coordination', 'limited resources', 'poorly integrated response' and 'weak human capacity'. These obstacles combined to a total of 72.5% of all the points noted. 'Weak coordination' was noted most frequently (23.5%) and 'weak human capacity' was rated 4th (14%). Other obstacles noted were continuing lack of standardised adult treatment guidelines and diagnostic criteria, lack of focus and interest in adults with overall priority given to children under 5 years of age, and adults regarded as a national government responsibility, not one for INGOs. Each of these obstacles scored 7% or less.

### Discussion

Prior to this systematic review, it was presumed by the author that the lack of recognised international adult treatment guidelines or assessment tools that was directly affecting the implementation of nutritional care for this age group. However the results suggest that guidelines and tools are widely available and accessible, but it is the training and subsequent ability of health care workers to regularly use them that is not adequate. Signs of poor nutrition in adults are easily confused with the symptoms and presentations of chronic illness and old age, as such it is often felt that these adults should be cared for within the national health system rather than as part of emergency response facilities. However, national nutrition departments remain under funded and under staffed in many developing countries and may have challenges coping with the extra burden in an emergency context.

Identification of limited resources as an obstacle relates not only to the limitation of funding to enable the inclusion of adults, but also to the type and quantity of nutritional resources available. Access to treatment products for adult undernutrition itself will remain a

<sup>1</sup> Bader C (2011). Obstacles to treatment of adult undernutrition: A systematic review submitted (June 2011) as part requirement for the MMedSci in Advanced Nursing Studies from Sheffield University. Copies of the full dissertation are available on request.

<sup>2</sup> Salama, P and Collins, S. (1999). An Ongoing Omission: Adolescent and Adult Malnutrition in Famine Situations. Field Exchange. ENN. (Issue 6). p19. [Online] Available from: <http://fex.ennonline.net/6/ongoing.aspx> [Accessed 30th March, 2010].

<sup>3</sup> <http://www.casp-uk.net/>



challenge until funding opportunities are increased and specific nutritional products for adult undernutrition are developed.

The review suggests that there is still a lack of information and understanding around the scale, depth and causes of adult undernutrition and that this is still not being addressed through early warning systems and nutritional surveys. A number of reports advocate for greater funding to enable both the wider collection of information and the implementation of essential packages and community safety nets.

Thirteen out of the 38 reports reviewed identified weak coordination as an obstacle, with many raising issues around cluster coordination and sharing of information between cluster partners.

The obstacles highlighted above are interlinked and impact on each other, e.g. without effective coordination, sharing and maximising of resources and human capacity development may not be needs based and may be inequitable.

### Recommendations

There are five main recommendations that emerge from this review:

It is important that clarity on the inclusion of adults within Nutrition Cluster coordination is reached and agreed, leading to strengthened coordination around programming and information sharing.

Increased flexibility of funding for INGOs will enable them to implement a broader integrated response package to include vulnerable adults and interventions that address the dietary coping mechanisms that often lead to micronutrient deficiencies in women, teenagers and older adults in particular.

Greater efforts and resources are needed to help develop an adult version ready to use therapeutic food (RUTF) that would enable treatment regimens to be adult specific. Under the present recognised treatment guidelines, the volume of RUTF or fortified milk required by adults to be consumed per day is large and often leads to non-compliance.

A key priority is to enhance capacity building programme in treatment and prevention of undernutrition for adults and the elderly. It is important to build the confidence of health workers in differentiating symptoms of acute weight loss or micronutrient deficiencies from other chronic health problems or general effects of old age.

Finally, as the majority of nutritional assessments focus on the under 5 age group, it is often difficult to estimate the nutritional challenges faced by older members of the communities. Until more systematic collection and analysis of data on teenagers, adults and older people is undertaken, an accurate overall picture of the spectrum of hidden vulnerability will continue to elude humanitarian organisations and donors.

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HelpAge International, Pakistan, 2011

"I can now go out in the sun" – words of Ghulam Mohammad (60 years old) who received a wheelchair from HelpAge International and who also provide a monthly cash grant to his family.

## Humanitarian financing for older people and people with disabilities

Summary of study<sup>1</sup>



A recent study quantifies the funding provided by donors to meet the humanitarian needs of two of the most vulnerable groups: older people and people with disabilities. It does so by analysing the amount of humanitarian funding targeted at these two groups through the UN Consolidated Appeals Process (CAP) and Flash Appeals in 2010 and 2011. A similar study was conducted by HelpAge International on the humanitarian funding provided for older people from 2007 to 2010. That study found a significant disparity between the needs of older people as a vulnerable group and the humanitarian assistance delivered to meet those needs. Of the total CAP and Flash Appeal funds analysed in 2007 to 2010 in selected countries, just 0.2% was allocated to projects that included an activity specifically targeted at older people. The current research and the previous HelpAge study are not directly comparable as they looked at different countries.

Demographic change means that the number of older people affected by crises and disasters is growing fast. By 2050, the number of people aged 60 and over will almost triple, reaching 2 billion (22% of the world's population). More than 1 billion people in the world live with some form of disability (15.3%), of which 200 million experience considerable difficulties carrying out daily tasks. Many of those categorised as having a disability are also older people. Rates of disability are also much higher among the 80-plus age group. While older people and people with disabilities make an invaluable contribution to society, they are particularly vulnerable to external shocks and upheaval in their daily environment.

This research study examined the CAP for 14 countries and four Flash Appeals that took place in 2010 and 2011. All the projects (totalling 6,003) submitted to these appeals were examined, the majority (5,330) under the CAP. The primary tool for collecting data was the Financial Tracking Service (FTS) managed by the UN Office for the Coordination of

Humanitarian Affairs (UNOCHA). The FTS project sheets were analysed to identify projects that targeted older people, or people with disabilities, or both. The FTS captures all information on projects in the CAP, including any activities targeting specific groups, and donor funding contributed to the CAP. However, reporting on whether specific projects were funded is done on a voluntary basis either by the donor, the aid recipient, or both. It is recognised that donors' funding is not limited to their contributions to the CAP and Flash Appeals, and in this sense, the research does not provide a complete picture. However, the study is considered to be a sufficient proxy indicator of the levels of official funding allocated to older people and people with disabilities. CAP and Flash Appeal documents are used as planning tools for donor support; they are approved by the Resident or Humanitarian Coordinator and serve as the basis for funding applications to the UN Central Emergency Response Fund (CERF), country-level pooled funds (such as the Common Humanitarian Fund), and other donors.

The study is based on CAP data downloaded from the OCHA FTS from 9–16 November and 12–13 December 2011. The donor-specific information was downloaded from the OCHA-FTS on 5 January 2012.

### Key findings

In 2010 and 2011, 145 (2.4%) of the 6,003 projects submitted to the CAP and Flash Appeals included at least one activity targeting older people or people with disabilities, and 61 of these were funded (1%). Of these 145 projects, most of the other activities focused on general assistance and/or other vulnerable groups. There was an increase between 2010 and 2011 in the overall number of projects submitted, and there was also an increase in the number of

<sup>1</sup> HelpAge International and Handicap International (2012). A study of humanitarian financing for older people and people with disabilities, 2010–2011. Published by HelpAge International, London and Handicap International, Lyon



projects targeting older people or people with disabilities. However, few agencies submitted projects with an activity targeting older people or people with disabilities in both years.

In 2010 and 2011, 47 projects (0.78%) included at least one activity targeting older people, and 18 of these were funded (0.3%). In about half of these projects (21), the targeting of older people accounted for less than 25% of total project activities. In both years, 22 agencies submitted projects that included at least one activity targeting older people. Only three submitted projects in both years. Twenty-two of the projects for older people in 2010 and 2011 (46%) were submitted by one NGO (HelpAge International).

In 2010 and 2011, 98 projects (1.6% of submitted projects) included at least one activity targeting people with disabilities, and 43 of these were funded (0.7%). In both years, 50 agencies submitted projects including at least one activity targeting people with disabilities. Only 10 agencies put forward projects in both years. Among the 98 projects submitted in both years, 29 exclusively targeted people with disabilities, of which 18 were submitted by one NGO (Handicap International).

Only 19 projects (0.3%) included one or more activities targeting both older people and people with disabilities. Of these, four were funded. Four of the 19 projects were submitted by Handicap International and focused exclusively on older people and people with disabilities. The other 15 projects addressed a number of vulnerable groups in addition to older people and people with disabilities, such as women and children. On average, 9% of the total activities in these projects were targeted at meeting the needs of older people and people with disabilities.

In 2010 and 2011, projects including at least one activity targeted at older people or people with disabilities were submitted in 15 of the appeal countries (94%). Projects with activities targeting older people or people with disabilities were put forward in 11 out of the 12 Inter-Agency Standing Committee (IASC) sectors (there were none in the security sector). While this appears to be a strong spread of projects, the figure masks substantial differences between the two groups in terms of their representation in projects within sectors and countries.

Most projects were in three sectors: health, protection, and shelter and non-food items (NFIs). There were only four projects that targeted an activity for older people in the economic recovery sector, and only one of those was funded. In 2010, projects including at least one activity targeted at older people were put forward in appeals in eight countries. This rose to nine in 2011. In 21 countries, there were no projects with activities targeting older people in any sector, in 2010 or 2011: Chad, Central African Republic, the Republic of South Sudan, West Africa (comprising 16 countries), Yemen and Zimbabwe.

In 2010, projects that included at least one activity targeting people with disabilities were submitted in 10 of the 12 IASC-recognised sectors (projects in eight sectors were funded). This fell to nine sectors in 2011 (projects in seven sectors were funded). Most projects were in three sectors: health, water and sanitation, and education. There were no projects in the security sector in either year. In 2010, projects including at least one activity targeted at people with disabilities were submitted in appeals in 10 countries, nine of which received funding. This rose to 12 in 2011, 10 of which were funded. In only one country, Yemen, were there no projects that included any activities targeting people with disabilities in any sector, in 2010 or 2011.

In 2010 and 2011, US\$10.9 billion was contributed by official donors to the CAP and Flash Appeals. A total of US\$73 million was allocated to projects that included at least one activity targeted at older people or people with disabilities (0.7% of overall funding). A total of US\$27.6 million went to projects targeted exclusively at older people or people with disabilities (0.3%).

In 2010, US\$2.6 million was allocated to projects that included at least one activity targeting older people (0.04 % of all funding). This increased to US\$6.7 million (0.13 %) in 2011. Most of this increase is accounted for by a small number of large projects rather than a more consistent coverage across humanitarian responses. In 2010, US\$40.6 million was allocated to projects that included at least one activity targeting people with disabilities (0.7 % of all funding). This fell to US\$22.3 million (0.43 %) in 2011.

In 2010 and 2011, a total of 235 bilateral and multilateral donors contributed funds to the CAP and Flash Appeals. Just over 60 % of all the funding was provided by 10 donor countries. More donors funded projects that included at least one activity for people with disabilities than projects that included at least one activity for older people. In 2010 and 2011, seven donors provided CAP or Flash Appeal funding for projects that included at least one activity targeting older people. The number rose from three in 2010 to five in 2011. Only one donor, the European Commission's Humanitarian Aid department (ECHO), funded such projects in both years. Two of the ten biggest donors to

CAP and Flash Appeals provided no CAP or Flash funding for projects that included activities targeting older people (USA and UK).

The number of donors that provided funding to projects that included at least one activity targeting people with disabilities decreased, from 18 in 2010 to 14 in 2011. Thirteen donor countries allocated funds to such projects in both years. All of the 10 biggest donors to CAP and Flash Appeals allocated some funding to projects that included activities targeting people with disabilities. Of the three biggest donors, funding from the USA decreased from 2010 to 2011, while funding from ECHO and the UK remained constant.

### Conclusions and recommendations

The total amount of projects and funding for both the elderly and people with disabilities remains extremely low, highlighting the significant disparity between the needs of these two vulnerable groups and the humanitarian assistance delivered to meet those needs. A high proportion of the projects submitted to support older people and people with disabilities were presented by two specialist NGOs, HelpAge International and Handicap International (28 %). Many of the other projects submitted (62 %) are in countries where these two NGOs are present and advocating for better inclusion of these two vulnerable groups in humanitarian response.

Only 312 of the 6,003 projects analysed (5.2%) mentioned older people and people with disabilities alongside other vulnerable groups. In other words, thousands of projects made no mention of the potential vulnerabilities of older people and people with disabilities, and how the crisis affected them. Clearly, there is still a long way to go to ensure that the humanitarian system responds to the needs of older people and people with disabilities.

If the humanitarian community is to fulfil its commitment to the impartial provision of humanitarian assistance to those in greatest need, it must take urgent steps to address the needs of two of the most vulnerable groups: older people and people with disabilities

Humanitarian agencies must ensure that needs assessments provide accurate information on all vulnerable groups by collecting data on older people and people with disabilities, and disaggregating the data by age and gender. Greater efforts should be made to document

and share examples of good practice on inclusion of vulnerable groups so that these can be consistently applied during project design and implementation. Cluster Lead Agencies, UNOCHA and Humanitarian Coordinators must provide leadership on this issue to ensure adequate accountability to all beneficiary populations and consistency across countries and sectors. Bilateral and multilateral donors have an essential role to play in encouraging and enabling an appropriate and inclusive humanitarian response, by providing flexible, timely funding that is allocated in proportion to need and on the basis of thorough needs assessment.



HelpAge International, 2011.



# The impact of displacement on older people

Summary of report<sup>1</sup>

An older woman in Pakistan



HelpAge International, Pakistan, 2011

A recent report shines the spotlight on the experience of displacement for older people in an effort to increase understanding of its particular characteristics. Entitled, *The Neglected Generation*, it draws primarily on contexts of internal displacement rather than refugee contexts. Nevertheless, the findings and policy recommendations are applicable to both refugees and IDPs.

## Background

The world is ageing at a staggering and unprecedented rate. By 2012, 12.5 per cent of the world's population was over 60 – the UN definition of an older person. By 2050 there will be more people over 60 years than children, including significant numbers of people over 80 years, who constitute the fastest-growing age group. This translates into an average annual global increase of 29 million older people between 2010 and 2050, of whom 80 per cent will be in developing countries. Women will continue to live longer than men.

At the same time the number of internally displaced persons (IDPs) is increasing. At the end of 2011, the global number of people internally displaced by armed conflict, generalised violence or human rights violations stood at 26.4 million. Older persons form a significant proportion of groups of IDPs and refugees, as 35-65 per cent of them may be over 60 years.

A recent UN paper on the social situation, wellbeing and rights of older persons worldwide states: "it should be noted that while much data and analysis are available on population ageing, data and information about the lives and situation of older persons are strikingly lacking". This lack of understanding and analysis of the concerns and rights of older persons is prevalent in all areas of development, but it is especially stark in humanitarian crises. To date, the attention of international institutions, national governments and those responding to displacement crises has been focused almost exclusively on children, rather than on supporting both of societies' most dependent age groups.

The exclusion of older people in situations of displacement begins with registration to access

assistance, assessments and monitoring systems. Data collection is often inadequate and the numbers of older persons in IDP camps, where data are more likely to be available than for IDPs living in host communities, often remains unknown even if data are collected for other age groups within the population.

When population data are disaggregated by sex and age, disaggregation often stops at age 49, reflecting a form of latent discrimination. Nutrition surveys commonly focus exclusively on children under five and HIV data usually stops at age 45, when reproductivity ceases. Even where age-disaggregated data are gathered, information on older people will not necessarily be captured.

Of the 50 countries reviewed by the Internal Displacement Monitoring Centre (IDMC) for its global IDP survey, only 11 had updated sex- and age-disaggregated data. In only six out of the 50 countries had national policies make specific reference to older people, though three of the six countries had not gathered any information on older people. As a result, older people often only become visible when the return process is under way and their numbers only become apparent as they are left behind in camps many years later.

To date, practitioners and policy makers have devoted scant attention to the impact of displacement caused by human rights violations, conflict and natural hazards on older men and women.

## Key issues and challenges for older IDPs

The report identifies actual concerns of older IDPs based on programme evidence from more than 10 country contexts and includes examples from different locations to inform practice. On this basis, the report identifies the following key issues and challenges for older IDPs:

Older persons form a significant proportion of IDP and refugee groups – sometimes as high as 30-65 per cent in contexts where there are high numbers of older people in the population and where younger or more able-bodied members of the IDP population have migrated elsewhere, returned home or integrated into local communities.

The United Nations High Commissioner for Refugees (UNHCR) recognises older IDPs as among the most at-risk individuals, characterising them as "persons with special needs",<sup>1</sup> alongside the chronically ill or disabled, and those who have experienced very high levels of trauma.

Each stage of the displacement cycle – the flight, the period of displacement and the process of return, resettlement or local integration – confronts an older IDP and service providers with specific challenges that need to be addressed. Prolonged displacement can have a particularly devastating impact on family ties and the community support available to older persons; it cannot be assumed that communities will always assist their old. In many cases, families have had to make painful choices leading to abandonment of older persons in order to survive.

HelpAge and IDMC research and data show that older people are consistently neglected in humanitarian operations and policy, that general programming does not integrate their needs and that they are rarely consulted within IDP operations. Sex- and age-disaggregated data are rarely collected, contributing to invisibility.

Older people have a range of skills, capacities and roles. They often contribute to household income, support household management through childcare and play a role as community leaders, decision makers or mediators. The degree to which these roles are recognised and supported during displacement has a significant impact on the challenges older people face and their ability to survive and recover.

Issues of limited mobility, visual and hearing impairment, and reduced muscle strength amplify the challenges of living in displacement camps and accessing services such as food, health care, and water and sanitation. Specific nutritional needs, chronic health disease and mental deficiencies may require further tailored

<sup>1</sup> HelpAge International and Internal Displacement Monitoring Centre (2012). *The Neglected Generation – the impact of displacement on older people*.



assistance not usually included in packages provided to displaced populations.

Older women require specific attention - due to increased life expectancy, they are more numerous and more likely to be living alone. Protection risks are thus increased for women, who are not necessarily afforded equal status in society. In addition, in many IDP and refugee camps, older women take on the huge responsibility of supporting children whose parents have died or migrated elsewhere.

Some of the main challenges to protecting the rights of older displaced persons include obtaining access to vulnerable older persons who are left behind when more able-bodied flee, securing identification and documentation; ensuring land and housing rights; providing for basic needs; reuniting them with families and other individuals; providing appropriate health care and ensuring access to social support and income. Without an adequate analysis of their needs informing every stage of decision making during displacement, older persons will continue to be marginalised within programmes and policy intended to support the displaced. Crucially, they will continue to form the majority of IDPs and refugees left behind in camps or collective centres while younger people begin new lives for themselves. This is a fundamental breach of older people's basic human rights.

The report makes a number of recommendations targeted at actors with specific protection responsibilities, including national governments, the UN, and humanitarian and development partners working in displacement contexts.

### Recommendations

In order that older IDPs access their rights and entitlements and in recognition of their growing global numbers, protection actors should:

- Address older people's specific needs and their active contributions within national IDP legislation, policy and assistance and the development of regional and human rights law.
- Ensure that national disaster risk reduction plans and frameworks recognise and address the risks that older people face, such as by covering their potential evacuation from areas affected by natural disasters.
- Establish adequate systems for the collection of sex- and age-disaggregated data on numbers and locations of IDPs, including older people.
- Assist older IDPs during flight and while displaced to secure their basic needs and provide adequate levels of protection.
- Pay sufficient attention to the facilitation of durable solutions for older people, including return, resettlement and local integration. Steps may include facilitating adequate

social support for older IDPs, such as by ensuring that they are integrated into any existing national pension and health care schemes and that these incorporate greater sensitivity to the needs of older adults.

- In collaboration with key stakeholders – including older people themselves and service providers such as the UN, national and international NGOs – make efforts to develop and support further research on older IDPs and related issues of concern, such as older people in urban displacement, inter-generational relationships and roles during displacement, and options for durable solutions for older people.
- Take active steps to consult with older people and ensure their participation in the decisions that affect their lives, recognising their capacities as well as the risks they face.
- Integrate older person's concerns into sectoral and multi-sectoral assessments.
- Collect registration and monitoring data disaggregated by sex, age and location to inform programming.
- Ensure that older people have access to information concerning their rights and entitlements. In this context, consider the mobility, visual and aural challenges that older people may have.
- Where populations are fleeing from conflict and natural disasters, liaise with relevant actors to enable access to the most vulnerable remaining behind; to assist with transportation and movement for the most vulnerable; and to support family tracing and reunification for older people.
- Promote programmes to involve older adults and ensure that community centres include "older-friendly" spaces for meaningful social interaction and informal support groups.
- Develop appropriate community-level identification and referral systems for older persons and monitor their access to services.
- Ensure that support for older people is integrated into strategies to assist other age groups. For example, child protection strategies must include their older carers, and families should be supported to take care of their old.
- Ensure that livelihood support for IDPs, returned IDPs and those seeking to integrate locally – including training and small business loans – does not discriminate against older men and women who are still able and willing to work.
- Include and specifically target older people in cash transfer schemes.
- Facilitate access to identification documents that enable older people to obtain social support and provide assistance with administrative processes for the most vulnerable.



An older man in Dadaab camps during the HOA crisis in 2011

HelpAge International, Kenya, 2011

## Nutrition and baseline survey of older people in three refugee camps in Dadaab

Summary of research<sup>1</sup>

*This short summary of the findings of a nutrition survey conducted by HelpAge International in a refugee population in Kenya lend support to two other pieces in the research section of this issue of Field Exchange where lack of funding for older people caught up in humanitarian crises as well and neglect of the needs of older people amongst displaced populations are highlighted. (Ed)*

Between the 3rd–13th of October 2011, HelpAge International conducted a nutrition survey among refugees aged 60 years and above in the three main camps of Dadaab (Ifo, Dagahaley and Hagadera), north-eastern Kenya. The aims of the survey were to estimate the prevalence of acute malnutrition, health and social status of people aged 60 years and above. The survey used two-stage cluster sampling.

A total of 629 older people were interviewed, and their measurements taken (height, half arm span, and mid-upper arm circumference (MUAC)). Body mass index (BMI) was also calculated. The team used questionnaires to collect data on eating habits, disabilities, social and health status, and access to water and sanitation. The prevalence of malnutrition, using MUAC-based case definitions, is given in Table 1.

Table 1: Prevalence of acute malnutrition in older people in Dadaab camps

Class	Case definition	4.63% (95% CI=3.3%; 6.0%)
Global acute malnutrition (GAM)	MUAC <210mm or oedema	4.63% (95% CI=3.3%; 6.0%)
Moderate acute malnutrition (MAM)	185mm ≤ MUAC <210mm without oedema	2.71% (95% CI=1.5%; 3.9%)
Severe acute malnutrition (SAM)	MUAC <185mm or oedema	1.91% (95% CI=0.9%; 3.0%)

The survey found that between 460-840 older people living in Dadaab camps were in need of some form of nutritional support. Risk factors associated with malnutrition were not being included in the general ration, having a low dietary diversity and eating less than three different foods items and less than two meals per day.

<sup>1</sup> HelpAge International (2011). Nutrition and baseline survey of older people in three refugee camps in Dadaab, October 2011. Published by HelpAge International, www.helpage.org



# Disaggregation of health and nutrition indicators by age and gender in Dadaab refugee camps, Kenya

By Henry Mark



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Adequate nutrition in the early years of life is vital for optimal growth and development. However, within the under 60 month (less than 5 years) age group, the nutritional needs vary widely. Despite this, health and nutrition data are often not disaggregated throughout this age range.

The United Nations High Commissioner for Refugees' (UNHCR) Health Information System (HIS) was developed to be a standardised tool with the aim of helping to guide, monitor and evaluate all public health programmes within UNHCRs operations. The data derived from this system are essential in forming evidence based decisions on projects and interventions<sup>1</sup>. HIS is operational in more than 90 refugee camps in 18 countries worldwide, providing monthly data on a number of critical indicators across several sectors (e.g. camp population, growth monitoring, nutrition programmes).

The Dadaab refugee camps in the North East of Kenya were originally opened in 1991. The camps have remained open since, due primarily to continued insecurity, violence and on-going food crises in Somalia. In Dadaab, most data are disaggregated in terms of broad age groups (less than 5 years, 5 years and older) and gender. However, it is uncommon for health and nutrition programmes in Dadaab to disaggregate health and nutrition indicator data for the under 60 month age group. In an exception to routine practice, for a 16 month period spanning 2007-2008, data for a number of key health and nutrition indicators were disaggregated into sub groups for children less than 5 years. This article summarises the results of examining thus disaggregated data for children under 60 months in Dadaab in terms of mortality (all-cause), morbidity (watery diarrhoea only) and admissions to feeding programmes.

## Objectives

The objectives of the research were:

- To determine whether gender- and age-disaggregated data in children under 60 months of age were more effective at measuring morbidity and mortality rates than data aggregated across the age range.
- To investigate how representative aggregate age data for children less than 60 months of age compared with each disaggregated age group individually.
- To investigate whether disaggregated data have the potential to be a more accurate tool to guide and monitor health and nutrition programmes.

## Methods

During the 16 month period, data were collected by UNHCR and their implementing partners using HIS protocols. The under 60 month age range was disaggregated into four

sub-groups for age (< 6 months, ≥6-<12 months, ≥12-<24 months, ≥24-<60 months) and aggregated as < 6 months.

Morbidity and mortality data were classified by gender as is standard practice in all UNHCR programmes utilising the HIS. Feeding programme admission data was not disaggregated by gender (standard practice also).

Monthly data for each indicator were provided for all three of the camps that were operational at the time of data collection: Dagahaley, Hagadera and Ifo. Data across the age range were aggregated retrospectively (referred to as 'age aggregate' data) for comparison with the individual age group data in this study. The aggregate data depict how data for these indicators would have appeared had disaggregation not been conducted during this time period.

Morbidity data were collected at health centres, within each of the camps. Mortality data were collected in health centres and by community health workers throughout the camps. Accurate monthly population data were provided by UNHCR for each of the individual age groups and genders allowing mortality and morbidity rates to be calculated. The data displayed for both mortality and morbidity represent deaths (all causes) or cases of watery diarrhoea per 1000 of the specific population per month respectively. All data represented in this article are an aggregate of the three camps and are referred to as 'Dadaab'.

Nutrition programmes available in the camps are supplementary feeding programmes (SFP) for moderate acute malnutrition (MAM) and therapeutic (TFP) and outpatient programming (OTP) for severe acute malnutrition (SAM) management. Feeding programme admissions were collected on a monthly basis by health workers in each of the camps and were disaggregated for each of the four age groups, but not for gender. Data for the three camps were compiled retrospectively to provide aggregate 'Dadaab' data. Feeding programme admission rates were calculated as number of admissions per 1000 of the specific population per month.

## Results

### Sample characteristics

Table 1 shows the mean sample characteristics for the data collection period. The sex ratio shows that within each age group, the proportion of males to females was comparable.

### Mortality variations between genders

General Linear Model (GLM) ANOVA was conducted on total pooled data to assess the overall gender variation in mortality. The analysis suggested there was a significant difference in mortality rate between genders

( $p=0.003$ ). However, one-way ANOVA conducted on data grouped by age suggested there was no significant difference ( $p=0.401$ ).

### Mortality variations between age groups

Figure 1 shows the mean mortality rate for each age group in Dadaab. One-way ANOVA was conducted to assess the variation between each individual age group and the aggregate age mortality data, within each gender. The findings of the analysis are summarised in Table 2. One-way ANOVA was also conducted to assess the mortality rate variation between each of the age groups individually.

The mortality rate for female infants under 6 months of age was significantly higher than the aggregate age mortality data. A significant difference also existed between the ≥12 < 24 months and ≥24 < 60 months age groups and the aggregate age mortality data in both genders. Both the ≥12 < 24 months and ≥24 < 60 months age groups had a significantly lower mortality rate than the aggregate age data.

There was no significant difference in the mortality rate between the <6 month and ≥6 < 12 months age groups. However, there was a significant difference in mortality rate between both of these age groups and the ≥12 < 24 month and ≥24 < 60 month age groups observed in both genders (see Figure 1).

### Morbidity (watery diarrhoea) variations between genders

GLM ANOVA was conducted to assess the variation in morbidity (watery diarrhoea) rates between genders. No significant variation was detected ( $p=0.578$ ).

### Morbidity (watery diarrhoea) variations between age groups

Figure 2 shows the mean morbidity rate for each age group in Dadaab. One-way ANOVA was conducted to assess the variation between each individual age group and the aggregate age mortality data, within each gender. One-way ANOVA was also conducted to assess the morbidity rate variation between each of the age groups individually.

All of the individual age groups were significantly different to the aggregate age morbidity data, as summarised in Table 3. The only two age groups that did not have a significantly different morbidity rate compared with each other were infants <6 months and ≥6 < 12 months of age. Figure 2 indicates that the morbidity rate was significantly higher in the two youngest age groups, with a sharp decrease in morbidity rate in children ≥12 month of age.

<sup>1</sup> UNHCR. Health Information System. 2011 [cited 2012 09/03/2012]; Available from: <http://www.unhcr.org/pages/49c3646ce0.html>. See also research piece on HIS in this issue of Field Exchange.



### Feeding programme admission rates

Admission rates to all of the nutrition programmes provide an insight into the nutrition situation within each of the age groups during the study period (see Figure 3). There is low availability of treatment for MAM and SAM in infants <6 month of age that affects the admission rate for this age group which is very low (rate/1000 of population/month is SFP 2.9, TFP/SC 7.6 and OTP 1.7). The lack of treatment options for this age group is a concern, given the high rates of morbidity and mortality observed in this age group (as highlighted above).

With the exception of the <6 month age group, Figure 4 shows a clear trend in decreasing admissions to all nutrition programmes with age from 12 months. This trend mirrors the decrease seen in the mortality and morbidity data for the same age groups. There was a significant fall in the admissions rates between the ≥6 <12 month and ≥12 <24 month age groups, for both SFP (p=0.021) and TFP/SC (p=0.001).

These variations mean that aggregate data for the <60 month age group provides a significant underestimation of the admission rates for the ≥6 <12 months and ≥12 < 24 month age groups for all of the feeding programmes. Equally, the aggregate data provide an overestimation of admissions to all of the feeding programmes in the ≥24 <60 months age group.

### Discussion

Although the refugee camp context is unique and may not reflect the situation in which many health programmes operate, the findings presented here pose interesting considerations that apply to the wider humanitarian sector, as well as to other refugee settings.

When mortality data were pooled for age, a significant difference in mortality rate was detected between genders. However, this association was not seen when data were grouped for age, suggesting that significant amounts of data may be needed in order to detect such differences. This trend has also been noted in previous research in non-refugee populations in Kenya<sup>2</sup>. To determine if gender disaggregated indicators for mortality are beneficial, data collection over a longer time period is needed. This would ascertain if there are any significant gender differences in mortality within each age group. There is also a need to determine if any scenarios, such as a quick onset emergency, may impact more significantly upon a specific gender, perhaps through a change in health seeking behaviours of caregivers.

In female infants <6 months of age, there was a significant difference in mean mortality rate compared with the aggregate age data. The mortality rate in male infants < 6 months of age was not significantly different from the aggregate age mortality data. However, the analysis showed there may be a weak association (p=0.087) and this is worth further investigation. Furthermore, the aggregate age data gave a significant overestimation of the mortality rates in all age bands for all children over 12 months of age for both genders.

A significant difference was seen in the morbidity rate between all of the individual age groups and the aggregate age data, for both genders. In this instance, the aggregate morbidity data gave a significant underestimation of morbidity in the youngest two age groups and a significant overestimation in the eldest two age groups.

Aggregate data may detect differences in the overall morbidity and mortality trends in a population. However this analysis strongly suggest that aggregate age data for infants and children less than 60 months of age does not accurately represent morbidity and mortality throughout the age range. Perhaps most importantly in relation to health and nutrition programmes, the aggregate data fail to reflect the high morbidity and mortality rates in infants <12 months of age and the strong, clinically meaningful decrease in morbidity and mortality rate with increasing age. This trend is mirrored in nutrition programme admissions that decrease with increasing age. Disaggregated data may also allow for more accurate and timely responses to changes in the health and nutrition status of specific population groups, guide and monitor specific health and nutrition interventions and also help improve targeted resources allocation.

Public health and nutritional interventions may target specific age groups (e.g. complementary feeding interventions to children ≥6-<24 months of age, exclusive breastfeeding support to infants < 6 months) but detection of impact is masked by aggregate data. Given the urgent need to strengthen the management of acute malnutrition in infants <6 months, the collection and presentation of health and nutrition data in infants < 6 months helps to define the caseload and spotlight the need.

The age categories used for disaggregation in this study are closely matched to significant changes in the nutritional requirement and development of infants and young children. In some situations it may be suggested that the >12 month age groups could be aggregated. However, given the significant difference in both the morbidity rate between the ≥12 <24 and ≥24 <60 month age groups and the admission rates to the feeding programmes, the four age groups used in this study would seem appropriate for future data collection.

This study presents a strong case for age disaggregation of data in children <60 months. Further research is needed to determine the cost:benefit (financial, capacity, time) of such disaggregated data collection, the additional burden this would place on existing health and nutrition programmes and their implementing partners and how to address these. The implications will partly depend on prevailing practice that does vary. For example, some implementing partners in Dadaab routinely record only aggregate data at data collection point (e.g. a child is only classified as <5 years), while others collect data by smaller age groups (e.g. < 6 months) that are aggregated for reporting. An agreed standardised approach to age disaggregation would greatly enable comparisons between UNHCR programmes, as well as with non-UNHCR programmes. There is a need to conduct further research with a larger sample size and within different settings in order to better understand the dynamics and strengthen efficacy of gender and age disaggregated data collection in this age range in different humanitarian contexts.

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<sup>2</sup> Hill, K. and D.M. Upchurch, Gender differences in child health - evidence from the demographic and health surveys. Population and Development Review, 1995. 21(1):p.127-151.

Table 1: Sample characteristics

Age Group	Mean population		
	Male	Females	Sex ratio
<6 months	1,034	1,031	1.003
≥6 <12 months	1,457	1,429	1.020
≥12 <24 months	3,073	3,020	1.018
≥24 <60 months	10,077	9,568	1.053
< 60 months (aggregate)	15,641	15,048	1.043

Table 2: Differences in mean mortality rate between age groups for males and females in Dadaab

Age group comparison	Male P value	Female P value
<6 months versus < 60 months	0.087	0.023
≥6 <12 months versus < 60 months	0.563	0.154
≥12 < 24 months versus < 60 months	0.015	<0.001
≥ 24 < 60 months versus < 60 months	0.004	<0.001

Table 3: Differences in mean morbidity (watery diarrhoea) rate between age groups for males and females in Dadaab

Age group comparison	Male P value	Female P value
<6 months versus < 60 months	0.004	0.006
≥6 <12 months versus < 60 months	0.002	0.001
≥12 < 24 months versus < 60 months	0.001	<0.001
≥ 24 < 60 months versus < 60 months	<0.001	<0.001

Figure 1: Line graph of mean mortality rates for males and females in all age groups in Dadaab, with 95% confidence intervals

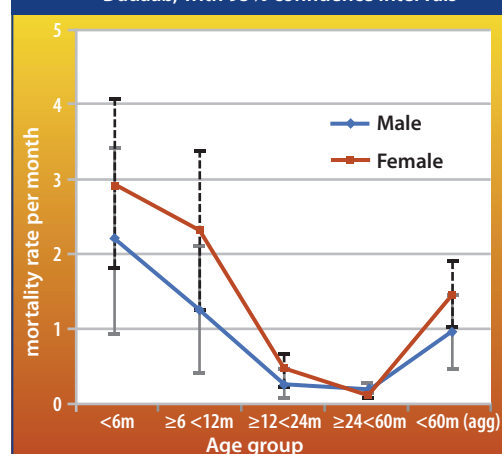


Figure 2: Line graph of mean morbidity (watery diarrhoea) rates for males and females in all age groups in Dadaab, with 95% confidence intervals

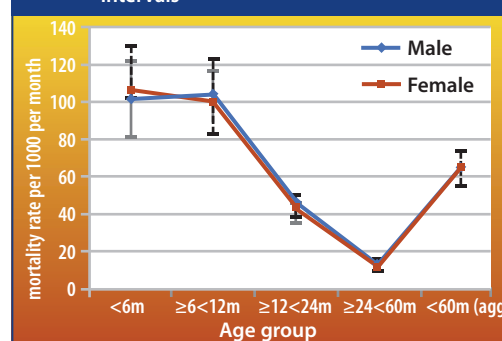
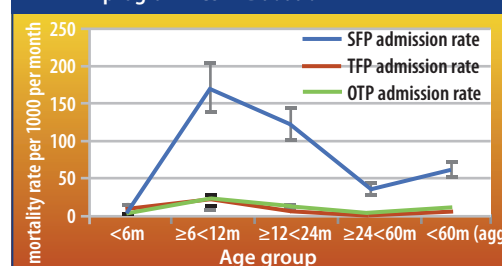


Figure 3: Admission rates to supplementary, therapeutic and out-patient feeding programmes in Dadaab





By Natasha Lelijveld



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Mothers and children waiting outside the malnutrition ward at the Queen Elizabeth Hospital, Blantyre

# Qualitative study of supplementary suckling as a treatment for SAM in infants

This article summarises key findings of an MSc thesis<sup>1</sup>

N Lelijveld, Malawi, 2012

## Background

The focus of most acute malnutrition research and programming to date has been on the management of children aged 6 to 59 months; this is slowly changing. A recent study estimated that of 20 million children under 5 years with severe acute malnutrition (SAM) worldwide, 3.8 million are infants under 6 months (infants <6m)<sup>2</sup>, dispelling a common misconception that malnutrition in this age group is rare. Further, the final report from the Management of Acute Malnutrition in Infants (MAMI) Project<sup>3</sup> stressed the paucity of research regarding management of this age group, in particular highlighting the insufficient evidence and lack of a 'gold standard' treatment method.

### Box 1: What is Supplementary Suckling?

Supplementary Suckling (SS) provides the SAM infant <6m with therapeutic milk in order to initiate rehabilitation and weight gain, while also aiming to re-establish exclusive breastfeeding through stimulating relactation.

SS is sometimes referred to as Nursing Supplemter, LactAid Supplemter or Breastfeeding Supplemter.

Malawi's National Guidelines on Community Management of Malnutrition recommend SS be implemented as follows:

- The therapeutic milk is given using a size 8 NGT (naso-gastric tube).
- Therapeutic milk is put in a cup. The mother holds the baby in her arms and the cup with the milk in one hand.
- One end of the tube is put in the cup and the other end of the tube is put on the breast at the nipple. The infant is offered the breast in the normal way so that the infant attaches properly.
- When the infant suckles on the breast, with the tube in his/her mouth, the milk from the cup is sucked up through the tube and taken by the infant.
- The cup should be at least 10cm below the level of the breast so the milk does not flow too quickly.
- The mother can hold the tube at the breast with one hand or may find it more convenient to hold the tube in place with a strip of tape.
- It may take one or two days for the infant to get used to the tube and taste of the therapeutic milk.

See also Figure 2

The prevalence and immediate/longer term consequences of growth faltering during the first 6 months of life have received greater attention of late, as further evidence of the importance of nutrition between conception and 2 years (the 'critical 1000 days') has come to light<sup>4,5</sup>. This period of 1000 days is also referred to as the 'window of opportunity' as nutrition interventions have the potential to prevent lasting damage and are most cost-effective during this time<sup>6</sup>.

Three distinct stages of nutrition affect growth during these 'critical 1000 days': maternal nutrition during pregnancy, exclusive breastfeeding for 6 months and the complementary feeding period from 6 -< 24 months. Each stage is different and requires unique knowledge and research, care and interventions. Nutrition interventions during pregnancy and from 6 - 24 months are well studied and largely understood. However it is a very different story for interventions between birth and 6 months, the least studied and understood stage of the '1000 days'.

The motivation for this research project was in response to the MAMI Report, to build the evidence base regarding the use of supplementary suckling (SS) in infants <6 months (see Box 1 on SS). This qualitative research explores the barriers and facilitating factors to implementing SS as a treatment for SAM in infants <6m. The project also explored the acceptability of using SS with orphans who are malnourished, and investigated perceived underlying causes of SAM in infants, in order to improve use and acceptability of SS across all settings.

### Supplementary suckling in the literature

A review of international and national guide-

lines<sup>7</sup> found that SS is recommended by the majority (97%) of guidelines as the main method of treatment for SAM in infants <6m, however in practice it appears to be rarely used. Malawi is a typical example of this and hence was the setting for this research.

A literature review of SS also revealed a disparity between its regular mention in national policy documents and very little evaluation, or even mention, in the scientific literature. Just two studies, previously published by ENN's Field Exchange, have evaluated SS as a treatment for malnutrition in infants<sup>8,9</sup>. One further study assesses effectiveness of SS at preventing hospital-induced malnutrition in infants<sup>10</sup>. Other studies have considered SS in relation to situations besides malnutrition, such as initiation of lactation in adopting mothers or feeding of Low Birth Weight (LBW) infants following a period of hospitalisation.

### Treatments available to infants <6m

The management of infants <6m suffering from SAM is challenging as the treatments generally on offer (Ready-to-use Therapeutic Food (RUTF)) are not indicated in this age group. SAM management in infants <6m requires specialist staff knowledge and time-intensive skilled input to treat and restore effective, exclusive breastfeeding whenever possible. There is currently no evidence-based treatment for infants <6m with SAM as SS has not been formally evaluated. Other treatment options for infants at present include administering therapeutic milk via a cup, a spoon or an NG tube. SS is, however, thought to be the best treatment option for these infants as it is unique in its potential to re-establish exclusive breastfeeding in the context of therapeutic treatment.

<sup>1</sup> Lelijveld N (2012) "Barriers and Facilitating Factors to Implementing Supplementary Suckling as a treatment for Severe Acute Malnutrition in Infants: a Qualitative Study". Unpublished MSc thesis, UCL

<sup>2</sup> Kerac M., Blencowe, H., Grijalva-Eternod C., McGrath, M., Shoham, J, Cole, T. J. & Seal, A. (2011). Prevalence of wasting among under 6-month-old infants in developing countries and implications of new case definitions using WHO growth standards: a secondary data analysis. Archives of Disease in Childhood, 96, 1008-1013

<sup>3</sup> MAMI. (2010). Management of Acute Malnutrition Project Report. Emergency Nutrition Network, UCL Centre for International Health and Development, Action Contre la Faim [Online]. Available: <http://www.enonline.net/research/mami> [Accessed 03/01/ 2012].

<sup>4</sup> Victora, C. G., De Onis, M., Hallal, P. C., Blössner, M. & Shrimpton, R. (2010). Worldwide timing of growth faltering: revisiting implications for interventions. Pediatrics, 125, e473-e480

<sup>5</sup> S.U.N. (2010). 1000 Days, Scaling Up Nutrition [Online]. Available: <http://www.thousanddays.org/about/> [Accessed 03/04/ 2012].

<sup>6</sup> World Bank (2006). Repositioning Nutrition as Central to Development; a strategy for large scale action. Washington DC, USA.

<sup>7</sup> Kerac M, Trehan I, Lelijveld N, Onyekpe I & Manary M (2012). Inpatient Treatment of Severe Acute Malnutrition in infants <6 months: An AGREE appraisal of national protocols and GRADE review of published literature. Unpublished; Presented at WHO Nutrition and Growth Advisory Group Meeting, 1-3rd Feb, 2012.

<sup>8</sup> Corbett M (2000). Infant Feeding in a TFP. Field Exchange. UK.

<sup>9</sup> Oberlin O & Wilkinson C (2008). Evaluation of Relactation by the Supplemental Suckling Technique. Field Exchange. UK.

<sup>10</sup> Alves, J., Figueira, F. & Nacul, L. C. (1999). Hospital Induced Malnutrition in Infants: Prevention by Relactation. Indian Pediatrics, 36, 484-487.



The lack of an evidence-based treatment method for infants <6m, in addition to the limited implementation of SS worldwide, leads to the need to understand better the barriers and facilitating factors for implementing SS, with the ultimate aim of improving its usage and the evidence base.

**Method**

Qualitative interviews and focus group discussions (FGDs) were conducted at Queen Elizabeth (QE) Hospital in Blantyre, Malawi with mothers, carers and nursing staff (caregivers) using a semi-structured topic guide. Thematic analysis of data using Long Table Method<sup>11</sup> was applied in order to identify themes.

**Objectives**

- To explore the barriers and facilitators to implementing SS, as perceived by care-givers in Blantyre, Malawi.
- To explore the acceptability of using SS as a treatment for malnutrition in orphans, as perceived by caregivers in Blantyre, Malawi.
- To explore the causes of SAM in infants <6 m, as perceived by caregivers in Blantyre, Malawi.

The background literature notes that staff support and mothers' confidence appear to be important in the success of SS<sup>12</sup>, hence these groups comprise the target populations for this study. Convenience sampling was largely used, however purposive sampling ensured that healthcare staff recruited had some experience of treating SAM and that the 'mothers' were a female carer of an infant less than 2 years old, either breastfeeding or non-breastfeeding. See Figure 1 for sample size; it was felt that saturation was reached and exceeded.

Interviews and FGDs began with a standardised explanation of SS, including an image used in the Malawi national guidelines (see Figure 2). Participants were then encouraged to ask questions, allowing further clarifications where needed.

The topic guide was initially designed by the researcher, with input from relevant professionals, including the national Infant Feeding in Emergencies (IFE) committee. It was then piloted on three mothers, one nurse and one focus group, and discussed with the translator prior to completion. All participants were offered a convenient time for interview and use of a translator. No staff members requested the use of the translator whereas all but one of the mothers did. Interviews lasted between 20 and 40 minutes. FGDs lasted between 1 hour and 1 hour 30 minutes.

Inductive coding and taking of memos took place throughout data collection; as saturation was reached themes began to solidify and emerge clearly. Following the creation of some key themes, Long Table Method was used, with the translator, to further link, expand and refine themes, until the final results were created. The translator's active role as an additional coder was important due to his prominence during the interviewing and translating process.

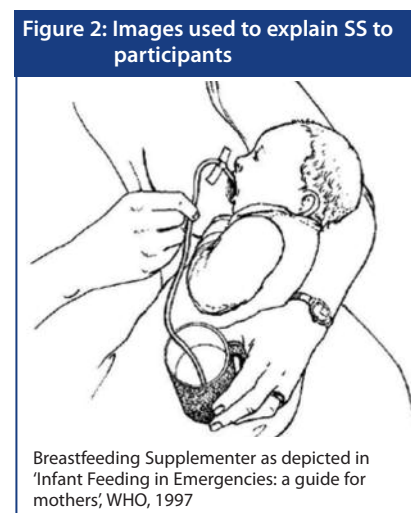
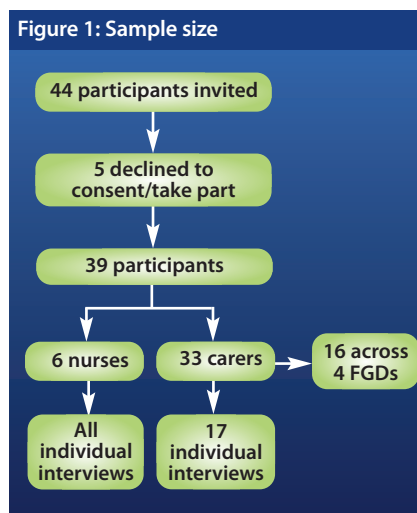
**Results**

*Barriers, facilitating factors and solutions to SS implementation*

Five Major Themes and patterns emerged from the data which relate to each of the barriers, facilitating factors and solutions discussed by the participants.

- Motivation
- Breastfeeding views
- Practicality
- Understanding
- Perception of medicine

These Major Themes are generic and will likely affect the implementation of SS in all settings. For the Malawi setting, this study identified Sub-themes under each major theme, which are less generic but allowed for tailored solutions to implementing SS in Malawi (see Table 1 for summary of Major Themes and Sub-themes).



**SS well received following thorough explanation:**

*"On my side it is not difficult to follow"*  
Mother of infant on Nursery Ward

*"Siyovuta" – "It is not a difficult one"*  
Mother in a FGD

**'Understanding' as a barrier to implementing SS:**

*"Some would not be happy to use [SS] because of not understanding how it is working"*  
Mother of child on Malnutrition Ward

*"The problem is telling others of this technique; they could be scared that you would pierce though their breast with the tube or feed the infant through the nostrils"*  
Mother on Malnutrition Ward

*"There are some who could ask, but others won't, they will just start telling others that I have found such-such a mother feeding a child with a tube, I think she is HIV infected... they will say you have a problem... saying she is just pretending to use the breast, the main feeding channel is the tube"*  
Mother in a FGD

*"I don't know how much is the milk or what type or who will be offering it. Will we be buying?"*  
Mother on Nursery Ward

**Extra staff support needed:**

*"I think first of all, the mothers should have a health education about the tube, yes, how to take care of it... and maybe there should be somebody to help them with the milk because a child could be crying and needs to be breastfed... Maybe there should be somebody to help so that the mik should be readily diluted"*  
Nurse working on Nursery Ward

**Concerns for using SS with orphans:**

*"Of course it can be difficult but if you have discussed it with the family first, it is fine"*  
Nurse on Malnutrition Ward

*"Due to this disease [HIV] one is supposed to be tested first; you should know the HIV status, if she is ok she could take the child and breastfeed it, but if HIV infected then it is not right for her to breastfeed the child"*  
Mother in FGD

*"They must take the carer from the particular 'family line' that the mother has died...if the sister is not breastfeeding then the grandmother must breastfeed"*  
Nurse on Malnutrition Ward

<sup>11</sup> Krueger RA & Casey M (2000). Focus Groups: A practical guide for applied research, California USA, Newbury Park: Sage.

<sup>12</sup> MAMI. (2010). Management of Acute Malnutrition Project Report. Emergency Nutrition Network, UCL Centre for International Health and Development, Action Contre le Faim [Online]. Available: <http://www.enonline.net/research/mami> [Accessed 03/01/ 2012].



Table 1: Summary of major themes and sub-themes affecting SS implementation

Major Themes		Motivation	Breastfeeding views	Practicality	Understanding	Perception of intervention
Sub-themes	Barriers	Child's comfort	Choosing not to breastfeed	Hygiene concerns	Lack of understanding	Dislike of intervention
		Disinterest		Time pressures		
Sub-themes	Facilitating factors	Doing the best for infant	Strong breastfeeding culture	Own responsibility	Empathy for lactation issues	Abide by doctors
						Better than the alternatives

This research found that SS is generally received positively by caregivers in Blantyre, Malawi, with 82% of participants saying they would use SS and 74% saying it looked easy.

However, 'understanding' of a variety of aspects of SS stood out particularly as a common barrier but with a relatively simple solution. A tailored explanation of SS, particularly of aspects which were frequently asked about such as the placement of the tube, HIV-related fears and practicalities such as hygiene, would address many of the barriers perceived by caregivers in this setting. As a result of this research, a tailored explanation of SS, addressing FAQs, has been created and will be used by QE Nursery Ward as they begin to implement SS. Other settings should consider conducting a small number of interviews with mothers and nurses in order to tailor this explanation of SS to their specific location.

Staff also identified that their workload is over-stretched and therefore worried about the amount of time needed to address mother's understanding of SS and other practicalities. The solution suggested for this was the acquisition of a dedicated staff member for this task, which has been acknowledged by the hospital. Other health facilities need to consider strongly their human resource requirements before implementing SS as it is thought to be fairly time-intensive.

*Use of SS for orphans*

The application of SS for orphans (where a wet nurse is identified for an orphaned infant <6m with SAM) was also explored by this study, with mixed results. Participants were divided as to whether breastfeeding of an orphaned infant is acceptable in the culture; the usual barriers and facilitating factors also applied here. HIV was a particularly contentious issue in this case. Some participants did feel that SS for an orphan is acceptable provided the carer is a direct family member, is HIV negative and a discussion has been held with the family. It is therefore advised that, at this time, application of SS for orphans should be assessed on a case-by-case basis in Malawi and in settings with similarly high prevalence of HIV.

*Perceived causes of SAM in infants < 6m*

Lastly, causes of SAM in infants in this setting were found to be largely related

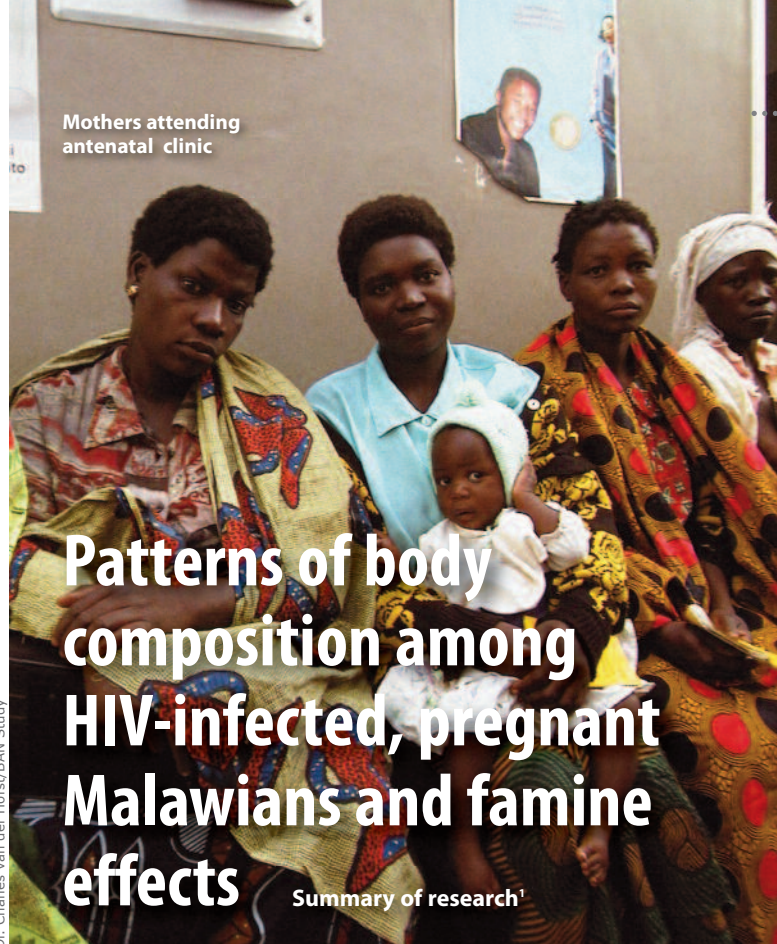
to breastfeeding problems or choices, such as perceived breastmilk insufficiency, consistent with causes identified in previous studies. One cause worth highlighting is 'maternal infection', which was frequently mentioned by participants as the main cause of malnutrition in infants. The relationship between child infection and malnutrition is widely recognised, however the relationship between maternal infection and child malnutrition far less so. The results of this study suggest that this may be a major cause of infant malnutrition which is in need of further exploration.

These results are having immediate policy and practice implications for the Nursery Ward at QE hospital, which now plans to implement SS and hire a Lactation Support nurse in order to address notable barriers within themes of Understanding, Breastfeeding views and Practicality. In addition, the ward will be using the 'Explanation of SS' created from these results. These changes to local policy and practice are first aimed at having an immediate positive impact on infants on the ward, but also aim to contribute to existing research findings. Conducting a larger-scale acceptability trial, post SS intervention, is necessary to consider whether caregiver's acceptance of SS is still present having actually used the technique.

Other inpatient health facilities across the world should consider the prevalence of SAM in infants <6m in their setting and then consider implementing SS. Locating specific views of caregivers within the five major themes outlined should help to plan the best mode of implementation and maximise chances of success. As a result of this research, further work in QE Hospital now has the potential to revolutionise treatment of SAM in infants <6m across the world, giving infants a much better outlook, both during and after those critical '1000 days'. It is hoped that health facilities in other inpatient settings will also follow suit.

For more information on this study, contact: Natasha Lelijveld, email: natasha.lelijveld.11@ucl.ac.uk

If you are planning studies around infants <6m, let us know, email: marko.kerac@gmail.com



Dr. Charles van der Horst/BAN Study

**Patterns of body composition among HIV-infected, pregnant Malawians and famine effects**  
Summary of research<sup>1</sup>

Few studies have examined maternal anthropometry and its predictors during pregnancy in sub-Saharan Africa in the context of HIV/AIDS. In resource-limited countries, exposure to inadequate dietary intake, frequent reproductive cycles, infectious disease, and demanding physical labour may alter women's body composition dynamics during pregnancy compared to what is seen among women in countries where these stresses are mostly absent. The importance of seasonality to reproductive health is emphasized by several studies across Africa. Among predominantly HIV uninfected populations in Africa, lower gestational weight gain and increased maternal morbidity have been associated with the rainy season, which is often characterized by increased food shortage, physical labour, and malarial infection rates. Because loss of lean body mass has been shown to be a predictor of HIV survival, independent of CD4 count, it is important to describe the changes in body composition throughout pregnancy and to identify its key determinants in HIV-infected populations.

A recently published study hypothesized that mid-upper arm circumference (MUAC), arm muscle area (AMA) and arm fat area (AFA) would decrease in HIV infected populations, given the tendency for maternal wasting combined with the increased effects of food shortage, physical labour, and infection rates during the rainy seasons. The researchers analyzed repeated anthropometrics from HIV-1 infected pregnant Malawian women to evaluate two primary objectives: (1) to describe patterns of change in maternal weight, MUAC, AMA, and AFA among HIV infected pregnant women, and (2) to identify potential seasonal, CD4 count, and socio-demographic factors, including age, parity, marital status, wealth, and the educational level and occupation of both the mother and her partner, as predictors of maternal anthropometrics in this population.

The study was based on a secondary data analysis, including prenatal women who consented and met pre-delivery screening criteria between April 2004 and August 2006 for the Breastfeeding, Anti-retrovirals, and Nutrition (BAN) Study, a postnatal clinical trial. The data

<sup>1</sup> Roshan T et al (2012). Patterns of body composition among HIV-infected, pregnant Malawians and the effects of famine season. Maternal and Child Health Journal, volume 15, No 1. Doi10.1007/s10095-012-0970-6



for the analysis were derived from surveys conducted to screen women who consented to be in the BAN Study and to collect baseline demographic, anthropometric, dietary, and health status data during antenatal care and at delivery. Study participants were recruited from four sites with outreach to all pregnant women in Lilongwe, Malawi.

By August 2006, 1,745 women met initial antenatal screening criteria: > or =14 years of age, no prior antiretroviral medication use, < 30 weeks gestation, and no serious complications of pregnancy. Of these, 1,336 women returned for the second antenatal screening visit approximately 1 week later and met eligibility criteria based on blood test results: HIV positive status, CD4 count  $\geq 200$  cells/dL, haemoglobin  $\geq 7$  g/dL, and normal liver function tests ( $\geq 2.5$  times the upper limit of normal). At the second antenatal visit (the baseline visit), eligible women completed a baseline interview and physical exam. Of the 1,336 eligible women at the baseline visit, 168 were missing a height measurement and 38 were missing another key baseline factor. Therefore, there were 1,130 women available for this analysis. The sample size of 1,130 was determined to be sufficient to detect a 1 unit difference in the main outcomes with 90% power.

None of the women took antenatal antiretrovirals during this or prior pregnancies. In accordance with national guidelines from Malawi's Ministry of Health on initiation of antiretroviral treatment, these women did not qualify for treatment due to their high CD4 count levels. Additionally, at the time, Malawi's national guidelines on prevention of mother to child transmission of HIV did not include antiretroviral prophylaxis during pregnancy. Data were collected on interim malarial infections but were not available for all participants. All women received iron and folate supplements, screening for anaemia, malaria prophylaxis, and mosquito nets.

The BAN Study protocol was approved by the Malawi National Health Sciences Research Committee and the institutional review boards at the University of North Carolina at Chapel Hill and the U.S. Centres for Disease Control and Prevention.

Gestational ages at baseline and subsequent prenatal visits were derived from the date of last menstrual period (LMP) or if LMP was unknown, the first available fundal height (FH).

Weight, height, MUAC and triceps skinfold thickness were measured at each visit by trained BAN nutrition staff. For MUAC and skinfolds, quality assurance checks were performed periodically to ensure consistent inter- and intra-reliability of measurements. Weight was measured to the nearest 100 g at each visit. MUAC was measured to the nearest 0.1 cm. MUAC and triceps skinfold thickness were used to AMA, an indicator of muscle mass, and AFA, an indicator of fat mass. CD4 count was measured as a cross-section during the first screening visit.

In Malawi, food availability, malnutrition, and infectious disease morbidity vary substantially by season due to cycles of rainfall and agricultural production. The famine season, locally referred to as the 'Green Famine', extends from August to March and includes the rainy season prior to the harvest. This time

period is marked by limited food availability as stores of the previous year's crops are depleted and incidence of infectious diseases peaks. Exposure to the famine season was measured as the number of days during the month prior to each measurement that were spent in the famine season.

Basic socio-demographic information was collected during the baseline interview: age, parity, marital status, household characteristics, and the educational level and occupation of both the mother and her partner. Wealth was defined based on a wealth index, derived from principal components analysis (PCA) of household characteristics. The different categories or levels of wealth were represented by index quintiles. Depending upon the estimated gestational age at baseline (range: 12–30 weeks), women were asked to return for follow-up prenatal care at approximately 28, 32, and 36 weeks gestation. The average gestational age at each follow-up visit was 29, 33, and 36 weeks, and the number of participants at these visits was 694, 868, and 703, respectively. More than 90% of the sample had at least 2 visits. The average time between visits was 4.5 weeks (Standard Deviation (SD) = 2.8). The average total time between the baseline and last follow-up visits was 10.4 weeks (SD = 5.1). The time between the last antenatal visit and delivery ranged from 0 to 10 weeks because in a few cases, the last visit coincided with the delivery date. The analyses therefore reflected changes during the later stages of pregnancy.



Dr. Charles van der Horst/BAN Study

## Results

A crude analysis of weight change over the 2,338 intervals between consecutive prenatal visits indicated that 17.3% of intervals showed weight loss. About half of intervals also had a loss in AMA (48.7%) and AFA (53.1%). Of those intervals in which muscle stores were lost, 34.3% lost both muscle and fat stores. The prevalence of wasting (MUAC < 22 cm) was 1.9%, 3% of women gained no weight, 8.4% showed weight loss, and 59% had low fat stores (AFA < 20 cm<sup>2</sup>). Most women in this sample were young with low parity. The median baseline CD4 count was 439 (inter-quartile range: 319–592) per 100 cells/dL. Average maternal weight, MUAC, AMA, and AFA at baseline was 58.7 kg (SD = 8.2), 26.5 cm (SD = 2.7), 36.7 cm<sup>2</sup> (SD = 6.5), and 19.7 cm<sup>2</sup> (SD = 8.1), respectively.

In bivariate linear analysis, maternal weight increased at a rate of 0.24 kg per gestational week. There was no evidence of change in MUAC, while an increase was noted for AMA

and a decline was noted for AFA. In multivariate analysis, weight increased at a rate of 0.27 kg per gestational week and AFA decreased at a rate of 0.06 cm<sup>2</sup> per gestational week. Exposure to the famine season was also associated with decreased weight gain and loss of AFA per week of pregnancy. CD4 count, as a continuous variable, was directly associated with MUAC, AFA, and weight. Each 100 cells/dL increase in CD4 count was associated with an increase of 0.08 cm (95% CI 0.01, 0.15) in MUAC, 0.15 cm<sup>2</sup> (95% CI -0.01, 0.30) in AMA, 0.21 cm<sup>2</sup> (0.01, 0.41) in AFA, and 0.24 kg (0.03, 0.45) in weight.

Wealth, occupation, education level, age, and parity were associated with anthropometric changes in MUAC, AMA, AFA, or weight during pregnancy. Women with greater wealth had increased MUAC and AFA while occupation, but not wealth, among women had a significant direct positive association with AMA. Women who completed primary education had higher MUAC due to increased AMA than those who completed secondary or higher level education. Age and parity were positively associated with MUAC and AMA, but only age was associated with weight. AFA was unrelated to age and parity.

Over two-thirds of the women in the study had some exposure to the famine season in the month prior to an anthropometric assessment. Exposure to the famine season negatively impacted weight gain in this study, which is consistent with a report of highest pregnancy weight gain among Malawian women who

deliver in July–September (mean gain 0.25–0.30 kg/week) and lowest gain among those who deliver in January–May (mean gain 0.10–0.20 kg/week).

The rate of change in MUAC and AMA during pregnancy was modified by exposure to the famine season. Women with no exposure to famine during the previous month experienced a subtle increase in MUAC and a significant increase in AMA. In contrast, women who spent the entire preceding month in a famine period had a significant decrease in MUAC and AMA per week of gestation.

In conclusion, the findings among HIV-infected, pregnant women are similar to those reported for uninfected women in sub-Saharan Africa. However, effects of the famine season among undernourished, HIV-infected Malawian women are of concern. Strategies to optimise nutrition during pregnancy for these women appear warranted.



# Anthropometry in infants under 6 months in rural Kenya

Summary of research<sup>1</sup>

M. Mwangome, Kenya, 2011

Reliability study participants



It is currently estimated that worldwide 8.5 million infants under 6 months are wasted. In poor communities, low rates of exclusive breastfeeding and the introduction of mixed feeding before the age of 3 months expose infants <6 months to risks of microbial contamination and malnutrition. In Kenya, 9.7% infants below 6 months are wasted (weight-for-length z score (WFLz) < -2) and 11% are stunted (length-for-age (LFA) z score < -2).

The Government of Kenya has proposed a strategy in which Community Health Workers (CHWs) are trained to deliver community health services, including basic primary health care, growth monitoring (GM) and referral of critically ill patients to hospital. CHWs will be expected to undertake door-to-door anthropometric screening of children and provide basic nutrition education and counselling.

At rural health facilities, weight is commonly measured in infancy. However, weight-for-age (WFA) alone does not differentiate wasting from stunting and is typically accessible only to those attending mother and child health clinics (MCH). WFL is recommended for the diagnosis of acute malnutrition in this age group, but is rarely routinely assessed because length boards are not usually available and length measurement is potentially unreliable. Among children aged 6–59 months, the Mid Upper Arm Circumference (MUAC) may be used to diagnose severe acute malnutrition (SAM). MUAC is a better predictor of mortality than WFA and within this age range, is age-independent. In rural communities, MUAC could be a valuable tool for use by CHWs for early detection of acute malnutrition in infants. However, reliability of MUAC measurement in early infancy is unknown, and cut-off values to determine intervention thresholds have not been defined. To address the first of these questions, a recent study set out to determine the inter-observer variability and accuracy of MUAC and WFLz measurements taken by CHWs among infants under 6 months in rural Kenya.

The study was conducted from February 2008 through August 2009 in Kilifi District, a rural district on the Kenyan Coast. Kilifi is the second poorest district in Kenya with an estimated 67% of the people living in poverty. The study recruited three cadres of participant: (i) an expert in anthropometry with more than 30 years of experience of anthropometry training and conducting nutritional assessments in Kenya, (ii) health professionals (HPs) comprising nurses and public health officers in-charge of Mother and Child Health (MCH) clinics, and (iii) CHWs based at health centres throughout the district.

## Study methods

The research employed a cross-sectional repeatability design using the term 'reliability' in a statistical sense to mean the inter-observer variability. For applicability within the health system, the research team used measuring equipment normally in use in government facilities in Kenya, with an exception of the infantometer, which is usually not available. Weight was measured to the nearest 100 g using a 'hanging' scale costing 103 USD. The machine was quality controlled every morning using standard weighing stones certified by the Kenya Bureau of Standards. Length was taken using a professional infantometer calibrated to the nearest 1 mm and costing 443 USD. MUAC was measured on the left arm of the child using TALC insertion tape marked to the nearest 2 mm costing 0.25 GBP. All measures followed procedures indicated in the United Nations (1986) guidelines.

Sample sizes were calculated separately for infants older and younger than 90 days. 'Complete unreliability' was defined as an intra-class correlation (ICC) of <0.4 and estimated the number of infants required for 90% power to distinguish ICC values of 0.6, which were defined as minimum reliability, from 0.4. This gave a required sample size of 71 infants in each age group for three observers. To allow for possible dropout from the study, the aim was to recruit at least 75 infants for each age group. Sample size for accuracy was 15 infants for every 75 infants recruited.

The study was then undertaken in three stages. First, to establish intrinsic reliability, the expert anthropometrist measured weight, length and MUAC among infants visiting the MCH at Kilifi District Hospital. Measurements were repeated after each cohort of 10 children. First and second set of measurements were recorded on separate forms. At the second stage, a training manual was produced for training HPs and CHWs following guidelines from the United Nations 1986 on anthropometry. The expert and the first author trained six HPs on anthropometry, safety procedures when handling infants and quality control of the measuring equipment. After the training, the HPs were divided into two groups of three each and repeatedly measured weight, length and MUAC of 150 infants (75 infants above and 75 below 90 days old). Each child was measured once by each of the three HPs. For every 5th child, the expert took measurements to determine accuracy. Further training was given to address issues arising in the second stage to establish HPs as trainers for the CHWs.

At the third stage, 18 CHWs were recruited, three from each of six sites: a district hospital, a

peri-urban health centre, two rural health centres and two rural dispensaries. HPs conducted a 1-day practical training on anthropometry, safety procedures when handling infants and equipment quality control. This aimed to replicate the type of training that could be provided operationally. Then, each group of three CHWs independently measured MUAC, weight and length among 150 infants (75 under and 75 over 90 days old) at their health facilities. A single MUAC, weight and length measurement were taken once by each CHW on each infant. Measures were blinded from each other. At each facility, one HP took measures on every 5th infant to estimate accuracy.

## Key findings

Key findings of the study were that among CHWs, ICCs pooled across the six sites (924 infants) were 0.96 (95% CI 0.95–0.96) for MUAC and 0.71 (95% CI 0.68–0.74) for WFLz. MUAC measures by CHWs differed little from their trainers: the mean difference in MUAC was 0.65 mm (95% CI 0.023–1.07), with no significant difference in variance ( $P = 0.075$ ).

There are few published data on the accuracy of anthropometry in early infancy. None have used a systematic approach and included CHWs as used in this study. In this study, there was better concordance between CHWs and their trainers for MUAC than for WFLz.

In other studies, MUAC achieved high specificity (>95%) and varied sensitivity (48–58%) in identifying infants with severe malnutrition (WFLz < -3) and low-birth-weight (weight < 2500g). In such studies, however, there is a trade-off between specificity and sensitivity, and therefore reported levels of sensitivity and specificity should be interpreted within the study context and the cut-off used.

Absolute measures of MUAC, weight and length were more reliable than calculated z scores. Length was the least reliable when measured by HPs (pooled ICC was 0.82). Overall, WFLz was the least reliable anthropometric index (overall ICC was 0.71, and at one site, met the 'completely unreliable' criteria). The most likely explanation is that WFLz is very sensitive to changes in the absolute measurements, e.g. a 1cm change in length of a 6kg/65cm infant results in a 21% change in WFLz. Errors in calculating z scores were not studied.

<sup>1</sup> Mwangome, M et al (2012) Reliability and accuracy of anthropometry performed by community health workers among infants under 6 months in rural Kenya. *Tropical Medicine and International Health*. Doi:10.1111/j1365-3156.2012.02959.




# Micronutrient powders v iron-folic acid tablets in controlling anaemia in pregnancy

## Summary of research<sup>1</sup>

The major cause of anaemia in pregnancy is iron deficiency, which is preventable. It is estimated that 56% of pregnant women in developing countries and 18% of pregnant women in industrialised countries are anaemic. The prevalence of anaemia during pregnancy in South Asian countries is among the highest in the world. A study conducted in rural Bangladesh reported a 54% prevalence of anaemia among pregnant women during the second trimester. Similar high rates of anaemia have been reported among lower- and middle-class pregnant women in Dhaka. Although a number of national programmes have been implemented attempting to address this problem, continuing high rates of anaemia among pregnant women suggest that traditional strategies such as iron-folic acid (IFA) tablets are not effective. This limited effectiveness may be attributable to inadequate supply, low coverage, and/or poor adherence. In order to address poor adherence to standard iron drops in young children, the micronutrient powder 'Sprinkles', a single-serving sachet containing a blend of micronutrients in powder form, was developed. Powdered micronutrient supplements can be easily incorporated into foods prepared in the home. Several clinical trials have demonstrated the efficacy of micronutrient powders in lowering the burden of anaemia in children in the developing world. However, no study to date has examined the efficacy of this intervention against anaemia throughout pregnancy.

A recent cluster randomised trial, set out to determine whether home fortification with a micronutrient powder for pregnancy (MNP-P) is at least as efficacious as IFA tablets for improving haemoglobin concentration in pregnant women. The trial was carried out in the sub-district of Kaliganj in central Bangladesh. This is a densely populated rural area that relies primarily on agricultural labour. Participants were recruited from 42 community-based Antenatal Care Centres operated by BRAC (formerly known as the Bangladesh Rural Advancement Committee), a large non-governmental organisation founded in Bangladesh in 1972.

All pregnant women who received services at one of the Antenatal Care Centres and were between 14 and 22 weeks of gestation were asked to join the study. Gestational age was approximated by using the woman's recall of her last menstrual period. If the number of participants enrolled from one Antenatal Care Centre did not meet the sample size requirements, the study team returned to the centre the following month and repeated the recruitment process. For logistical reasons, the researchers limited the recruitment phase to the first five months of the study period, which started in October 2005 and ended in March 2006. Women did not meet the eligibility criteria if they were severely anaemic (haemoglobin < 70 g/L), had a haemoglobin concentration greater than 140 g/L, were at more than 22 weeks of gestation, or were already taking iron supplements prior to the start of the study. The primary reason for declining to participate in the study was unwillingness to provide a blood sample for haemoglobin assessment. A total of 779 pregnant women from 42 clusters were identified. Out of this population, 478 women met the eligibility criteria and were randomized, at the cluster level, to the MNP-P group (21 clusters, n = 243) or the IFA tablet group (21 clusters, n = 235). Each cluster consisted of approximately 300 households, and the number of women per cluster ranged from 3 to 26. The primary reasons for exclusion at baseline were gestational age greater than 22 weeks (15.8%), recent use of iron supplements (11.3%), pregnancy loss (4.4%), and planned move out of the study area (2.2%). Two women were excluded because they had severe anaemia (haemoglobin < 70 g/L), and 12 were excluded because they had haemoglobin levels above 140 g/L.



This study evaluated CHWs across a representative range of sites in a rural district in a realistic setting after a typical practical training. Such an arrangement is likely to be similar to proposed changes by the Government of Kenya's Ministry of Health when aiming to better identify infants in situ within their community at risk of malnutrition.

However, evaluation in the context of research may have resulted in a better than normal environment for measuring infants in that there was more time with fewer interruptions and greater supervision. This may limit the application of these findings to rapid assessment or a door-to-door visit scenario. Secondly, the measuring equipment was in good condition and regularly calibrated. This may not normally be the case in rural public health facilities in Kenya. Thirdly, owing to a delay in equipment availability, the expert anthropometrist was unable to take weight and length measurements in the same group of infants. It was therefore not possible to calculate and estimate expert's intra-observer variation of WFLz. Finally, the majority of the infants involved in this study were recruited from the routine GM clinics and not randomly selected within the community, thus they were relatively healthy.

The authors conclude that CHWs can be trained to take absolute MUAC, weight and length measurements accurately and reliably among infants age <6 months. However, the length-based z score indices, LFAz and WFLz, are the least reliable anthropometric measures. Further studies of the generalisability of these findings in other settings and to assess the relationship of MUAC with mortality and illness to establish appropriate cut-off values for MUAC use among infants under 6 months old are needed.

A single Antenatal Care Centre typically serves one village or population of approximately 300 households. Each Antenatal Care Centre was defined as a cluster, and each cluster was randomly allocated to receive either MNP-P (60 mg of elemental iron, 400 µg of folic acid, 30 mg of vitamin C, and 5 mg of zinc) or IFA tablets (60 mg of elemental iron and 400 µg of folic acid). The iron dose corresponded to recommendations for areas in which the prevalence of anaemia is above 40%, and the dose of folic acid administered was based on the amount of synthetic folic acid recommended for prevention of neural tube defects. Both interventions were administered daily, starting at the first study visit and lasting until 32 weeks of gestation. Those assigned to the MNP-P group were instructed to sprinkle the full contents of a package into any semi-solid or semi-liquid food when the food was at room temperature.

Changes in haemoglobin from baseline were compared across groups using a linear mixed-effects regression model. At enrolment, the overall prevalence of anaemia was 45% (n = 213/478). After the intervention period, the mean haemoglobin concentrations among women receiving the micronutrient powder were not inferior to those among women receiving tablets (109.5 ± 12.9 vs 112.0 ± 11.2 g/L; 95% CI, -0.757 to 5.716). Adherence to the micronutrient powder was lower than adherence to tablets (57.5 ± 22.5% vs 76.0 ± 13.7%; 95% CI, -22.39 to -12.94). However, in both groups, increased adherence was positively correlated with haemoglobin concentration.

Focus group discussions to explore the reasons for non-adherence found that non-adherent women in the MNP-P group expressed concern that adding Sprinkles to their daily food would worsen the nausea associated with pregnancy. However, a few women also mentioned that Sprinkles increased their appetite. Given that food was generally scarce, increased appetite was not a positive attribute of the intervention.

Overall, the findings suggest that despite lower adherence, the relative efficacy of MNP-P and IFA tablets was similar when they were started in the second trimester of pregnancy. However, the interpretation of results is limited to 'relative' comparisons, since the randomized design did not include a non-intervention group.

Given the limited number of studies on MNP use during pregnancy, it is also difficult to assess the effectiveness and feasibility of this approach in a programme setting. In fact, recently published World Health Organization (WHO) guidelines on the use of MNPs during pregnancy recommend against this intervention as an alternative to iron and folic acid supplements due to a lack of evidence on its potential benefits and harm. The guidelines also state, however, that current supplementation and mass food fortification approaches do not always work because of difficulties in implementation or reaching target populations. There has been growing interest in alternative strategies for providing micronutrients to pregnant women in low- and middle-income countries, and WHO has recommended that future research be conducted to evaluate the effectiveness of MNPs as one such strategy. Considering the findings from this study, the authors suggest that further research on factors related to MNP adherence that addresses culture-specific food preferences would be of particular benefit. It is possible that simply having a choice between tablets or MNP-P might improve overall adherence to iron and folic acid interventions among pregnant women.

<sup>1</sup> Choudhury et al (2012). Relative efficacy of micronutrient powders versus iron-folic acid tablets in controlling anaemia in women in the second trimester of pregnancy. *Food and Nutrition Bulletin*, vol. 33, no. 2, pp 142-149, 2012



# UNHCR feeding programme performance in Kenya and Tanzania

Summary of research<sup>1</sup>

Routine monitoring data are available from the many nutrition programmes operating in camps supported by UNHCR, typically growth monitoring programmes, under the Expanded Programme on Immunisation, MUAC<sup>2</sup> based household surveillance, Supplementary Feeding Programmes (SFPs) and community based therapeutic feeding programmes (TFPs). However, operational challenges and varied reporting structures across implementing agencies have limited the utility of this information for the assessment of changes in population health status or comparisons of trends across regions. In 2005, UNHCR launched a Health Information System (HIS) to enhance the quality and consistency of routine health information available in protracted refugee situations (see Box 1), becoming the first source of routine feeding programme data collected with standardized case definitions and reporting formats across refugee settings.

A recently published paper reviews UNHCR's HIS data to assess the coverage and effectiveness of selective feeding programmes implemented by partners in Kenya and Tanzania from January 2006 to May 2009. It examines the extent to which routinely collected HIS data can be used to inform nutrition programme strategies in post-emergency situations. Kenya and Tanzania were chosen as case studies because of their geographic proximity, similar restrictions on livelihood opportunities, distinct population trends, and the fact that together they account for more than half of the global refugee population living in camps reported in the UNHCR HIS.

Since the early 1990s, Kenya and Tanzania have hosted hundreds of thousands of refugees fleeing war and insecurity in neighbouring countries. In Kenya, the Dadaab and Kakuma camps currently host approximately 340,000 refugees from Somalia, Sudan, Ethiopia, and other countries. A mid-2006 survey in Kenya showed that despite widespread distribution of WFP rations (~2,100 kcal/day) since 2003,

global acute malnutrition rates remained well above internationally recognised emergency thresholds at 22.2% in the Dadaab Camps and 15.9% in Kakuma Camp. The nutritional status of refugees in these camps has improved significantly in the past few years. Recent surveys show that global acute malnutrition rates have fallen from their peak in 2006 to 5.6%–10.7% in Dadaab Camps and 9.2% in Kakuma Camp in 2010.

In Tanzania, refugees from Burundi, Rwanda and the Democratic Republic of Congo are housed in clusters of camps in far western Kigoma, Kasulu and Kibondo districts in the Kigoma Region and the Ngara District in the Kagera Region. As in Kenya, the Government of Tanzania prohibits refugees from seeking formal employment, travelling more than 4 km outside their camp, cultivating land outside the camp boundaries, trading in markets or grazing livestock. A nutrition survey in 2006 showed that despite these restrictions and limited food rations, the rate of global acute malnutrition was low, with a weighted prevalence rate of 3.1% across the three camps. A joint UNICEF, UNHCR, and WFP survey in late 2008 showed further improvements in the nutrition situation, with the prevalence of global acute malnutrition decreasing to 1.9% and with no severe acute malnutrition (SAM). The survey conducted in September 2010 showed that these improvements have been sustained, with 2% prevalence of global acute malnutrition.

Data on camp population, growth monitoring, and nutrition programmes were exported from the UNHCR HIS database. The data included camp-specific information about the month of reporting, total camp population, and population size by age group (less than 5 years of age, 5 years of age or older). Nutrition programme data included the number of children admitted to feeding programmes, the number remaining enrolled in the programme at the end of each month, mean length of stay, average weight gain in therapeutic programmes, and reason for discharge (recov-

ery, death, default, or referral). Information on nutrition programme admissions and enrolment was combined with population data to calculate admission rates and enrolment proportions where possible. Analysis was limited to children under five years who were admitted to supplementary or therapeutic feeding programmes for malnutrition.

## Results

### SFPs

There were a total of 39,899 new SFP admissions in Kenya and Tanzania between January 2006 and May 2009, accounting for approximately 63% of SFP admissions reported in the UNHCR HIS. Of these, 95% of admissions (n = 37,741) were in Kenya camps and only 5% (n = 2,158) were in Tanzania. Globally, readmissions, defined as moderately malnourished children enrolling in SFP within 1 month of successful discharge, account for 8.6% of all SFP admissions. In Kenya and Tanzania, the proportions of readmissions were lower at 5% and 2%, respectively.

Although monthly growth monitoring attendance was much higher in Tanzania (78%) than Kenya (42%), children in Kenya were 11.60 (95% CI, 10.61–12.68) times more likely to be admitted to SFPs and 9.77 (95% CI, 8.49–11.25) times more likely to be enrolled in SFPs than children in Tanzania. In Kenya, SFP performance consistently exceeded all UNHCR performance standards, with the exception of the average length of enrolment in SFPs, which ranged from 11 to 20 weeks (standard < 8 weeks). All Kenyan camps had recovery rates above 90% (standard >75%), mortality rates at 0.1% or below (standard <3%), and default rates below 8% (standard < 15%). All camps in Tanzania also met overall exit rate standards, with the exception of Kigoma Camps, where an average of 20% of cases were referred for further treatment, and Ngara Camps, where an average of 19% of exits were due to default and 1% to death.

Table 1 summarises SFP performance by country and camp. With the exception of length of enrolment, the HIS data showed improvements over time in all SFP performance indicators in Kenya camps. Between 2006 and 2009 in Kenya, the average recovery rate increased from 89% to 96% and the average default rate decreased from 7% to 2%. In Tanzania, the average recovery rate was lowest at 69% in 2007 (and 92% in 2009), and the proportion of exits due to default increased over time, with a default rate of 13% in 2008.

### TFPs

Between January 2006 and May 2008, there were a total of 4,347 new admissions of children under five years to TFPs in Kenya and Tanzania camps.

Mélody Tondeur and Sarah Style, Kenya, UNHCR, 2011



Settlements of new arrivals in the outskirts of Dadaab

<sup>1</sup> Tappis, H et al (2012). United Nations High Commissioner for Refugees feeding programme performance in Kenya and Tanzania: A retrospective analysis of routine health information systems. Food and Nutrition Bulletin, vol. 33, no. 2 ©2012, The United Nations University

<sup>2</sup> Mid Upper Arm Circumference



Admissions in these two countries accounted for approximately 30% of TFP admissions reported in all countries covered by the UNHCR HIS during this time period. Of these, 79% (n = 3,417) were for acute wasting and 21% (n = 930) were for oedema (OR, 3.83; 95% CI, 3.55–4.12). In general TFP admissions and enrolment rates in both Kenya and Tanzania decreased over time, and higher admission and enrolment rates were observed in Kenya than in Tanzania. Acute wasting admissions were substantially higher in Kenya (n = 3,014, 70% of all admissions across the two countries) than in Tanzania (n = 403, 9% of all admissions). The same was true for oedema, with 690 admissions (16% of all admissions) and 240 admissions (5% of all admissions) reported in Kenya and Tanzania, respectively.

TFP performance met UNHCR standards for both acute wasting and oedema cases at the country level, with the exception of mean length of stay for acute wasting cases in Tanzania, which was 34 days (standard < 30 days). As Table 2 shows, the main factor limiting the recovery rate in TFPs was referral. In Kenya, Hagadera was the only camp with average recovery rates below the standard of 75%; referrals accounted for a high proportion of both acute wasting and oedema exits during 2007 in Kenya. In Tanzania, below-average recovery rates in Kigoma Camps were associated with an increasing proportion of acute wasting referrals over time and a high proportion of oedema deaths in 2007 (4 of 23 cases).

In Kenya camps, the average TFP enrolment period ranged from 22 to 27 days for acute wasting and from 23 to 27 days for oedema (standard < 30 days). In Tanzania, the average enrolment period was longer, ranging from 25 to 43 days for acute wasting and from 21 to 34 days for oedema. Most camps met the > 8 g/kg/day standard or average weight gain, and average daily weight gain was substantially greater in Kenya than in Tanzania for children with both acute wasting and oedema. Camps that did not meet UNHCR standards included the Ngara Camps in Tanzania (average weight gain of 5 g/kg/day for children with acute wasting), Dagahaley Camp in Kenya, and the Kibondo and Kigoma Camps in Tanzania, all which reported average weight gains of 7g/kg/day for children with oedema.

**Discussion**

During the 3 and a half year period that was analysed using HIS data, close to 45,000 malnourished refugee children under five years were treated in UNHCR-supported selective feeding programs in Kenya and Tanzania. With average recovery rates of 77.1% and 84.6% in the therapeutic and supplementary feeding programmes, respectively, mortality rates of less than 1%, and an average readmission rate below 5%, the HIS data suggest that selective feeding programmes had a beneficial effect on enrolled children. Even the camps with higher SFP enrolment rates had very low TFP enrolment rates (≤ 0.5%), which suggests that growth screening and SFP objectives are being met and that SAM is relatively well controlled in both the Kenya and the Tanzania camps. Any comparison and analysis of trends, however, must take into account the myriad of contextual factors that influence nutritional status, feeding programme size, and coverage and outcomes of targeted feeding programmes.

**Limitations**

Conclusions are constrained by several factors. One challenge is that HIS data on the SFP programme includes local populations that are enrolled in feeding programmes but are not represented in denominators; thus SFP coverage among refugee populations may be overestimated. Average weight gain and duration of enrolment for discharged cases are the strongest indicators of TFP performance. However, these measures are also the most complicated to accurately measure and are prone to omissions and reporting errors, which decrease their reliability as performance measures. In addition, defaulters limited recovery rates in both Kenya and Tanzania. However, there is no mechanism in the HIS for tracking the reason for default or outcomes of children who default. Consequently, it is difficult to determine whether programme strategies should prioritize efforts to prevent

defaulting by increasing accessibility, addressing opportunity costs, or improving reporting.

**Conclusions**

Inferences from the comparison of HIS admissions and enrolment data suggest that increasing admission and enrolment in SFPs was successful in preventing cases of severe malnutrition in the Dadaab Camps. Modifications to routine data collection and reporting, such as inclusion of the proportion of moderate and severe wasting cases detected at growth monitoring, follow-up on defaulter and referral cases, and additional information on Community-based Management of Acute Malnutrition (CMAM), could also shed more light on

areas for improved programme quality in both the Tanzania and the Kenya camps. In addition, linking nutritional surveillance data from the HIS with other relevant information sources (e.g., nutrition surveys, household food economy studies, local market surveys, and joint UNHCR/WFP assessment reports) would allow users to triangulate the results and generate a more comprehensive understanding of the predictors of increased admission and enrolment needs within selective feeding programmes. UNHCR has made the first step toward achieving this aim through the recent launch of an online version of the HIS (called ‘webHIS’ <http://his.unhcr.org>). This integrated platform hosts public health data from multiple sources.

**Table 1: SFP performance, January 2006 – May 2009**

SFP indicator	No. of new admissions	Average length of enrollment (wk)	Discharge category – mean % (range)			
			Recovered	Death	Default	Referral
<b>Kenya camps</b>						
Dagahaley	10,178	13	94 (91, 99)	0 (0, 0)	5 (1, 7)	1 (0, 3)
Hagadera	16,782	12	93 (92, 97)	0 (0, 0)	3 (1, 6)	2 (2, 3)
Ifo	8,916	11	92 (86, 98)	0 (0, 0)	4 (1, 8)	3 (0, 6)
Kakuma	1,865	20	89 (83, 96)	0 (0, 0)	8 (2, 12)	3 (2, 12)
Kenya total	37,741	14	92 (89, 96)	0 (0, 0)	5 (2, 7)	2 (2, 7)
<b>Tanzania camps</b>						
Kasulu camps	519	19	78 (64, 94)	0 (0, 0)	3 (0, 5)	18 (6, 30)
Kibondo camps	413	11	82 (79, 98)	0 (0, 2)	3 (0, 4)	15 (2, 18)
Kigoma camps	399	14	68 (48, 98)	0 (0, 0)	12 (0, 21)	20 (2, 38)
Ngara camps	827	11	77 (66, 94)	1 (0, 2)	19 (2, 34)	4 (0, 5)
Tanzania total	2,158	14	76 (69, 92)	0 (0, 1)	9 (0, 13)	14 (7, 17)

SFP, supplementary feeding programme

**Table 2: TFP performance, January 2006–May 2008**

Location	No. of new SAM admissions	Average length of enrollment (days)	Average weight gain (g/kg/day)	Discharge category – mean % (range)			
				Recovered	Death	Default	Referral
<b>Acute wasting admissions</b>							
<b>Kenya camps</b>							
Dagahaley	747	22	12	80 (66, 90)	8 (8, 9)	4 (2, 5)	8 (0, 20)
Hagadera	884	24	11	67 (38, 98)	5 (2, 7)	3 (0, 7)	24 (0, 57)
Ifo	999	22	15	77 (57, 92)	6 (0, 10)	4 (2, 7)	13 (1, 31)
Kakuma	384	27	11	87 (84, 90)	3 (2, 4)	10 (7, 12)	1 (7, 12)
Kenya total	3,014	24	12	78 (63, 93)	6 (3, 6)	5 (3, 7)	11 (3, 7)
<b>Tanzania camps</b>							
Kasulu camps	79	25	11	84 (80, 90)	2 (0, 8)	8 (0, 15)	6 (3, 10)
Kibondo camps	102	43	14	87 (85, 100)	5 (0, 7)	0 (0, 0)	8 (0, 10)
Kigoma camps	122	29	10	50 (23, 60)	9 (4, 15)	11 (5, 22)	31 (23, 45)
Ngara camps	100	38	5	79 (74, 95)	1 (0, 2)	20 (5, 50)	0 (0, 0)
Tanzania total	403	34	10	75 (65, 81)	4 (4, 5)	10 (5, 18)	11 (10, 13)
<b>Oedema admissions</b>							
<b>Kenya camps</b>							
Dagahaley	215	24	7	79 (68, 89)	4 (2, 8)	6 (5, 8)	11 (0, 25)
Hagadera	302	23	10	57 (27, 79)	5 (0, 7)	7 (0, 14)	31 (1, 63)
Ifo	106	27	16	86 (67, 97)	10 (3, 33)	3 (0, 5)	1 (0, 2)
Kakuma	67	23	9	92 (88, 95)	1 (0, 1)	1 (0, 1)	7 (3, 13)
Kenya total	690	24	11	78 (70, 87)	5 (5, 14)	4 (2, 6)	2 (1, 25)
<b>Tanzania camps</b>							
Kasulu camps	56	21	9	80 (75, 84)	6 (0, 14)	0 (0, 0)	14 (2, 25)
Kibondo camps	24	31	7	79 (50, 100)	15 (0, 25)	6 (0, 25)	0 (0, 0)
Kigoma camps	111	32	6	60 (36, 66)	7 (0, 17)	9 (7, 13)	23 (4, 51)
Ngara camps	49	30	8	86 (75, 94)	7 (0, 17)	7 (0, 25)	0 (0, 0)
Tanzania total	240	28	7	77 (70, 83)	9 (1, 15)	6 (3, 9)	9 (6, 19)

TFP: Therapeutic Feeding Programme, SAM: severe acute malnutrition



# Scaling up ORS and zinc treatment for diarrhoea reduces mortality

Summary of editorial<sup>1</sup>

With most countries still not on track to achieve millennium development goal 4 - that of reducing child mortality by two thirds from 1990-2015, a recent editorial in the British Medical Journal (BMJ) highlights the need to tackle the treatment of diarrhoea. The authors argue that investment in the treatment of diarrhoea with oral rehydration salts (ORS) plus zinc is one of the best opportunities to achieve such rapid impact on mortality. Acute diarrhoea is the second biggest cause of death in children worldwide causing 1.2 million deaths each year. Treatment with ORS and zinc could rapidly and cost efficiently avert most of the deaths not prevented by vaccines.

A systematic review estimated that universal coverage with ORS would reduce diarrhoea related deaths by 94% while another review estimated that, in zinc deficient populations, zinc treatment reduces diarrhoea related deaths by 23%. Yet only about 30% of children with diarrhoea in high burden countries receive ORS, and less than 1% receives ORS plus zinc. The use of ORS has stagnated globally since 1995.

Scaling up the provision of zinc and ORS could rapidly reduce child mortality for four reasons:

- Although it has been almost eight years since the WHO recommended combination treatment with zinc and ORS, few countries have implemented basic interventions to increase the currently low use of adjunctive zinc. Such interventions would include marketing zinc to caregivers and distributing it in large volumes through both public and private facilities.
- Children with diarrhoea can be reached and given appropriate treatments such as antibiotics and anti-diarrhoeal agents. Simply switching the treatments children receive, which is less challenging than trying to change caregivers treatment seeking behaviour, could therefore drive substantial increases in ORS and zinc coverage.
- In contrast to treatments for malaria or pneumonia, effective treatment of diarrhoea does not need to be carefully targeted to selected children for whom a definitive diagnosis is made. A strategy of 'flooding the market' with ORS and zinc - distributing them through all outlets where care givers seek treatment - could be pursued safely.
- A full course of zinc and ORS treatment costs less than \$0.50, and the marketing, training and distribution necessary to drive product uptake could also be implemented at comparatively modest cost. Moreover, public funding for procurement of zinc and ORS in many countries would be further moderated by the fact that most treatment for diarrhoea is delivered through the private sector and paid for out of pocket.

The authors ask the question - what will it take to scale up the delivery of ORS and zinc for the treatment of diarrhoea worldwide? They suggest that an essential first step will be to focus attention on the problem. For the first time, the ten countries with the highest burden of diarrhoea have developed ambitious plans to scale up coverage of effective treatments of diarrhoea and pneumonia.

The authors conclude that dedicated resources and practical operational support are now needed to translate those countries plans into success. ORS and zinc treatment for diarrhoea should appeal to any donor seeking a high return on investment and the ability to have a rapid effect on child mortality. Contributions from early donors could be leveraged with other private and public contributions to realise a dramatic reduction in child deaths from diarrhoea and a further leap towards achieving the millennium development goals.

<sup>1</sup> Sabot.O et al (2012). Scaling up oral rehydration salts and zinc for the treatment of diarrhoea is cheap and effective and could accelerate reductions in child mortality. BMJ 2012; 344doi:10.1136/BMJ.e940. Published February 2012

# Treatment of undernutrition in urban Brazil

Summary of research<sup>1</sup>

In Brazil, 6% of children aged less than 5 years suffer from height-for-age (HAZ) deficit, while the prevalence of this condition is higher (8.2%) among the poorest sector of the population. Moreover, the prevalence of HAZ and weight-for-age (WAZ) deficits among children in the 5-9 years age range is 6.8% and 4.1% respectively. In addition, population growth in the last three decades has been intense leading to massive urbanisation, competition for resources and urban poverty. This has led to increased violence, undernutrition and family breakdown. In order to tackle this problem, the Federal University of Sao Paulo created the Centre of Nutrition Recovery and Education (CREN) in 1994 with the objectives of developing: i) methodologies for the nutritional recovery of children with respect to weight and, in particular, stature and ii) approaches for direct intervention in the complex socio-economic and familial situation of impoverished urban areas.

More than 1000 undernourished children are assisted annually by CREN in a day hospital (n=50), in an out-patient clinic (n=700) or directly in the community (n=300) depending on the degree of undernutrition and accessibility of the centre. Children accepted into the day-hospital regime originate either from impoverished communities or from public health units and comprise those who have been diagnosed with primary undernutrition and who cannot be rehabilitated in out-patient clinics or by home visits. The routine weekday schedule at CREN comprises five daily meals together with recreational and educational activities (including hygiene practices), sleeping time after lunch and periodic medical examinations. Sick children are treated as appropriate. Children receive protein-rich food as well as vitamin supplements and prophylactic doses of iron until they are 24 months old. Children are discharged and redirected to day nurseries or pre-schools after effective recovery from undernutrition, i.e. when the HAZ and WAZ parameters are normalised (z-score >1). Weight-for-height z scores and mid upper arm circumference (MUAC) are not used.

A recently published study by researchers from CREN set out to build a life table and determine the factors related to the time of treatment of undernourished children at a nutritional rehabilitation centre in Sao Paulo. The subjects for the study were undernourished children (n=228) from the

southern slums of Sao Paulo who had received treatment at CREN under a day hospital regime between the years of 1994 and 2009. The average age of the children at admission was 24.45 months.

Nutritional status was assessed from WAZ, HAZ and Body Mass Index (BMI)-for-age z-scores, while neuro-psycho motor development was classified according to the milestones of childhood development. Life tables, Kaplan-Meier survival curves and Cox multiple regression models were employed in data analysis. The Kaplan-Meier curves of survival analysis showed statistically significant differences in the periods of treatment at CREN between children presenting different degrees of neuro-psycho motor development (log-rank = 6.621; P = 0.037). Estimates based on multivariate Cox model revealed that children aged ≥ 24 months at the time of admission exhibited a lower probability of nutritional rehabilitation (hazard ratio (HR) = 0.49, P = 0.046) at the end of the period compared with infants aged up to 12 months. In spite of this, it was observed that increases in HAZ were greater than in WAZ. The positive effects were observed even in children aged ≥24 months at the time of admission, although the magnitude of such recovery was inferior to that shown by younger individuals. Children presenting slow development were better rehabilitated in comparison with those exhibiting adequate evolution (HR = 4.48; P = 0.023). The authors believe that the positive results obtained with children presenting with delayed neuro-psycho motor development are associated with greater severity of their nutritional condition, as well as their lower age at admission compared with the other group. No significant effects of sex, degree of undernutrition or birth weight on the probability of nutritional rehabilitation were found.

The authors concluded that age and neuro-psycho motor developmental status at the time of admission to CREN are critical factors in determining the duration of treatment. These findings demonstrate the importance of early nutritional recovery and indicate that the treatment should preferentially start before the age of 24 months. Linear catch-up has also been achieved for older children at CREN, but at a lower speed and after an extended period of treatment.

<sup>1</sup> Fernandes M et al (2011). A 15 year study on the treatment of undernourished children at a nutrition rehabilitation centre (CREN), Brazil. Public Health Nutrition: 15 (6), pp 1108-1116



# Agricultural interventions to improve nutritional status of children

Summary of review<sup>1</sup>

Angelo Tomedi, Kenya, 2010

One of the researchers (Rebecca Ashton) weighs a child

## Feasibility and effectiveness of preventing child malnutrition with local foods in Kenya

### Summary of research<sup>1</sup>

The findings of a study to establish the operational feasibility and effectiveness of using locally available foods to prevent malnutrition and improve child growth in Kenyan children have recently been published. The study took place in rural villages in the arid lands of eastern Kenya, which have a high prevalence of child malnutrition as identified by a survey conducted in March 2009. The study sites were in Yatta District of Eastern Province, Kenya.

The diet in the area is maize-based and children are commonly fed a porridge made from maize flour with a low energy density so that the growth of young children falters as early as 3-4 months of age. Animal-source foods are rarely fed to children. One of the reasons for carrying out the study was recognition that aid programmes using commercially prepared products are not sustainable and that distribution of local foods combined with an education programme could potentially lead to improved local production and result in better complementary feeding.

The study employed a quasi-experimental design with an intervention group of children in all villages in one region and a non-intervention group of children in all villages in an adjacent region. Both sub-locations are governed by the same local chief and have community health workers who participate in the screening of the households with children under five years of age for acute malnutrition. All children who lived in the two sub-locations were eligible to participate if they were 6-20 months of age at the onset of the study and had a weight-for-height z score (WHZ)  $\geq -2$ . Children with WHZ  $< -2$  were enrolled into a community-based therapeutic feeding programme and were excluded from the study. The intervention was the distribution of a monthly food ration for the index child, a separate family ration, and group education on appropriate complementary feeding and hygiene.

Children in the intervention and non-intervention groups had similar baseline anthropometric measures. The caregivers in

the intervention group confirmed that the intended amounts of food supplements were received and child nutrient intake improved. During the 7-month intervention period there were significant group differences in pre-post z-score changes between the intervention and non-intervention groups for weight-for-age (0.82,  $P < 0.001$ ) and WHZ (1.19,  $P < 0.001$ ), but not for height-for-age (0% v. 8.9%,  $P = 0.0002$ ) and underweight (6.3% v. 23.0%,  $P < 0.0001$ ). Infectious morbidity was similar in both groups.

The likely explanation for the substantial decline in height-for-age Z-score in the intervention group as well as the non-intervention group was that the intervention period was too short to have an impact. A contributing factor may have been the age of the children when the intervention started. Although the study was planned with the intent to intervene as early as possible after complementary foods are introduced, the mean age at study entry was 14 months in the intervention group and the prevalence of growth stunting was already 27%. As anticipated, food was being shared with other family members, mostly other children.

However, intra-household sharing of food was taken into consideration in the intervention design which allowed for an extra 920 KJ/d per study child. Therefore, despite the leakage of the supplements, the index child received a sufficient amount of the food to significantly improve the nutrient intake and prevent the development of wasting.

The findings suggest that the distribution of locally available foods combined with brief group nutrition education sessions is operationally feasible and improves child weight gain and decreases acute malnutrition in Kenyan children. However, it remains to be seen whether such an approach has greater potential for sustainability through increasing production and availability of local foods in the longer-term.

<sup>1</sup> Tomedi.A (2012). Feasibility and effectiveness of supplementation with locally available foods in prevention of child malnutrition in Kenya. *Public Health Nutrition*: 15 (4), pp 749-756

A summary of a recent systematic review on the effectiveness of agricultural interventions that aim to improve nutritional status of children has recently been published. In order to be included in the review, studies had to investigate agricultural interventions with the explicit goal of improving the nutritional status of children. Interventions included were bio-fortification, home-gardening, aquaculture, small scale fisheries, poultry development, animal husbandry and dairy development. The review only included studies from the published and unpublished literature that were produced after 1990, were written in English, were conducted in a middle or low income country, reported an effect on at least one of the selected outcome indicators, and used a credible counterfactual method.

Twenty three studies were selected for the review. The reviewers investigated the effects along all the main steps of the causal chain running from the agricultural intervention to the final goal of reducing under-nutrition, specifically participation in the programme by poor people, household income, composition of the diet, iron and vitamin A intakes, and prevalence of stunting, wasting and underweight.

The studies reported no information on participation rates or characteristics of programme participants. The interventions reviewed had a positive effect on production and consumption of the agricultural goods promoted, but reviewers found no evidence of a change in total household income and little evidence of a change in the overall diet of poor people. No evidence was found of an effect on iron intake but there was some evidence of a positive effect on the absorption of vitamin A. Very little evidence existed of an effect on the prevalence of undernutrition. Of eight studies reporting undernutrition rates, only one found a statistically significant effect on prevalence of stunting, whereas three studies found a positive effect on prevalence of underweight and two found a positive effect on wasting.

Many of the studies reviewed had methodological weaknesses. Post hoc power calculations showed that most studies were unlikely to find an effect on undernutrition rates if present, because of the small sample sizes used. Furthermore, factors such as health environment and cultural practices may have affected the impact of the agricultural interventions reviewed independently of their efficacy.

<sup>1</sup> Masset E et al (2012). Effectiveness of agricultural interventions that aim to improve nutritional status of children: systematic review. *BMJ* February 2012, volume 433, pp 16



# Nutritional support services and HIV in sub-Saharan African countries

## Summary of research<sup>1</sup>

On the basis of the latest WHO criterion for HIV treatment initiation (CD4 cell count  $\leq 350$  cells/mm<sup>3</sup>), anti-retroviral therapy (ART) was accessed by an estimated 37% of sub-Saharan Africans in need of ART by the end of 2009. A significant proportion of people living with HIV/AIDS in the region are simultaneously affected by nutritional deficiencies. Cross-national population-based data suggest that the prevalence of mild and moderate malnutrition among adults living with HIV/AIDS is 15.4% and 10.3% respectively, in sub-Saharan Africa, and is also elevated among young children living in AIDS-affected households. The disproportionate burden of HIV/AIDS and nutritional deficiencies in sub-Saharan Africa is of particular concern as each condition may perpetuate and aggravate the severity of the other.

In order to mitigate the adverse effects of food insecurity on HIV outcomes, international organisations such as the WHO, the Joint United Nations Programme on HIV/AIDS, the World Food Programme (WFP) and major HIV initiatives such as the US President's Emergency Plan for AIDS Relief (PEPFAR) recommend the integration of nutritional support services, specifically nutrition assessment, education and counselling, into HIV/AIDS treatment and care programmes. Accordingly, PEPFAR have allocated \$US130 million to support the integration of HIV and nutritional support services. Since 2006, PEPFAR implementation guidelines have recommended the provision of nutritional evaluation and food support to all orphans and vulnerable children, to HIV-positive pregnant and lactating women and to all adults receiving ART with clinically defined malnutrition. However, little is known about the extent to which nutritional support services are available in HIV care and treatment programmes across sub-Saharan Africa.

A study conducted in 2008 (but only published recently) set out to examine the availability of nutritional support services in HIV care and treatment sites across sub-Saharan Africa. The study conducted a cross-sectional survey of sites providing ART in nine sub-Saharan African countries. Outcomes included availability of: (i) nutritional counselling, (ii) micronutrient supplementation, (iii) treatment for severe malnutrition and (iv) food rations. Associations with health system indicators were explored using bivariate and multivariate methods.

A total of 336 HIV care and treatment sites, serving 467,175 enrolled patients, were surveyed. Of these, 303 sites offered some form of nutritional support service. Nutritional counselling, micronutrient supplementation, treatment for severe acute malnutrition (SAM) and food rations were available at 98%, 64%, 36% and 31% of sites respectively. In multivariate analysis, secondary or tertiary care sites were more likely to offer nutritional counselling (adjusted OR (AOR): 2.2, 95% CI 1.1, 4.5). Rural sites (AOR: 2.3, 95% CI 1.4, 3.8) had increased odds of micronutrient supplementation availability. Sites providing ART for >2 years had higher odds of availability of treatment for SAM (AOR: 2.4, 95% CI 1.4, 4.1). Sites providing ART for >2 years (AOR: 1.6, 95% CI 1.3, 1.9) and rural sites (AOR: 2.4, 95% CI 1.4, 4.4) had greater odds of food ration availability.

The study authors made a number of observations about the results. Although 90% of sites had at least one form of nutritional service, the type of nutritional support service reported to be available varied substantially, including by country, geographical context (urban/rural) and site-level characteristics (type of site, age of programme, reported presence of a nutritionist on staff).

They also observed the encouraging fact that nutritional counselling to adults and to pregnant and lactating mothers was reported to be available at 95% and 91% of sites, respectively. Nutritional counselling is considered to be a cornerstone of HIV treatment support, recommended by multiple international guidelines. It is also important for supporting HIV-affected households. Studies in sub-Saharan Africa have found that HIV-exposed but uninfected children have poorer growth compared with HIV-uninfected children, possibly because of reduced breastfeeding practices by HIV-infected mothers.

Although some type of micronutrient supplementation was reported to be available at 64% of sites, this mostly included vitamin A and iron supplementation. The fact that multivitamin and mineral supplementation was reported to be available at only 25% of HIV care and treatment sites suggests that there is room for improvement. Studies have found that many people living with HIV/AIDS suffer various micronutrient deficiencies and have increased micronutrient needs. However, evidence of the effectiveness of micronutrient supplementation on HIV-infected adults and children remains limited, and findings have been varied.

Food rations were reported to be available at 31% of HIV care and treatment sites. Studies have noted that provision of food rations may be associated with improved medication adherence and retention in HIV care and treatment in sub-Saharan Africa, which is both a major and persistent challenge of scale-up in the region.

The fact that treatment for SAM is more likely to be available at sites that had been providing ART for more than 2 years may reflect the increased logistic capacity of longer established sites. The study also found that availability of treatment for SAM has expanded significantly over a short period which suggests that ART treatment and care sites may be distributing Ready to Use Therapeutic Foods (RUTF). This is promising given that RUTF use has been associated with rapid weight gain, improvements in physical activity and increased uptake of voluntary counselling and testing (VCT) and ART services among HIV-positive individuals with SAM.

The authors acknowledge that a major limitation of the study is that information was only obtained on availability of different types of service and not on the access, quality, comprehensiveness or coverage of the indicated services at the sites. They conclude that further efforts are therefore urgently needed to determine uptake, quality and effectiveness of these services and their impact on programme outcomes such as adherence to ART, retention in care and survival.

<sup>1</sup> Anema.A (2011). Availability of nutritional support services in HIV care and treatment sites in sub-Saharan African countries. *Public Health Nutrition*: 15 (5), 938-947

# The state of the humanitarian system

Summary of report<sup>1</sup>

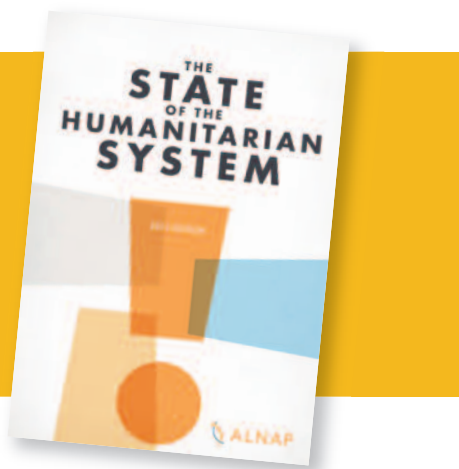
A recent report by ALNAP presents a system-level mapping and analysis of the performance of international humanitarian assistance between 2009 and 2011 building on an earlier pilot report published covering 2007 and 2008. The method for the mapping involved a number of components:

- An evaluation synthesis analysing the findings from recent analytical literature
- A series of interviews with key informants among humanitarian practitioners and policy-makers
- Field studies in Kenya and South Sudan
- A compilation of descriptive statistics, mapping the system's organisational components
- Analysis of humanitarian financial flows
- A series of global surveys on humanitarian performance indicators that solicited views of humanitarian actors and stakeholders across a range of field settings
- A review of data on affected populations to estimate global humanitarian need.

There are now some 4,400 non-governmental organisations (NGOs) worldwide undertaking humanitarian actions on an ongoing basis. Yet the system is still dominated in terms of operational presence and resource share by the small group of United Nations (UN) humanitarian agencies, the International Movement of the Red Cross and Red Crescent (ICRC) and five international 'mega' NGOs whose combined humanitarian expenditure in 2010 exceeded 2.7 billion dollars. The population of humanitarian workers continued to grow in the past two years but not as fast as previously – combined growth rate of 4% in 2009-10. In 2010 there were an estimated 274,000 humanitarian workers worldwide. Controlling for the surge in funds for Haiti in 2010 and adjusting for inflation, the long-term upward trend in humanitarian funding continued at 1% on average for 2009-2010.

Although humanitarian funding has shown a ten year rising trend, the majority of actors surveyed perceived funding in their settings to be insufficient, especially for the sectors of protection and early recovery. On average, funding coverage against needs (as stated in





appeals) stayed effectively static in 2009-10 compared to 2007-8, rising to 54% from 53%, with unequal growth across sectors. Most funding continues to go to a small number of protracted crises: Sudan, Pakistan, Ethiopia, Somalia, Democratic Republic of the Congo, Afghanistan and the occupied Palestinian Territories, and to high-profile natural disasters, such as Haiti. The systems poor showing in coverage and sufficiency is largely a consequence of financial, human and material resources not growing fast enough to keep pace with rising needs. The growth in needs is due to a combination of factors including increases in climate-related natural disasters, agency efforts to account for the true total of affected populations, and appeals for the humanitarian system to take on more activities in recovery, preparedness and development.

Most survey respondents from the international system saw a moderate improvement in the quality of needs assessments in the past two years. Where operations were found to be less relevant, reviews cited the inability to meet the full spectrum of need and a weak understanding of local contexts as key reasons. Surveys clearly found that humanitarian organisations had failed to consult with recipients in their setting or to use their input in programming. This deficit could be addressed in the near future by technical advances in methods of needs assessment. Humanitarian organisations are increasingly focused on more comprehensive inclusive and participatory needs assessments, and this reporting period saw a serious drive from the centre of the humanitarian system in this regard. Examples include the Inter Agency Standing Committee (IASC)'s Needs Assessment Taskforce (NATF), resulting in a new set of tools.

Most interventions were found to be effective or partially effective in terms of achievement against projected goals or international standards, the avoidance of negative outcomes and/or the receipt of positive feedback from aid recipients. Where overall effectiveness has been questioned, the key reasons were time delays and poorly defined goals. Each major emergency during the reporting period had a mixed review in terms of effectiveness. In particular, the response in the Horn of Africa was found to be abjectly slow at a systemic level, with significant disconnects between early warning systems and response, and between technical assessments and decision-makers.

The key elements of humanitarian reform effectively came of age during this reporting period, as the cluster system, the Central

Emergency Response Fund (CERF) and country-level pooled funding all underwent five-year evaluations. Each evaluation revealed that these instruments have become accepted as the new and generally improved means of operation. The lynchpin role of the Humanitarian/Resident Coordinator (HC/RC) continues to be a focus of attention. Questions remain about skills prioritisation and merit-based selection. Survey responses suggest the somewhat more nuanced finding that the greatest dissatisfaction within the system is with the lack of overall coordination at country level, rather than with the individual RC/HC. However, both aspects are found to be wanting by different actors in the system.

Most of the aid recipients surveyed felt that the foremost way in which humanitarian organisations could improve would be to "be faster to start delivering aid". At global level, the CERF gets high marks for timeliness in funding disbursements, but the timeliness of donor contributions overall declined between 2007-8 and 2009-10. Response rosters have improved the capacity of agencies in operations and coordination to fill key posts in timely fashion. However, high staff turnover and the ongoing challenge for humanitarian agencies in preparing staff to understand the political and cultural context, often at short notice, greatly undermine success in this area.

The issue of monitoring, identified as a key weakness in the pilot study, has still received little attention and states are still notably absent from evaluating their own responses or participating in joint evaluations with counterparts.

A significant rise in capacity of National Disaster Management Authorities has reinforced the system's engagement with governments of affected states and heightened recognition of the need to support their priorities more effectively in natural disasters. However, much practical work remains to be done to help strengthen host-country coordination structures and response capacities. The relationship between donors, non-government actors and recipient states can often be strained. For instance, the focus of some governments on sovereignty and self-reliance in the face of disasters has seen increasing refusals to issue the 'standard emergency' appeals that have traditionally triggered the international system's response. For their part, host government representatives are frustrated by the 'artificial' division between relief and development aid in the international aid architecture.

Despite the increasing importance of local partnerships in highly insecure settings, there remains an underinvestment in the capacities of local operational partners. Interviews and evaluations noted that national organisations are often working at or beyond their maximum operational capacity and find the additional pressure to meet a variety of international standards challenging, if not impossible, given available resources and time. Yet local capacity-building remains one of the hardest areas to raise funds for in non-emergency periods. While there are increased opportunities for local organisations to apply for pooled funding, there is very little bilateral funding being directed towards them.

Initiatives by DAC and its members, such as Internews, Frontline SMS, BBC Media Action

and others, have greatly increased engagement with the views of affected populations, as well as providing information as a vital form of aid in emergencies.

Clusters and country-level pooled funds are credited with bringing larger volumes of funding and contributing to stronger coordination, but at times can sacrifice speed for inclusiveness. Some major donors, facing budget pressures, became increasingly concerned with cost efficiency, or 'value for money'. Challenges remain, however, in clarifying the concept and making meaningful comparisons between contexts.

Key innovations in humanitarian action including use of cash and mobile communications technology, reached a transformative scale during this period. The subject of innovation itself became a major area for action in the system, with new funds and mechanisms designed to study and support innovation in humanitarian programming.

The extent to which actors converge around shared principles and goals seems to have weakened. Many humanitarian organisations appear to have willingly compromised a principled approach in their own conduct through close alignment with political and military activities and actors. The internal coherence of the humanitarian system has increasingly been tested, as a gulf widens between strict 'traditionalist' humanitarian actors such as ICRC and Médecins Sans Frontières (MSF), and the rest of the system which is populated by multi-mandated organisations.

In cyclical and slow-onset disasters, the long-acknowledged disconnect between development and humanitarian programming has failed populations at risk. The concept of resilience may offer a basis for increasing coherence.

Major recommendations in the report include the following:

- i) With the rise of the resilience agenda, it is critical that new financing instruments are considered to provide the long-term, flexible financing that these broader non-relief interventions require.
- ii) There is a need to deepen investments in contextual analysis and to engage aid recipients and local organisations more meaningfully in determining needs and programme design.
- iii) Increased efforts must be made to collect and appropriate use data disaggregated by sex and age.
- iv) To increase aid effectiveness, there is a need for more effective humanitarian leadership in crisis countries, preparedness and surge capacity for more rapid response as well as investment in monitoring and the need for greater engagement in evaluations on the part of host states.
- v) A focus on documenting good practice or achievements in collective, coordinated, principled approaches in crisis contexts would be valuable and would serve to support much-needed learning on the effective operationalisation of humanitarian principles.

<sup>1</sup> ALNAP (2012). The State of the Humanitarian System. ODI, London, July 2012. For access to the report as well as video footage of the key report messages and the launch of the report, visit: <http://www.alnap.org/ourwork/current/sohs.aspx>



# Concerns on Global HIV/AIDS, TB and Malaria Fund conflicts of interest

Summary of letter<sup>1</sup> and responses<sup>2,3</sup>

*This article raises a number of issues about corporate sponsorship in the public health sector and as such is of interest to those working in the nutrition sector where 'corporate capture' is a much discussed issue (Ed).*

Recent letters in the 'Round Table' section of the World Health Bulletin debate the issues around funding by the Global Health Fund of an education intervention by alcohol giant SABMiller. A first letter sets the scene in stating that SABMiller is a major beer supplier to approximately 34,000 licensed outlets in South Africa and through them to an estimated 200,000 illegal outlets called 'shebeens' that act as de facto distribution arms. The company has established an education intervention that aims to minimise alcohol-related harm in men and reduce male violence against women and children, as well as reduce the spread of HIV/AIDS. The Global Fund to Fight AIDS, Tuberculosis and Malaria has included SABMiller as a sub-recipient of its Round 9 funding in support of the brewery's Tavern Intervention Programme for Men.



A typical example of a shebeen in an informal settlement, Namibia

The authors argue that Global Fund support for this initiative is cause for concern because it reflects the successful attempt of a highly profitable industry to position itself as committed to public health objectives. In reality, they argue, the liquor industry's aggressive marketing of its products is irrevocably linked with major health harms throughout the world, in South Africa in particular. Furthermore, as the impetus by government and non-governmental organisations (NGOs) to address alcohol-related harm in South Africa has increased, there has been an upsurge in efforts by the liquor industry to partner with government and public health agencies. Such partnerships lend legitimacy and provide a platform for the liquor industry to lobby against proposals to reduce the availability of alcohol, increase the price of alcohol, through raising excise taxes and place restrictions on the marketing of alcohol, despite the global evidence that these measures are the most cost-effective way to decrease alcohol-related harm.

The authors argue that although a programme that aims to reduce HIV infection as well as violence against women and children

is welcome, it is debatable whether men who attend shebeens are the best target group for the intervention, whether a drinking establishment is the best location and whether the educational intervention itself is effective. Their experience is that the liquor industry is inclined to support alcohol interventions that have limited impact on drinking at a population level. Also, eliciting funds earmarked for the global public good not only provides the liquor industry with free advertising and mechanisms to achieve its goals, but also reduces available funding for less well-resourced organisations.

The authors state that calls for accountability and good governance relating to the Global Fund and similar agencies have been increasing recently and that such bodies should not fund organisations with conflicted interests. They also state that despite submission of a request for the Global Fund to reconsider the award to SABMiller, the funding is going ahead. They fear that the problem of 'corporate capture' described in the field of nutritional research, has now spread to one of the largest health funders in the world.

The Global Fund were invited to respond to this letter in the same issue and in so doing made a number of points. The Global Fund, as a public-private partnership, encourages the private sector to engage in all aspects of its work, ranging from mobilisation of resources, implementation of grants and governance of funds. The Global Fund does not endorse the actions, practices or policies of any corporation or industry beyond the field of the fight against these three diseases (HIV/AIDS, TB and Malaria). The model of the Global Fund is based on the concept of country ownership. Countries determine their own programmatic priorities and implementation strategies and submit requests for funding based on identified funding gaps. One of the central channels of country ownership is the Country Coordinating Mechanism, which is made up of representatives from both the public and private sectors including governments, multilateral or bilateral agencies, NGOs, academic institutions, private businesses and people living with the diseases. In its mandate as the Country Coordinating Mechanism, the Resource Mobilisation Committee of South Africa submitted a Round 9 HIV proposal focusing on HIV prevention and care and support activities. The proposal was reviewed by the Global Fund's Technical Review Panel, an independent panel of international experts on health and development.

A portion of the Round 9 funding is directed towards a cost-sharing programme that is implemented jointly by SABMiller, the South African Business Coalition on HIV/AIDS (SABCOH) and the Government of South Africa. This programme focuses on the provision of HIV counselling and testing, training and peer education in taverns and shebeens and psychosocial support for caregivers. The Global Fund regards this cost-sharing

programme as an important endeavour to mobilise greater resources for the fight against HIV and recognises the contribution that SABMiller and SABCOH can make in reaching at-risk populations with prevention and care and support activities.

Researchers estimate that more than 85% of locations where individuals meet new sexual partners in South Africa are shebeens and other alcohol-serving establishments. Studies have shown that even brief interventions in bars and taverns can result in reduced risky sexual behaviours. The Global Fund considers men attending alcohol-serving establishments to be a key target population and sees these establishments as viable and dynamic locations for intervention. The Global Fund therefore supports South Africa's implementation strategy to collaborate with SABMiller and SABCOH as an innovative approach to address the HIV/AIDS epidemic. As is the case with other programmes it supports, the Global Fund will monitor the performance of the grant and expects an evaluation of the programme in line with its system of performance-based funding.

A final letter in the round-table discussion re-emphasises the conflict of interest element stating that at the heart of the problem is the apparent failure by both the Global Fund and the Government of South Africa to recognise and adequately address the potential conflict between corporate interests and public health goals. The authors suggest that the initial failure to recognise this conflict of interest lies with the South African Government, which entered into a partnership with SABMiller before the Global Fund funded this public-private partnership. It is further argued that industries whose products are harmful to health are increasingly attempting to enter into such partnerships as part of their corporate social responsibility strategies. Furthermore, evidence suggests that these corporate social responsibility strategies are intended to facilitate access to government, co-opt NGOs to corporate agendas, build trust among the public and political elite and promote untested, voluntary solutions over binding regulation.

The authors conclude that the Global Fund is being naive in simply exempting tobacco and arms producers from its remit. The products sold by these corporations may be unique but their conduct is unlikely to be and these two issues should not be confused. Whether a company sells cigarettes or alcohol, its main goal is to maximise shareholder returns. Policies that could reduce such returns are therefore contrary to its interests.

<sup>1</sup> Matzopoulos. R et al (2012). Global Fund collusion with liquor giant is a clear conflict of interest. Bulletin World Health Organisation 2012; 90:67-69|doi:10.2471/BLT.11.091413

<sup>2</sup> Bampoe.V et al (2012). Response from the Global Fund. Bulletin World Health Organisation 2012;90:70|doi:10.2471/BLT.11.096990

<sup>3</sup> Gilmore. A and Fooks.G (2012): Global Fund needs to address conflict of interest. Bulletin World Health Organisation 2012. 90:71-72|doi:10.2471/BLT.11.098442



# Double Burden of obesity and malnutrition in Western Sahara refugees

Summary of published research<sup>1</sup>

There is growing recognition of a 'double burden' of malnutrition among populations in both affluent and less-affluent countries, i.e. the coexistence of undernutrition (e.g. stunting or underweight) with overweight, which has been observed at national and household levels. At present, little is known about whether undernutrition and overweight coexist among refugees in protracted settings, or about the proportion of refugee households that may be affected by this double burden. A recent study of refugees from Western Sahara aimed to use anthropometric data from a routine UNHCR nutrition survey to investigate the existence of the double burden of malnutrition in a refugee population highly dependent upon food assistance and living in a protracted emergency.

People from Western Sahara (also known as Sahrawi) have lived as refugees in camps near Tindouf city, in southwest Algeria, an area with a harsh desert environment. Their situation is considered a protracted emergency, as there is a stalemate to negotiations, with no sign of imminent resolution. Although accurate estimates are not available, the host country estimates that there are 165,000 people living in four camps (Awserd, Dakhla, Laayoune and Smara), mostly dependent on food assistance from international organisations.

A two-stage household cluster survey with four strata (one per camp) was conducted in October and November 2010 to collect nutrition indicators from children (<5y) and women of childbearing age (15–49y). The study sampled 2,005 households, collecting anthropometric measurements (weight, height and waist circumference) in 1,608 children (6–59 months) and 1,781 women (15–49y). The prevalence of global acute malnutrition (GAM), stunting, underweight, and overweight was estimated in children. Stunting, underweight, overweight and central obesity (waist circumference  $\geq$  than 80cm) prevalence was estimated in women. To assess the burden of malnutrition within households, households were first classified according to the presence of each type of malnutrition. Households were then classified as undernourished, overweight or affected by the double burden if they presented members with undernutrition, overweight or both, respectively.

The study found the prevalence of GAM in children was 9.1%, 29.1% of children were stunted, 18.6% were underweight, and 2.4% were overweight. Among the women, 14.8% were stunted, 53.7% were overweight or obese, and 71.4% had central obesity. Central obesity (47.2%) and overweight (38.8%) in women affected a higher proportion of households than did GAM (7.0%), stunting (19.5%), or underweight (13.3%) in children. Overall, households classified as overweight (31.5%) were most common, followed by undernourished (25.8%), and then double burden-affected (24.7%).

The authors of the study ask how a population that was previously nomadic, possibly experiencing chronic energy insufficiency, could have developed the observed high levels of overweight and obesity, while living in refugee camps in the absence of economic development. One factor suggested is that the Sahrawi were traditionally nomadic and culturally associate larger bodies with wealth and beauty. Thus fattening practices are common among Sahrawi, involving periods of ritual overfeeding and the use of appetite enhancers and traditional medication (suppositories composed of a mix of dates, seeds, and medicinal plants that are believed to increase peripheral fat accumulation). Urbanisation has possibly created synergy between these customs and the adoption of processed foods and modern medicines, thereby increasing the likelihood of obesity. Such a synergy might also affect those living as settled refugees, as they depend on food assistance and have limited access to local markets in Algeria. Another factor may be the excessive sugar consumption habit among the Sahrawi. One example is found in the frequent and widespread consumption of green tea (with an average reported consumption among refugees of three servings of 30 ml each, three times a day), which is usually prepared adding about five teaspoons of sugar for each teaspoon of green tea leaves. Lastly, urbanised Sahrawi women with high Body Mass Index (BMI) values have been found to walk significantly less than those with normal BMI values, thereby reducing their energy expenditure.

These factors may help to partially explain the high prevalence of overweight in this population. However, they are complemented by other factors affecting refugees living in the camps, which may help explain the high prevalence of both undernutrition and overweight in this population. Importantly, some factors that are associated with undernutrition in early life appear to increase susceptibility to overweight in later life. Both nutritional deficiencies and food insecurity, which as observed in the study findings often result in wasting and stunting in early life, are also associated with subsequent obesity. The underlying mechanisms are still being established. For instance, studies from shanty towns in Brazil have suggested that stunted children have impaired fat oxidation capacity, a risk factor for obesity, although it is not known if this developmental adaptation occurs in other populations. Programming of leptin receptors in the brain is another potential mechanism receiving attention. There is also a growing understanding that individuals experiencing undernutrition early in life are more susceptible to developing obesity by subsequent exposure to refined, carbohydrate-rich diets and high sugar intake, features characteristics of this population's diet. One crucial aspect is that Sahrawi refugees are dependent on food assistance to cover most of their nutri-

tional needs and thus lack control over their food system. A typical food assistance basket for this population will often be rich in starchy foods (refined grain cereals, pulses, and blended foods) and sugar. The refugee food assistance package typically contains low quantities, if any, of fresh or dried vegetables and fruit, therefore providing a low diversity diet. Recent evidence suggests that a low diversity diet is related to obesity and associated comorbidities, as well as being associated with nutritional deficiencies. In other words, the quality of the diet deriving from the food assistance currently provided may be implicated in both nutritional extremes.

These findings raise numerous challenges. First, the emergence of obesity and the double burden of malnutrition have serious implications for how international organisations should plan and provide assistance, especially for those populations exposed to conflict or displacement of protracted duration. For example, food assistance policies need to be revised and adapted, as those currently designed to meet population minimum needs during an acute emergency will need to consider their potential contribution to the later development of non-communicable diseases (NCDs). Additionally, efforts are needed to promote long-term food security and higher nutrition adequacy in protracted emergencies. The actions needed range from improved food security assessments, with special focus on diversity within food groups, to provision of cash or vouchers, to community involvement in sustainable livelihood programmes such as gardening and small-scale businesses. The Sahrawi refugees have been residing in camps since 1975. Generations of adults from birth have received food assistance as their main source of food. Their children are now the second or third generation exposed to a consistently low quality diet. The intergenerational impact of this exposure is of serious concern in this and similar protracted emergencies.

Second, efforts are needed to evaluate and monitor the health impact of obesity and the double burden in refugee situations. Obesity and NCDs should be routinely included in nutrition and health assessment exercises in protracted refugee settings, and should be incorporated into the UNHCR Health Information System database.

Third, the development of appropriate and effective behaviour change interventions to prevent and tackle obesity in these contexts will need innovative approaches. These will require health personnel and community participation in the identification of needs and implementation of solutions. Additionally, a detailed economic assessment is needed to correctly evaluate the resources needed for prevention and treatment. Lastly, careful policy and advocacy work will be required to convey the complexity of the situation, and to ensure that continued support for life-saving food assistance programmes and the tackling of undernutrition and nutritional deficiencies is not jeopardised as the threat of obesity to refugee health receives the attention it deserves.

<sup>1</sup> Grijalva-Eternot. C et al (2012). The Double Burden of Obesity and Malnutrition in a Protracted Emergency Setting: A Cross-Sectional Study of Western Sahara Refugees. PLOS Medicine, October 2012, volume 9, Issue 10, e1001320, pp 1-12





# Integrating anaemia analysis in SMART surveys in Bolivia

By Susana Moreno, Brigitt Olagivel and Elisa Dominguez



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## Bolivian Chaco Region



## Field Article

The 'Chaco', which is a term derived from the Quechua 'Chaku' and means 'hunting land', is a geographic area that takes in parts of Bolivia, Paraguay and Argentina. The Bolivian Chaco has a surface area of approximately 128,000 km<sup>2</sup>. It has very irregular weather patterns affecting temperatures, rains and winds and is characterised by intense rainy summers and dry winters. The region is especially subject to regular floods and droughts related to El Niño and La Niña oscillations. The vulnerability of the Chaco rural population, who subsist on a farming and livestock based economy and have poverty levels higher than those in many other areas of the country (INE 2001<sup>1</sup>), increases the potential impact of disasters.

Between February 2009 and November 2010, the Chaco region, especially the Bolivian Chaco, suffered an *exceptional* rain deficit according to the Meteorological Hazards and Seasonal Forecasting Group of Benfield UCL Hazard Research Centre. During the austral (southern hemisphere) summer 2009-2010, rains were 60% less than expected.

Because of this protracted drought, the Bolivian government declared a National Emergency Situation in Chaco Region in June 2010 and a Plan of Emergency Assistance and Farming Recuperation was established. Water consumption, farming and livestock of more than 7,600 households were severely affected according to a UNETE evaluation report (2010)<sup>3</sup>.

In October 2010, global acute malnutrition (GAM) prevalence (based on weight for height z score (WHZ)) in rural children under five years of age was above 10% in two of the three Chaco departments (Cordillera and Chuquisaca). High prevalence rates of acute malnutrition in seven out of 16 Chaco districts were confirmed by CT-CONAN (Comité Técnico - Consejo Nacional de Alimentación y Nutrición)<sup>4</sup>.

To explore the nutritional and food security situation further, Acción contra el Hambre (ACH), in collaboration with WFP, UNICEF and COOPI, implemented ESAE<sup>5</sup> and SMART nutritional surveys including anaemia prevalence, in the Bolivian Chaco Region, between March-April 2011. Urban populations were excluded as ACH was only targeting rural areas. Also, it was considered that a bias could be introduced if urban areas were included, given the large social and economic differences between rural and urban populations in Latin America.

Box 1 overviews the SMART survey approach. The inclusion of haemoglobin (Hb) analysis to determine anaemia status in SMART surveys gives a more complete nutritional status assessment, particularly with regard to potential constraints for adequate child growth and development due to iron deficiency. Such analysis is especially important in countries like Bolivia where iron deficiency anaemia is a major nutritional problem, affecting 61% of Bolivian children between 6-59 months old (DHS 2008)<sup>6</sup>.

This article describes the survey undertaken with a particular focus on the anaemia assessment component.

### Methodology

#### Population

The Bolivian Chaco is located in the southeast of the country and extends over five provinces belonging to the departments of Cordillera, Tarija and Chuquisaca (see map). According to the last national census (2001), the 16 Chaco districts have a population of nearly 300,000 inhabitants, over half (56%) of whom live in rural areas. Districts have a skewed urban population distribution, where three out of the nine urban areas in Chaco Region host more than 84% of total urban population of this area (Yacuiba (51%) and Villamontes (12%) in Gran Chaco Province, Tarija, and Camiri (21%) in Cordillera province, Santa Cruz).

The population of Chaco is ethnically composed of mainly Guaraníes and Mestizos (rather than Quechuas) and other aborigine groups like Aymara, Carai or Weenhayek. However, the ethnic composition varies between the Chaco provinces. More than 80% of households surveyed practice agriculture, and maize is the main subsistence crop. More than

<sup>1</sup> INE 2001. Censo Nacional de Población y Vivienda. Instituto Nacional de Estadística. <http://www.ine.gov.bo/anda/ddibrowser/?id=31>

<sup>2</sup> The full assessment report is available in Spanish at: <http://www.reliefweb.int/rw/rwb.nsf/db900sid/VDUX-89GRUC?OpenDocument&query=bolivia>

<sup>3</sup> UNETE. RED HUMANITARIA 2010. Bolivia: Sequía en el Chaco - Reporte de misión de valoración y validación de información. Report Government of Bolivia, UN Country Team in Bolivia. <http://reliefweb.int/node/368278>

<sup>4</sup> Technical committee of the National Council on Food and Nutrition

<sup>5</sup> Evaluación de seguridad alimentaria de emergencia (food security assessment in emergencies). More information at: [http://documents.wfp.org/stellent/groups/public/documents/manual\\_guide\\_proced/wfp203212.pdf](http://documents.wfp.org/stellent/groups/public/documents/manual_guide_proced/wfp203212.pdf)

<sup>6</sup> Available at: <http://www.measuredhs.com>



95% of households have livestock – in order of priority, poultry, pigs and cattle.

Due to a number of political and administrative factors and in order to allow comparison, a total of three SMART surveys, one per department, were implemented.

### Sampling

Using cluster sampling and the latest published GAM prevalence rates (UNETE 2010<sup>7</sup>), a representative sample for each department was calculated using ENA software for SMART. Values are shown in Table 1.

All rural localities listed in the last census 2001, except Mennonite communities<sup>9</sup>, were considered for random selection using ENA (Emergency Nutrition Assessment) software. The current population for each community was calculated applying the 2010 district population provision of INE (National Statistics Institute) based on the 2001 national census. Localities with more than 2,000 inhabitants (considered as urban), were not included in the survey. Between 52 and 58 localities were sampled in each department. The final samples were 884 children between 6 and 59 months old in Cordillera (Santa Cruz), 477 in Chuquisaca and 420 in Tarija. Some parents did not authorise Hb analysis, so final sample sizes for collection of anaemia data were slightly lower. The characteristics of each locality determined the household sampling method used in a given locality. The approach employed the sampling decision tree set out as part of the SMART methodology.

### Equipment

Iron deficiency anaemia was detected through use of a Hb analyser HemoCue Hb 201+ (Figures 1a and 1b). This portable analyser allows field measurement of the Hb concentration in peripheral blood through photometric detection. Material for Hb analysis includes microcuvettes, lancets, gloves, alcohol, toilet paper, cotton, batteries and a waste bottle. The anaemia analysis cost was about 2 dollar/child (excluding the cost of the HemoCue which was approximately 1000 dollars/unit).

Microcuvettes do not need refrigeration and as the Hb analysis is implemented right after the blood sample is taken, there is no special requirement for transport or storage. The main field constraint to take into account is the climatic environment. In order for the chemical reaction to work properly in the HemoCue Hb 201+, temperatures lower than 15°C or higher

than 30°C or humidity more than 90% without condensation must be avoided.

### Training

Inclusion of anaemia analysis in the SMART survey did not necessitate increasing the number or qualifications of staff. However, in some countries, lab officers or nurses may be required by the Ministry of Health.

Theoretical and practical training for the anaemia test took around four hours. With good team organisation, the average time to do the Hb analysis in the field is about five minutes per child, although this does depend on the child's amenability and team experience. The chemical reaction in the HemoCue Hb 201+ usually takes one minute.

The survey was implemented in March and April of 2011 coinciding with the last two months of the rainy season and the first 'choclo' (green corn) harvest. One to two weeks before the survey, local and selected community authorities as well as health posts/centres were informed and authorisation for the survey was requested. Some ethnic groups, or populations from specific geographic zones, were averse to blood tests so this prior sensitisation and mobilisation stage is especially important for anaemia studies.

Family authorisation was also required. For this it is important to distinguish between permission for anthropometrical measurements and bilateral oedema which is non-invasive, to permissions for blood tests which are invasive.

The fact that results are obtained immediately allows the family to have the Hb status of their children confirmed instantaneously. This is highly appreciated. A model of the card given to each family with the results is shown in Figure 3. Different stamps were designed and used to represent a child with anaemia, without anaemia and borderline and made it easier for caregivers to understand (Figure 3). Although only 1 to 3 blood drops are needed for the reaction analysis, one common belief and reason for resistance to the test was the suspicion that blood may be sold. One way to reassure the

Table 1: Sample estimations for SMART nutritional survey by Chaco department

Sampling	Cordillera	Chuquisaca	Tarija
Total population*	57,321	53,641	66,667
GAM prevalence (WFP 2010 <sup>8</sup> )	13.5%	19.9%	6%
Estimated precision	3	5	2.5
Design effect	1.5	1.5	1.5
Estimated sample size	814 +5%=855	400 +10%=440	348 +10%=383
Final sample size	884	477	420
Average household size (No. of people per household)	5.23	5	5
Children under 5 years (%)**	13%	15%	15%
Households that declined to participate (%)	3%	3%	3%
Estimated no of clusters	48	32	32
Final no. of clusters	48(49)**	32	33
Total no. of communities	58	52	53
No. of children under 5 years in each cluster	18	14	12
No. of children with Hb sample 6-59 months (6-24 months)	859 (302)	469 (161)	420 (154)

\* Total population for each department (excluding populations over 2000 inhabitants as considered urban and not included in the survey)

\*\*An additional cluster was included to enable the expected number of children to be reached.



Figure 1a: Material for Hb analysis



Figure 1b: Blood drop for Hb analysis

### Box 1: What is a SMART survey?

The Standardised Monitoring and Assessment of Relief and Transition (SMART) programme is an inter-agency initiative to improve monitoring and evaluation of humanitarian assistance interventions.

The SMART Methodology provides a basic, integrated method for assessing nutritional status and mortality rate in emergency situations. It provides the basis for understanding the magnitude and severity of a humanitarian crisis. The optional food security component provides the context for nutrition and mortality data analysis.

SMART surveys measure acute malnutrition of the whole population via estimates of:

- Prevalence of Global Acute Malnutrition (GAM) in children aged 6-59 months.
- Crude mortality rate (CMR) in a given population over a specific period of time.

- Food security assessments, which are used to understand and interpret nutritional and mortality survey data.

The SMART manual deals specifically with *nutrition and mortality surveys*, including sampling, nutritional measurements, and mortality rates. It describes general survey procedures and provides information on how to collect data necessary for planning direct interventions in emergency settings or for surveillance. It also provides step-by-step instructions for analysing survey data using *Emergency Nutrition Assessment (ENA) software* and procedures for food security assessments.

For more information, including access to the SMART Manual, additional resources, ENA software and a SMART forum for practitioner questions, visit: <http://www.smartmethodology.org>



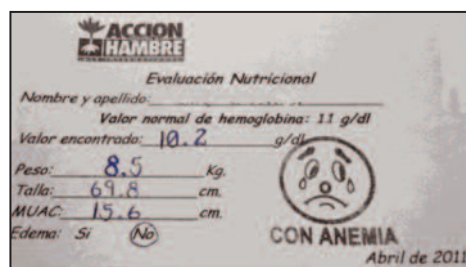


Figure 2: Results card for the families, one per child

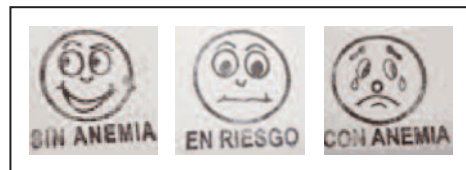


Figure 3: Stamps representing anaemia status

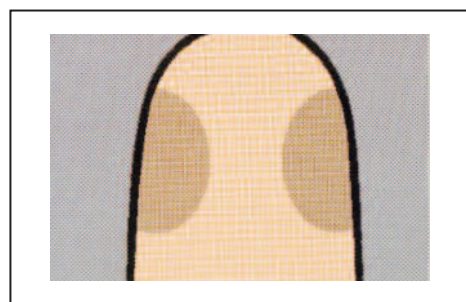


Figure 4: Puncture zone on middle hand finger



Figure 5: Puncture zone on heel

population about this fear was to allow them to keep the microcuvettes used for their analysis. However, we do not recommend standardising this practice due to waste management difficulties.

The peripheral blood sample was taken from the left hand middle finger (Figure 4) and when this extraction was not possible (under 1% of cases), the sample was taken from the heel (Figure 5). The specific methodology used to take the blood sample and conduct the Hb analysis can be found in INS (2005)<sup>10</sup>.

Height, weight, mid-upper arm circumference (MUAC) measurements and bilateral oedema check-up, as well as the blood test, were done for each selected child following standardised protocols.

Age (months)	Category upper limit		
	Mild g/dl	Moderate g/dl	Severe g/dl
0-3	8.9	6.9	4.9
3-6	10.4	8.4	5.4
7-23	10.9	8.9	5.9
24+	11.4	9.4	6.4

Source: ENDSA, 2008. Encuesta Nacional de Demografía y Salud. INE.

Analysis

Each child's information was entered in the ENA software in order to check and correct possible mistakes. The same software was used to analyse indicators based on weight and height measurements and presence of oedema, and to calculate prevalence of acute and chronic malnutrition. Anaemia and MUAC data were analysed with Excel 2007 and SPSS 17.0.

MUAC cut-off points were established at 115 mm for severe acute malnutrition and 125 mm for moderate acute malnutrition.

Cut off points for anaemia and the severity scale varies according to authors, age, pregnancy, countries and geographic altitude (INS 2005). In this case, and largely to allow comparisons, anaemia classification was based on the same cut-off points used for children between 6-59 months old in the previous Demographic and Health National Survey (2008) in Bolivia. These are shown in Table 2.

Results and discussion

According to these first SMART surveys in Bolivia, GAM prevalence in Chaco rural population under five years is less than 1.5%. There is less than 6% underweight and approximately 20% stunting. Malnutrition prevalence in each department is specified in Table 3. The highest values were found in Cordillera province (Santa Cruz). The child nutritional situation after the 2010 drought seems to have returned to normal values, when compared with ENDSA 2008 and PMA 2006<sup>11</sup> survey findings. Anthropometric results in conjunction with the ESAE analysis showed that causes of malnutrition in Bolivian Chaco are generally structural and only change when occasional dramatic events like severe droughts or floods occur, as occurred in the 2009-2010 drought.

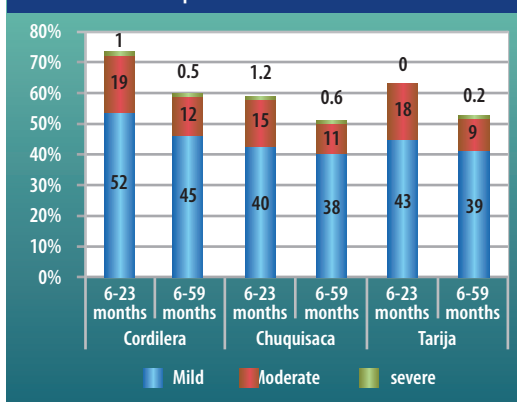
Based on MUAC, a total of nine cases of acute malnutrition were detected in all Chaco Region. Out of these nine cases, only one was classified as acutely malnourished using weight for height z-score.

Hb analysis showed that iron deficiency anaemia in rural children between 6 and 59 months old in Bolivian Chaco is above 40%. Based on the FAO (2006) scale<sup>12</sup>, this signifies a severe iron deficiency problem in this region. Age, sex and district differences were found: anaemia was higher in children under 24 months of age, in boys and in Cordillera province (Santa Cruz Chaco) (see Table 4). Anaemia prevalence in 6-23 months aged boys from Cordillera was 75.3%, compared to 67.9% in girls. Overall prevalence in 6-59 months (both sexes) was highest in Cordillera (57%) and lowest in Tarija (48.8%). Approximately 70-80% anaemia cases were mild and less than 1.5% were classified as severe (Figure 6).

Table 3: Underweight, acute and chronic malnutrition prevalence and confidence intervals per department of Bolivian Chaco Region

	Cordillera	Chuquisaca	Tarija
	n=884	n=477	n=420
	% (n) (95% C.I.)	% (n) (95% C.I.)	% (n) (95% C.I.)
Acute malnutrition	1.4% (12) (0.8 - 2.4)	0.8% (4) (0.3 - 2.3)	0.7% (3) (0.2 - 2.3)
Underweight	5.9% (52) (4.2 - 8.1)	2.5% (12) (1.2 - 5.4)	3.6% (15) (2.1 - 6.1)
Chronic malnutrition	22.3% (197) (18.9-26.0)	18.8% (90) (15.0-23.4)	16.9% (71) (12.5-22.5)

Figure 6: Prevalence of anaemia by severity in children 6-23 months and 6-59 months per Bolivian Chaco departments



Note: Numbers have been rounded for graphic display

These results confirm anaemia as one of the major nutritional problems of rural children in Bolivian Chaco. Iron deficiency anaemia prevalence found in ENDSA 2008<sup>13</sup> was also above 40% showing that iron deficiency anaemia is an endemic problem with structural causes amongst the Bolivian Chaco population. Iron deficiency anaemia in children has adverse effects on physical and psychomotor development, the immune system and physical performance<sup>14</sup>. Its reduction through programmes and policies which impact the structural causes must therefore be a key government goal.

Conclusions

Anaemia analysis is easily integrated into SMART surveys without an excessive increase of budget or resources required. It provides a more profound understanding of the nutritional problems affecting a population than anthropometric surveys alone and hence the policies, strategies and programmes that must be pursued to eradicate malnutrition. Its application is especially important in areas or groups with high risk of "hidden hunger" due to micronutrient deficiencies, i.e. in regions like Latin America or urban settlements in developing countries. ACF is currently evaluating whether the urban population of the Bolivian Chaco needs to be included in future anaemia surveys.

If you have any comments regarding this article, please contact: hom-pe@acf-e.org

<sup>10</sup> INS. Instituto Nacional de Salud. 2005. Manual del Encuestador. Monitoreo Nacional de Indicadores Nutricionales. Perú. Capítulo II: Manual de diagnóstico de anemia por hemoglobímetro y su utilización. Perú. <http://www.ins.gob.pe/portal/jerarquia/5/311/monitoreo-nacional-de-indicadores-nutricionales-monin/jer.311>

<sup>11</sup> PMA. 2006. Diagnóstico de la Seguridad Alimentaria y Nutricional en el Chaco Boliviano. Programa Mundial de Alimentos de las Naciones Unidas.

<sup>12</sup> FAO. 2006. Indicadores de Nutrición para el Desarrollo. Organización de las Naciones Unidas para la Agricultura y la Alimentación. Roma, 2006

<sup>13</sup> ENDSA. 2008. Encuesta Nacional de Demografía y Salud. INE.

<sup>14</sup> World Health Organization 2001. Iron Deficiency Anaemia. Assessment, Prevention and Control. A Guide for Programme Managers. WHO/NHD/01.3

Table 4: Anaemia prevalence in boys and girls aged 6-23 months and 6-59 months per Bolivian Chaco Departments

Age (months)	Sex	% anaemia prevalence		
		Cordillera	Chuquisaca	Tarija
6 - 23	Girls	67.9	55.5	55.1
	Boys	75.3	57.7	67.1
	Total	71.9	56.5	61.1
6 - 59	Girls	55.5	49.1	47.0
	Boys	58.6	50.3	50.5
	Total	57.0	49.7	48.8



# Food, goats and cash for assets programmes during emergency drought response in Kenya

By Geoff Brouwer



Geoff Brouwer worked as a research and communications consultant for World Renew—formerly the Christian Reformed World Relief Committee (CRWRC) - in Kenya for their International Disaster Response team. After working briefly in Canadian politics he took on several research assignments in Kenya examining various topics including community water management and the Kenyan Water Act. He is currently completing his Master's degree in Ottawa at the Norman Patterson School of International Affairs.

World Renew extends thanks and recognition to the Canadian International Development Agency (CIDA), the Canadian Food Grains Bank (CFGB), Integral Alliance and ACT Alliance for their generous support in the Horn of Africa. The author also gratefully acknowledges and recognizes the dedica-

tion of World Renew's partner Christian Community Services (CCS) and their continued work in communities throughout Kenya. Lastly the author would like to express deep gratitude to the welcoming communities and individuals who participated in the research.

This field article is based on a comparative study of four relief and emergency response activities - one Cash-for-Assets (CFA), one Goat-for-Assets (GFA), and two Food-for-Assets (FFA) projects - implemented by World Renew, formerly the Christian Reformed World Relief Committee (CRWRC), in response to the 2011 drought in Kenya. The fieldwork included surveys that were collected intermittently throughout the project cycles in addition to focus group discussions and interviews with key informants, which were carried out over several months in early 2012. The objective was to gather a deeper understanding of the various modes of asset-exchange and their differences as emergency responses.

Women gathering to collect water from a water pan in Kilifi

World Renew (CRWRC), Kenya, 2012

## Background and purpose

The vast majority of humanitarian aid worldwide (90%) is provided as in-kind transfers such as food, livestock, seeds, and shelter rather than in the form of cash.<sup>1</sup> However, it is being widely observed that there is an ongoing trend, exhibited by humanitarian organisations and governments alike, moving towards less traditional modes of relief intervention, especially cash transfers. Correspondingly, there has been an expanding body of knowledge in the past decade on the use of cash as an alternative means of relief in a variety of emergencies.

The bulk of existing literature indicates that the motive behind this is two-fold. In cases where markets are functional, cash is said to be more cost effective, more efficient and have a more positive effect on local economies.<sup>2</sup> Because in-kind food aid requires substantial logistical support and organisation, it often incurs a higher financial cost. Secondly, several studies have highlighted the fact that providing cash is more respectful of human dignity as it is less paternalistic and respects the autonomy of recipients to make choices and prioritise their needs which, in turn, also achieves a higher rate of satisfaction.<sup>3</sup>

Yet despite the growing literature surrounding cash transfers, little critical attention has examined how and in what ways beneficiaries and communities respond to the mode of exchange. While claims have been made on the efficiency of a cash intervention compared to food, it is also important to examine the perspectives and preferences of recipients, investigate the differences of impacts on livelihoods, determine how well each met their objectives, and assess the challenges and limitations faced by each mode of intervention.

## Methodology

This study employs both qualitative and quantitative methods. Surveys with project beneficiaries were completed before and after activities to assess impact. Focus group discus-

sions were completed in order to gather a broader understanding of how projects impacted beneficiaries and communities. The focus groups were selected randomly (see Table 1).

A total of 18 focus group discussions were completed involving a total of 184 participants comprised 121 women and 63 men. The average size was 10.2 persons per group, but ranged from a minimum of five to 21 in certain cases. Additional participatory methods were used such as field observations and interviews with key informants including beneficiaries, local government officers, project coordinators and community leaders.

## Project summaries

### Food-for-Assets (FFA)

The FFA projects examined in this study were implemented in two different counties in Kenya, Mbeere and Kilifi. The two projects were designed as short-term interventions during the hunger months between September 2011 and January 2012 in response to failed harvests of the 2011 drought. Both projects targeted agro-pastoralists in semi-arid areas and aimed to provide a 50% food ration (50 kg maize, 10 kg split peas) to 1,000 households (HH) and 2,400 HH respectively. Beneficiaries from each HH were required to participate in work activities on community assets such as water pans in Kilifi but also tree planting, and community farms in Mbeere. The targeting

criteria for the two projects were similar: farmers who lost 90% of their harvests, herders who lost a significant number of their animals, or families who were eating less than one meal a day. Due to the high level of need and the severity of food insecurity, priority was given to the highly vulnerable e.g. women- and child-headed households, orphans, elderly, chronically ill and the disabled. The expected outcomes of the project were to increase food consumption, improve resilience to drought, access to water and increase crop production.

### Cash-for-Assets (CFA)

The CFA project was conducted in Kilifi district targeting 600 HH and shared many similarities to the FFA activities. While the identified locations in Kilifi overlapped with some FFA projects, they targeted different beneficiaries. The cash-transfer projects started later from October 2011 – February 2012 dispensing 2,500 KES/month via nearby banking systems in exchange for participation (10 day/month) in the construction and rehabilitation of water pans. Initially targeting 600 participant households, the project was only able to retain 475 HH due to a variety of constraints that are discussed below. As with the FFA projects the objectives of this intervention were to increase household food consumption as well as increase community resilience to drought. Households were targeted if they had lost 50% of their harvest and were consuming less than 2 meals per day.

Table 1: Sample estimations for SMART nutritional survey by Chaco department

Project	No. of focus groups	Participants (male: female)	Focus group participants as % of total participants
Food-for-Assets	4 – Mbeere 3 – Kilifi	50 (17:33) – Mbeere 30 (9:21) – Kilifi	5% 8%
Cash-for-Assets	5	45 (15:30)	9.5%
Goats-for-Assets	4	59 (22:37)	9.8%
Total:	16	184 (63:121)	--

<sup>1</sup> Kelaher, D and Dollery B, 2008. Cash and in-kind food aid transfers: the case of tsunami emergency aid in Banda Aceh. *International Review of Public Administration* 13(2):117-128.

<sup>2</sup> World Food Programme. Cash and food transfers for food security and nutrition: emerging insights and knowledge gaps from WFP's experience. October, 2006.

<sup>3</sup> M Benjamin, C Donovan, and V Kelly. 2009. Can cash transfers promote food security in the context of volatile commodity prices? A review of empirical evidence. *Agricultural Economics*. Michigan. Kelaher D, and Dollery B. 2008. Cash and in-kind food aid transfers: the case of tsunami emergency aid in Banda Aceh. *International Review of Public Administration* 13 (2): 117-128. Pierson R. T. Ntata. 2010. Bridging the hunger gap with cash transfers: experiences from Malawi. *Development in Practice* 20 (3): 422 – 427.



*Goats-for-Assets (GFA)*

The GFA projects had distinctly different objectives, since the activities followed after the end of the 2011 drought. Targeting 600 HH in Mbeere from the months of February-May 2012, families were required to participate in the completion of water pans and dams in exchange for participation in a goat re-stocking programme. A work programme involving 10-12 work days per month was rewarded at the project's completion with a hybrid milk-producing goat for each family, training in livestock care, and a male goat shared between five families. The project was designed to improve livestock health, increase household food security and to alleviate suffering from the drought by supporting livelihoods through the availability and accessibility of water.

**Findings**

*Beneficiary participation*

A widespread observation made in all projects was the disproportionate involvement of female participants to males on the various work schemes. In each of the work sites, women made up the majority of the participants, ranging between 70-95%. Targeting criteria played some role in this, as those selected were often widows and single mothers. However, this does not account for the female participation rates at certain work sites being as high as 90-95%. The most common community explanation for this was that many men had left for larger towns to find casual labour or were engaged in other activities such as farming or charcoal burning. It was also suggested that the provision of food and water were traditionally a woman's responsibility, and since most of the work projects involved water pans and, at least indirectly, the provision of food, women were often sent on behalf of male household-heads to complete work activities.

However, men were more involved in the CFA projects. Group discussions revealed that men were more interested in receiving cash payments than food. Several men described being proud of finding employment and numerous women explained how men were returning from nearby towns to find employment at home. One challenge with this type of employment was that some participants would cease to work on water pans once the cash payments were finished, indicating a limited degree of ownership.

Another challenge with the CFA was that target beneficiary numbers fell to 475 due to drop out. Five of the six water pans failed to have the target number of beneficiaries and in one case nearly 50% of participants left the project. The reasons given by participants and project coordinators varied. One major factor was difficulties in the delivery of cash through

the banking system. A number of beneficiaries remarked that they had not received payments from the banks, and others had difficulties establishing an account due to lack of identification. Secondly, since some travelled long distances to access banking services and were ultimately turned down, they were discouraged. Another factor was the difficulty of the work; as the project progressed the work became increasingly difficult leading some to conclude that the pay was insufficient.

Both the GFA and FFA projects were more successful in reaching planned beneficiary numbers. Project coordinators noted that there was a higher level of demand for the projects than there were food rations available. It was also noted that non-direct beneficiaries participated in the work activities of FFA projects because they also recognised the benefit of the water pans. Similarly, the FFA work activities in Kilifi continued beyond the food distributions contrasting with the lack of participation in the cash-transfer projects in the same region.

*Impacts on food security and livelihoods*

Nearly all respondents highlighted the primary benefit of being able to send their children to school. Cash inputs allowed families to pay off growing debts to schools and have their children return to education, while those receiving food were able to use money for school fees rather than food expenditures. Both programmes also allowed families to send their children to school on full stomachs. An equally important benefit from both projects was the resulting increase in food consumption at the household level. All focus groups described having more energy and increased health due to the cash or food, which allowed them to engage in productive work activities such as farming. A third major benefit cited in all but two communities was how families were able to retain their livestock and avoiding selling them for poor prices in order to earn cash for food.

These benefits to food security were also evident from the survey results. The two FFA activities showed substantial increases in the number of meals per day. The baseline surveys showed that in Kilifi and Mbeere, 46.5% and 57% of targeted beneficiaries respectively were consuming two or more meals per day, compared to 73% and 97% upon project completion. In Mbeere, this included an increase in those consuming three meals a day from 3.7% to 40%. Reliance on negative coping mechanisms also showed strong signs of decline in Mbeere including the proportion of those limiting meal portion sizes from 70% to 39%, those begging for food on a daily basis from 7.3% to 0.5% as well as a decrease in charcoal burning activities.

Similar effects were identified in the CFW project. Before the implementation of the project during the hunger months, just 39% of families were eating two or more meals per day (average over the month), with the majority eating just one meal. Upon completion of the project, consumption of two or more meals per day had risen to 69% showing an increase of 30% (see Table 3). This rise was unlikely to be due to improved seasonal food availability as the projects ended before the harvest was mature – projects were designed to carry communities through to the harvest after the next rains, but not into the harvest, as to not deter farming activities. However, the survey found that the benefits were not sustained for long periods. A common complaint from recipients of food relief was the inadequacy of food rations. Just 34.6% of households reported that the rations lasted more than two weeks. The food allowances were designed to accommodate a household of eight persons, yet many households stated that ration had to be shared amongst many more, including neighbours and guests. Consequently, food rations were often inadequate in eliminating hunger during the project months. The CFA projects revealed similar findings.

Some focus group participants explained how money was too liquid and they were not accustomed to having such a large sum of cash at one time. According to surveys, at least 75% of the cash recipients would withdraw the total amount of cash from their bank account, much of which was spent within the first week.

*Other impacts*

Focus group discussion helped identify other significant impacts which were not identified in the surveys. One commonly identified benefit was the effects on family unity and cohesion. Groups from both the FFA and CFA expressed how payments (cash or food) allowed families to solve their immediate conflicts. Certain families had described how when their households began lacking food or cash, disagreements arose between husbands and wives, and occasionally between children and parents. There were numerous accounts of how wives had moved to their parents' home, or husbands to another city or live with another woman. Several informants described the healing of relationships as coinciding with the intervention. Moreover, men and women in both cash and food transfer programmes described how their sex drive returned resulting, in some cases, in new pregnancies.

However, in three of the five focus groups conducted during the CFA programme, several respondents described how the influx of cash also brought about conflicts. A group of women described how the ability to conceal or hide cash would lead to suspicion and doubt. Spouses were known to question each other on how much money remained or where it was spent. Those who highlighted this conflict also

**Table 2: Summary of asset-exchange projects**

Project	Location	Number of households (male: female)	Duration	Inputs	Outcomes
Food-for-Assets	Kilifi	2,400 HH (1,301:1,290)	Sept 2011 – Jan 2012 (5 months)	Food grains (maize, split peas), seeds (fruit trees, grass, crops)	Increased food consumption, access to water and improved harvests
	Mbeere	1000 HH (412:427)	Oct 2011 – Feb 2012 (5 months)		
Cash-for-Assets	Kilifi	475 HH	Oct 2011 – Feb 2012 (5 months)	2,500 KES per month (10 work days)	Increased food consumption, access to water and improve livelihoods
Goats-for-Assets	Mbeere	600 HH	Jan 2012 – May 2012 (5 months)	600 female, 30 males goats, rehabilitation work on 6 water pans	Increased water accessibility, animal support services, increased food security

**Table 3: Daily meal consumption**

	Location	Baseline survey: 2+ meals per day	End of project survey: 2+ meals per day	% change
FFA	Kilifi	46%	73%	+27%
	Mbeere	57%	97%	+40%
CFA	Kilifi	39%	69%	+30%



described how an in-kind transfer, such as food, would not lead to this type of challenge. A small number of individuals also recounted that certain individuals involved in the project had spent portions of money on alcohol or gambling.

Unique to the CFA projects was how the high participation of women gave them a greater control over cash in the household. Despite there being a higher participation of males in CFA compared to GFA or FFA work sites, the majority of participants were still women. Survey results showed that 56% of the bank accounts were registered under female participants, while just 30% were registered under male (14% were registered under the names of neighbours or friends). Ninety two percent of respondents indicated that it was the first time that they had possessed a bank account. Female participants described how having their own income allowed them to attain greater power over making decisions about household purchases than before. Previously, some married women described having to ask for money from their husbands to make purchases, whereas now husbands were asking for spending money. Monthly surveys throughout the project cycle indicated that on average women made HH financial decisions 47% of the time, whereas 51% of the time decisions were reported as shared between HH heads. Women commonly expressed both pride and happiness in being the breadwinners.

### *Beneficiary preferences*

A significant portion of focus group discussions was spent on dialogue surrounding the beneficiary preferences for the different types of programme. In each of the GFA and FFA projects, nearly all recipients chose their current mode of transfer over the alternative of cash. Occasionally a food recipient would show partiality towards cash but this was an anomaly; consensus in nearly every group indicated satisfaction with what they were receiving. Conversely, those who were enrolled in CFA programmes were split between payment in cash or food. Of the five focus groups done in the CFA locations, four exhibited more than half favouring in-kind food to cash, one of which even unanimously agreed on food. It was evident, however, that many of those expressing a desire for cash had few opportunities to earn income, while some preferring food had alternative means of income (such as casual labour or charcoal burning). Comparatively, male participants exhibited a greater preference for cash than their female counterparts, although the preference for cash was still in a minority.

Those preferring cash-transfers explained that being given money allowed them to address a number of needs, not just hunger. While hunger was consistently regarded as the most pressing need, it was pointed out that other pressing needs could not be solved with food, e.g. medical costs, school fees and payments of debts. Those preferring cash also highlighted their satisfaction with being able to make choices themselves. Some specifically expressed satisfaction with being able to choose between different types of food such as purchasing oil, meat or salt. A less common

Women and Men in a Kilifi community working on a large water pan



World Renew (CRWIRC), Kenya, 2012

explanation given for a preference of cash was how neighbouring families expected to be given a portion of food in the FFA programme until it was used up. It is uncommon to "hoard" food during a drought period, especially when others are going hungry. Cash recipients expressed high levels of possessiveness and ownership over their cash as they felt they earned it, and described feeling less of an inclination to share.

Those preferring food (approximately half those given cash and nearly all of those given food), attributed their preference to a variety of reasons. Most focus group participants agreed the hunger was the primary need that needed to be addressed. Parents expressed how when food was not in the home not only were they hungry, but also distressed because their children were weak or sick. This was a common point of tension and grief for families. Individuals further described how not having food to serve their family fuelled arguments and conflicts in the home. Thus, when food was provided peace was restored in the home.

Other preferences for food stemmed from a critique of cash. Some of the respondents who had received cash but preferred food described how cash was variable in its purchasing power. During the early months of the project, when prices were volatile and often inflated (at times doubled), they lost purchasing power. Furthermore, others described their inability to limit spending; none had described previously making savings and were unaccustomed to keeping cash. Accordingly, a month's food allocation cannot easily be consumed in a week, while cash can. Several individuals described lack of discipline and being "tempted" into making trivial purchases. Nearly 40% of focus group participants described how the cash was finished within the first week.

Finally, the vast majority of GFA participants expressed preference for goats over cash and food during focus group discussions. It is important to note the GFA project was specifically implemented after the dry season and correspondingly food needs were less pressing. Explanations from community members

conveyed how both food and cash are fleeting and would be quickly consumed, while a goat, especially a high milk-producing hybrid, can produce income and food for years to come. Furthermore, goats would also periodically give birth to offspring and produce manure for the fertilisation of their farms. One respondent in Mbeere indicated that goats acted as a savings account or insurance mechanism, as they could be sold in dry spells. Lastly, goats have intrinsic value as a sign of wealth and are often used in traditional customs such as in the payments of a dowry.

### *Payment uses*

The questionnaires for the CFA projects indicated that spending habits of beneficiaries changed throughout the project cycle but consistently showed the largest expenditure was on food. Mid-project, when food prices were highest, 85% of households spent at least half of their income on food, while 55% spent over three quarters of the cash on food. The end of project survey indicated that by

March 2012, after the short rains harvest, only 6% of households spent three-quarters or more of their income on food, while 73% spent more than half. The end of project survey indicated that 14% spent most on school fees while expenditures on servicing debts, paying medical costs and livestock care accounted for about a third of the cash transfer. These findings were consistent with focus group findings. Occasionally, households would have to pay large amounts towards school fees for secondary or college education or towards an unexpected medical emergency. While just 19% of beneficiaries managed some minimal savings (81% saved none), focus groups discussions were unable to locate any individual who had any substantial funds left in their account. While many liked the idea of having a bank account, they indicated that it was merely a mechanism to transfer funds and that it was not possible to maintain savings for the future without a steady income.

Surveys from the FFA projects revealed that between 88-90% of delivered food was consumed by the intended household. A portion of the food (19.8% in Mbeere and 12.0% in Kilifi) was shared or given to neighbours. For the GFA project, focus group discussions were not conducted after the distribution of goats, and an end of project survey has not yet been completed.

### **Conclusions**

Current guidelines increasingly stipulate that where markets are functional, CFA programmes are superior to food distributions specifically in terms of efficiency. While this may be the case, other key factors including gender participation, beneficiary preference, project ownership, adverse impacts and behavioural responses should also be considered. The above case studies carried out by World Renew shows that while there are many similarities between different models of asset exchange, they are not interchangeable and cannot be expected to achieve identical results.

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# en-net update, August to October 2012



By Tamsin Walters, en-net moderator

**F**orty-seven questions were posted on en-net in the three months August to October 2012 inclusive, eliciting 152 replies. In addition, 18 job vacancies and five notices were posted.

Recent discussions have included: appropriate treatment protocols using ready-to-use therapeutic food (RUTF) for older people with severe acute malnutrition (SAM), discharge criteria for Outpatient Therapeutic Programmes (OTPs), treatment of SAM in the absence of RUTF, how to interpret very low weight-for-height z-scores (WHZ) in nutrition surveys and whether to include them in analyses, assessing nutritional status of disabled children and establishing their nutritional requirements.

The Coverage assessment forum area has been busy since its inception almost a year ago. A particularly interesting dilemma was raised recently around handling cases that have been admitted to a community-based management of acute malnutrition (CMAM) programme with WHZ criteria, but a mid-upper arm circumference (MUAC) above 115mm and no oedema. In the situation in question, a SAM case was defined for the Semi-Quantitative Evaluation of Access and Coverage (SQUEAC) survey as MUAC < 115mm and/or presence of bilateral pitting oedema, while admission criteria to OTP included presence of bilateral pitting oedema, WHZ < -3 or MUAC < 115mm. The questioner was unsure as to whether a child admitted to the OTP using WHZ criteria should be considered a 'recovering case' or not a case at all in the coverage survey.

While responses presented different scenarios and reasoning for both inclusion and omission of the child from point coverage and period coverage calculations, there was consensus that the number of such children is likely to be very small in most surveys and therefore unlikely to greatly affect the overall coverage figure. However, an issue was raised as to whether it is appropriate to use a different case definition for admission into a programme as that for estimating coverage, as the coverage estimate does then not necessarily measure the same group of children who are enrolled in CMAM in the area. In programmes where nearly all admissions come from the community, assessed by MUAC and/or oedema, and there are very few WHZ admissions, there would probably be little impact on the coverage estimate. But in others it might be worthwhile confirming with programme data first that the proportion of children admitted to a CMAM programme based on WHZ is very small before excluding WHZ as a criterion in coverage assessment.

The discussion concluded with the observation that SQUEAC is a flexible methodology that can be adapted to different contexts, and a reminder that the main objective of SQUEAC is not to give a precise coverage figure but to examine and understand 'barriers and boosters' to achieving good coverage. Experience from coverage assessments to date suggests that coverage is generally low and this is not because of missing out the children admitted to programmes by WHZ, but because the community component of programmes is still weak. More attention and initiatives are needed to effectively address the community mobilisation aspects of programming.

To view the full discussion, go to <http://www.en-net.org.uk/question/846.aspx>

In response to growing interest and experience in the area of urban food security and nutrition, en-net has launched a new forum area on **urban programming**, <http://www.en-net.org.uk/forum/14.aspx>.

The first question focuses on: *Urban malnutrition – what do we know?*

*Urban malnutrition data is very difficult to ascertain, because surveys do not differentiate between urban and rural, or because there is a view that rural areas are more vulnerable. In cases where urban malnutrition rates are reported there is often a failure to disaggregate data by poor areas and those that are better off, so that the specific vulnerabilities of disadvantaged groups are concealed. Please share your views on this, experiences or research findings at <http://www.en-net.org.uk/question/873.aspx>*

Discussions will feature in a special 'urban edition' of Field Exchange planned in the first half of 2012 (Issue 46), see news piece this issue.

To join any discussion on en-net, share your experience or post a question, visit [www.en-net.org.uk](http://www.en-net.org.uk)

Contributions from Freddy H, Mark Myatt, Lio Fieschi, Gwyneth, Jose Luis Alvarez, and Ernest Guevarra.

# Erasmus Mundus Master Course in Public Health in Disasters

**T**he Erasmus Mundus Master Course in Public Health in Disasters (EMMPHID) is a joint university educational programme organised by the Universidad de Oviedo (Spain), the Karolinska Institutet (Sweden) and the Université Catholique de Louvain (Belgium). It is designed to deliver high quality education and training in the field of Public Health in disaster situations.

The Programme is a one year course sponsored by the European Union and involves thirteen associated universities and institutions around the world.

The Master has three components:

- Common Disaster Core Component
- Elective Track Component with two possible options (public health response to disaster or disaster epidemiology and research)
- Internship in one of the associated master centres and final Master's Thesis.

To be eligible for the EMMPHID master programme, applicants must hold a recognised primary degree in areas related to Health, Management and Administration, or Social Sciences (a minimum of three years' study at a university and of a minimum of 180 ECTS, or equivalent). Applicants must be proficient in English.

A number of scholarships (contribution to tuition fees and maintenance) are available.

All information and the online application are available at [www.pubhealthdisasters.eu](http://www.pubhealthdisasters.eu) or contact: Universidad de Oviedo International Graduate Centre, Plaza de Riego s/n, E-33003 Oviedo, Spain, tel: +34 98 510 49 17/ +34 98 510 49 18, email: [infopostgrado@uniovi.es](mailto:infopostgrado@uniovi.es)

The deadline for submitting applications to the 2013-2014 programme is 30th November 2012



## New SMART website launched

**A**CF-Canada has released a new version of the SMART website. Training material and website content is now available in three languages: English, French and Spanish.

Content includes and is organised as:  
Capacity building toolbox that comprises

- The SMART methodology manual (manual and sampling paper)
- The Standardized Training Package (STP) (modules and video)
- Emergency Nutrition Assessment (ENA) software (ENA software and hybrid Epi-Info/ENA software)

### Technical FAQs

SMART forum (online bulletin board where members can post questions and comments)

SMART calendar (where you can view or add SMART events)

The site also includes jobs available, a list of SMART trainees by country, and key resources.

Membership involves a simple online registration. Visit: <http://www.smartmethodology.org/>



## Urban Humanitarian Response Portal



**A**LNAP and UN-Habitat have recently launched an Urban Humanitarian Response Portal - a knowledge sharing platform, with a focus on disaster preparedness, relief and early recovery in urban crises. It fulfils a recommendation made by the ALNAP membership at the 27th Annual Meeting to bring 'scattered learning' about urban humanitarian response together in one place. It not only contains a growing collection of reports, evaluations, meeting documents and lessons papers related to humanitarian action in cities, but also information on upcoming events and a forum to share questions, opinions and ideas.

Those interested in urban humanitarian action are strongly encouraged to contribute to the Portal by submitting new documents or sharing their thoughts via the dedicated forum 'Humanitarian Response in Urban Crises' to ensure that the latest learning and information is available to the humanitarian community as a whole. The hope is that this Portal will help humanitarian practitioners in their work and foster learning around humanitarian response in cities.

Visit the Portal here: [www.urban-response.org](http://www.urban-response.org)

### About ALNAP

The Active Learning Network for Accountability and Performance in Humanitarian Action (ALNAP) was established in 1997. ALNAP aims to improve humanitarian performance through increased learning and accountability. It incorporates most of the key humanitarian organisations and experts from across the humanitarian sector. Members are drawn from donors, NGOs, the Red Cross/Crescent, the UN, independents and academics.

To keep up to date with ALNAP's work, visit [www.alnap.org](http://www.alnap.org)

### About UN-Habitat

The United Nations Human Settlements Programme, UN-HABITAT, is the United Nations agency for human settlements. It is mandated by the UN General Assembly to promote socially and environmentally sustainable towns and cities with the goal of providing adequate shelter for all.

Visit <http://www.unhabitat.org>

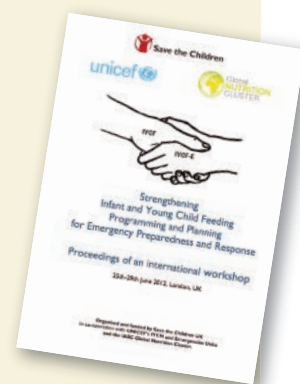
## Urban edition of Field Exchange: call for submissions

We are planning a special edition of Field Exchange in the first half of 2013 focused on nutrition and food security emergency programming in urban contexts. The 'emergency' scope includes chronic situations, preparedness and recovery and we will consider relevant experiences, research and news from development contexts.

We are gathering material for this now. Please send us any ideas/outlines/research or news that you would like to feature. Please also share this email with your colleagues or send us contacts that we can follow up.

Submit ideas, articles, research or news to: Marie McGrath, [marie@enonline.net](mailto:marie@enonline.net) or call: +44 (0)1865 249745

## Proceedings of UNICEF/GNC/SC UK workshop on IYCF in development and emergencies



**T**he report is now available of a 5 day workshop on infant and young child feeding (IYCF) in development and in emergencies (IYCF-E) held from 25th-29th June, 2012 in London. The workshop was organised by Save the Children UK, funded and in partnership with UNICEF (IYCF and Emergency Units) and the Global Nutrition Cluster (GNC).

The overall objective of the workshop was to support agencies to improve non-emergency IYCF programming (essential emergency preparedness) and to inform development-sensitive IYCF-E programming. The workshop was attended by 67 participants representing international non-governmental organisations (INGOs), United Nations (UN) agencies, donors, academics, government, and independent experts. The workshop brought practitioners working on IYCF in both emergencies and development contexts together.

The specific aims of the meeting were to share experiences and challenges in IYCF and IYCF-E programming in different contexts, to disseminate IYCF and IYCF-E policies and capacity development tools, and to discuss recent developments in programming, assessment/M&E and coordination. Two days each were devoted to IYCF and IYCF-E respectively, with half a day spent on discussing the necessary "handshake" needed to bridge the emergency/development 'divide' that often exists. Action plans were developed through the course of the workshop and finalised in Day 5 (these will be followed up in 3-6 months).

The workshop opened with a review of the global situation on IYCF and IYCF-E and was followed by a participatory gap analysis on IYCF/IYCF-E programming and 'infrastructure'. There were common areas of IYCF/IYCF-E concern in terms of poor understanding of M&E and indicators, lack of programme funding, lack of policy/poor implementation, lack of understanding of what constitutes 'good' IYCF/IYCF-E programming and few trained frontline staff.

The workshop highlighted that for IYCF, key policies, strategies, design and implementation tools for IYCF recommended interventions are now available. The Programming Guide on Infant and Young Child Feeding (2012) by UNICEF was highlighted as a key resource for IYCF programme planning and implementation. While IYCF-E is also supported by a variety of policies, strategies, guidelines and resources, it still lacks key tools to support implementation.

Four key issues arose through the workshop with a call for immediate commitment and action:

- There is a need to explore how to better link IYCF and IYCF-E in practical terms that includes lesson learning from different contexts and developing linkages between emergency and development programming.
- There is a need for practical 'how to' guidelines – including agreed core M&E indicators – for IYCF-E programming in different contexts. This gap is limiting programming and funding
- There is a need to better 'package' IYCF-E to encourage more internal (agency) buy-in from senior management and communications/advocacy teams, as well as from donors. As an action from the workshop, a letter was sent to a number of bilateral donors highlighting this (and included in report annex)
- There needs to be clarity about role and responsibilities for moving the IYCF/IYCF-E agenda forward taking into account existing UN mandates, agency expertises and capacities.

Finally, the report recommends the development of a strategy on IYCF-E setting out the key actions needed and timeframe to aid in coordinating efforts and to serve as an advocacy tool. It concludes with a recommendation for an urgent meeting between key players in order to discuss outcomes of this workshop and to frame this strategy.

For more information, contact: Ali Maclaine, SCUK,

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Access the full report at: <http://www.unicef.org/nutritioncluster/>



## Resources to support programming for older people

HelpAge International have produced a variety of resources to support good practice regarding the elderly in emergencies including guidance on including older people in emergency shelter programmes, and a checklist on preparing for an emergency.

In addition, Help Age's new Helping Older People in Emergencies (HOPE) training programme provides humanitarian practitioners with the tools and knowledge to ensure older people are included in their programmes. Training is targeted at experienced humanitarian practitioners and policy makers who are responsible for supporting, planning or managing humanitarian response. Trainings have taken place in Nairobi (June 2012), Gaza city (July 2012), Goma, DRC, Bangkok, Thailand, Madrid and Barcelona, Spain (October 2012) and are scheduled for Dhaka, Bangladesh (14 & 15 November, 2012) and London, UK (29 & 30 November, 2012).

For more resources and information, contact: Pascale Fritsch, email: [PFritsch@helpage.org](mailto:PFritsch@helpage.org) or visit: <http://www.helpage.org/resources>

## New Global Food Security journal

A new journal – Global Food Security – is launching in 2012. The journal aims to provide readers with:

- Strategic views of experts from a wide range of disciplinary perspectives on prospects for ensuring food security, based on the best available science, bridging the gap between biological, social and environmental sciences.
- Reviews, opinions and debates that synthesize, extend and critique research approaches and findings on global food security.

The journal will publish research on the following elements of food security:

- Availability (sufficient quantity and quality)
- Access (affordability, functioning markets and policies)
- Nutrition, safety and sanitation
- Stability and environment (resilience and ecosystem services)

Issues of the publication will contain several papers that address specific, timely topics of importance to food security. Authors will be recognised authorities in their field. It will focus on interdisciplinary aspects of food security challenges at national to global scales, and will look to challenge current paradigms, seeking to provide 'out-of-the box' thinking on global issues.

The first edition (October 2012) features 11 articles on lessons learned from the Somalia 2011 famine.

Visit: <http://www.sciencedirect.com/science/journal/aip/22119124>

Settlements of new arrivals  
in the outskirts of Dadaab



## Personal experiences of working during the Horn Africa crisis in 2011



Interview with Méloody Tondeur and Sarah Style

*The following is based on a face to face interview conducted by Carmel Dolan (ENN) with Méloody Tondeur and Sarah Style, two team members of an ENN technical assistance project to UNHCR, who oversaw surveys in Dadaab camps in Kenya during the height of the crisis in 2011. It describes their personal experiences in carrying out the surveys and their views on approaching large scale emergency refugee situations. Both Méloody and Sarah now work with UNHCR.*

### Background

Drought conditions in the Horn of Africa, particularly in Somalia, decimated the 2011 crop and livestock production causing dramatic increases in food prices. Prolonged insecurity in Somalia also led to a significant reduction in international food assistance and in July and August 2011, the United Nations (UN) declared famine in certain regions of the Horn of Africa. During the build-up, large numbers of Somali's moved across the Kenyan border to seek assistance in the long-established Dadaab refugee camps. At the peak of the crisis, over 1000 refugees arrived in the camp each day. In August 2011, it was agreed that a nutrition survey was needed to assess the magnitude of the nutrition and mortality situation. Coincidentally, August was the scheduled time of the routine annual survey in Dadaab.

The ENN has been collaborating with UNHCR over the last two years providing technical support and developing guidance for conducting standard nutrition surveys. Two members of the ENN technical assistance team at the time (Méloody Tondeur and Sarah Style) went to Dadaab for a 6-8 week period to support the design and implementation of the surveys and at the same time, help strengthen the capacity of UNHCR and implementing partner's (IPs) in executing surveys. This article describes their more personal experiences shared in their ENN interview.

### What were you expecting and what were your early impressions of Dadaab?

Dadaab was the first exposure to a large scale refugee situation for both Méloody and Sarah and, for Sarah, her first refugee camp experience. Prior to departing, Méloody had regular contact with the UNHCR Senior Nutrition Associate (Gloria Kisia) based in Dadaab and both were able to get useful insights from reading situation and survey reports, as well watching the news and seeing images of the camps and the camp outskirts. For Sarah, the main camps were as she had imagined but the environment in the outskirts of the camp was harsher than she had expected in terms of the strong winds, dust, land contamination by human faeces and limited latrines.

### How would you describe the preparations and process you undertook for carrying out the surveys in Dadaab?

Four weeks prior to their arrival, preparations were undertaken by Gloria on the ground with the assistance of Méloody, including putting together a pre-survey schedule, compiling survey questionnaires, and organising survey logistics. Through other project activities, Méloody had already met and discussed the situation via email and in person with the UNHCR nutritionist and other survey staff with whom they would be closely working. Once in Dadaab, another two weeks of planning was undertaken by



Mélody, Gloria and Terry Theuri (a UNHCR Nutrition and Food Security consultant deployed to Dadaab during the crisis) with key staff from implementing partners (Millicent Kavosa from IRC). They were joined for two weeks by a third ENN team member from the UNHCR technical assistance project (Andy Seal) to help design and plan the survey. Together, the team went to the three main camps which make up Dadaab to understand the lay-out (for sampling purposes) and the set-up of the outskirts, talk to the nutrition programme staff to understand food distribution and feeding schedules so that the hours could be modified during the survey to avoid absentees, to look at equipment and quality of equipment and to discuss the referral process for children and women needing treatment.

Mélody and Sarah felt that an enormous advantage in Dadaab with respect to the survey was that some of the key staff (2 from UNHCR and 1 from IRC) had considerable survey capacity and experience and had received prior training on the survey guidelines as part of the UNHCR/ENN collaboration. In this respect, Dadaab was well able to accommodate emergency survey work of this type. In addition, the staff were completely open to strengthening their skills in this area. Even though the demands on the survey teams were enormous, capacity strengthening was carried out (5 days of training involving 4 days in the classroom and 1 day in the field). Ensuring quality was a major focus during the training sessions and as data were collected. In total, 80 surveyors were trained.

A survey was conducted in each of the three main camps as is usually done every year in Dadaab. This year, a fourth survey was also conducted in the outskirts of one of the camps. Each of the four surveys had five survey teams of 4 people each (1 team leader, 2 enumerators and 1 translator), supported by survey team coordinators and supervisors. There were daily feedback sessions in the mornings. The evenings were spent entering data and checking questionnaires so that the UNHCR/ENN coordination team could inform the survey teams of any improvements needed throughout the survey.

Mortality data was also collected (not done in recent surveys in Dadaab due to a well functioning Health Information System (HIS) system monitoring mortality).

#### *Were there specific methodological challenges?*

Mélody and Sarah described how one of the main challenges during survey planning was to decide which data to obtain from the new arrivals and which from the long-standing refugees, as agencies needed information on both populations to aid decision making. Because the new arrivals were in the main camps (thought to represent 10-20% of the main camp population) and in the outskirts (where the entire population was new arrivals), doing one survey covering both new arrivals and long-standing refugees would have required a stratified survey design which would need a lot of work. Hence the decision was taken to survey one outskirts area in addition to the three main camps to obtain data on new arrivals.

The decision to survey the outskirts, where new arrivals from Somalia would congregate

waiting to be further assimilated into the newly established camps, created its own sampling challenge, since there were no structures (like the camp blocks) to delineate clusters. The team innovated by using spatial random sampling with GPS and to their surprise, this ended up being easier to administer than anticipated. For sampling the outskirts, the perimeter was mapped using a GPS and the tracks and waypoints uploaded and visualised using Google Earth (version 6). Random spatial clusters were then allocated to the outskirts area map using a grid overlay. Cluster start points were subsequently located by survey teams using GPS handsets and second-stage sampling proceeded using proximity sampling.

A third challenge was the decision to include children from 5 - <10 years of age using MUAC when there is no international agreement on the cut-off point to use for defining malnutrition. In this case, a MUAC cut-off of 14cm and the presence of oedema were used for referral during the survey and then weight and height were taken at the health posts for further screening.

Further, Mélody and Sarah added, the population data wasn't reliable. Due to the influx of refugees, there was a significant backlog of unprocessed registrations at the time of the survey planning with refugees settling in the outskirts and in the main camps. This meant it was difficult to gather accurate population figures and derive demographic data for survey planning, including the % under five and average household size. Quota sampling was therefore used and this presented some of the teams with difficulties, as they had been used to fixed household sampling (e.g. surveying 13 households a day and not counting the number of individuals in each target group surveyed).

Another challenge was in keeping the household questionnaires reasonably manageable to ensure quality of the information collected. Nonetheless, the questionnaires were quite long and complex compared to previous years (largely because of the addition of the mortality data and the measurement of the children 5-<10 years) making it difficult for some of the survey teams to administer.

#### *Were there other unforeseen challenges?*

Unfortunately an MSF staff strike coincided with the survey timing and forced last minute changes to the survey so that two surveys had to run concurrently followed by another two. This put the team under considerable time and logistical pressure.

Also, the survey teams found it hard to keep track of quotas of individuals for the questionnaires meaning that some teams needed a lot of support for data collection. Coordinators had to spend entire days with some teams to keep them on track to complete one cluster in a day. Mélody and Sarah described how there was little leeway to absorb any delays for several reasons including budget, logistics and because the surveyors had to resume their regular jobs at the health clinics and at the community level. The pressure was on with the outskirts survey especially, because of the new arrivals being relocated into newly established camps right as the survey was happening.

#### *How did you involve key stakeholders in the survey?*

A great deal of work went into ensuring that the key stakeholders (UNHCR, WFP, UNICEF, IPs and other agencies working in the camps) were fully part of the decision making about the survey design, choice of indicators and questions contained in the household questionnaire. Survey meetings and correspondence was coordinated by the Dadaab Camp UNHCR Senior Nutrition Associate (Gloria).

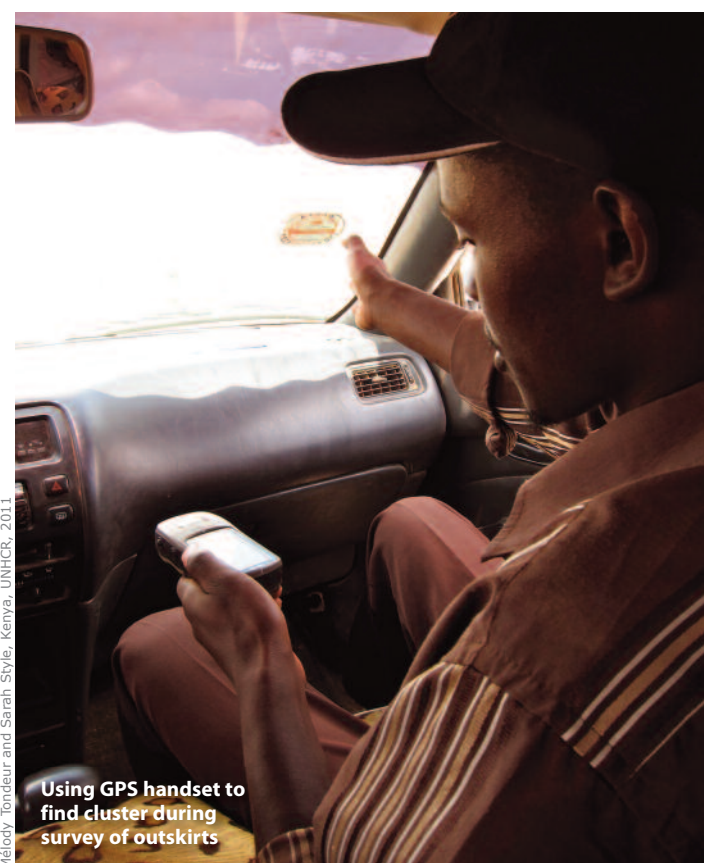
In Dadaab, an efficient model for nutrition surveys had been implemented in previous years and hence the same model was used. Each IP was designated to survey the camp they work in and had clear roles and responsibilities, survey supervisors, etc. Some partners took on the role of helping with the pre-survey training, supervision and data entry / data quality checks. Overall, the process was successful and there was considerable good will and coordination to enable the surveys to take place as smoothly as possible.

#### *How did you record and store the data?*

ENA for SMART software (Delta version, June 20th 2011) was used by the supervisors and coordination team to enter and analyse the anthropometric and mortality data, and a system of double checking was used to verify all data entered. All other data were doubled entered by four clerks using Epi Info Software (CDC, version 3.5.1) and data analysis was done using ENA for SMART and Epi Info software. Double entry was essential since data entry clerks could not be supervised during the day by the coordination team while the survey was on-going.

#### *How quickly were you able to analyse the data and feedback the findings?*

This was a major priority so the data entry personnel entered the data in parallel to the data collection to speed up the process of feedback. Three nutritionists (2 from UNHCR and 1



Using GPS handset to find cluster during survey of outskirts

Mélody Tondeur and Sarah Stiles, Kenya, UNHCR, 2011



from ENN) were involved in analysing the data for different indicators and a fourth from ENN, for training on data analysis and management, as well as oversee and double check all the results. Further, the survey report was split into separate sections and the writing/reporting allocated to the four main nutritionists, with one of the nutritionists having the responsibility to oversee the whole report writing process.

Impressively, the GAM/SAM results in children 6-59 months were fed back 'informally' 2-3 days after the surveys (by email). The results on all indicators were fed back officially 2 weeks after the surveys were completed, to allow partners to start working on the recommendations and new interventions. This was done through a full partners meeting. The final and detailed report was disseminated two months following the partners meeting.

***Were you surprised by any of the findings and were there any significant unanswered questions around the findings?***

In general, the malnutrition results were really high, even in the main camps. The team had predicted these results from rapid assessments and screening results but the results from the outskirts were higher than assumed. Partners were especially alarmed with the GAM prevalence levels (38.3% (32.1-44.8%) in the outskirts, 17.2% Hagadera, 22.4% Ifo, 23.2% Dagahaley). The mortality rates were as expected in the main camps and quite low, however they were very high in the outskirts (Crude death rate 1.23 (0.73-2.06), U5 Death Rate 3.02 (1.72-5.24)). Coverage of the nutrition programmes (SFP and OTP) was found to be very low though the reasons for this were not clear and considering also that nutrition surveys are not the best way to establish levels of coverage. In addition, screening in the community was based on MUAC and oedema whereas admission was based on MUAC, oedema and weight for height z score (WHZ). This meant that estimates of coverage varied depending on if WHZ was included or not.

Mélody and Sarah weren't surprised by the survey results for children in the 5-<10 year old category in the outskirt survey (MUAC <14 cm was 18.3% in the outskirts compared to 6.8-12.2% in the other camps) – screening of new arrivals had indicated this and they remembered being shocked by how thin they witnessed the older children to be during the outskirts survey. It was evident that not only children 6-59 months, but also older children had been affected by the crisis. However knowing what to do with these children was more of a challenge given the limited knowledge and research available on this age group.

There was a significant decrease in levels of anaemia in children and women, which was a very positive finding for UNHCR, WFP and the IPs who had been implementing anaemia control measures in Dadaab in previous years.

***What new things did you learn from your experience in Dadaab?***

For Sarah, this was the first time she had taken part in a large scale survey at the height of such a large scale emergency and two key lessons stood out ; first be flexible as in such situations things are constantly changing and second, being able to switch off and to find ways to

relax. Mélody echoed the latter and emphasised the importance of taking time for yourself, getting a good night's sleep and either read or watch a movie before going to bed to help switch-off.

For both Mélody and Sarah, having the opportunity to work on a daily basis with the UNHCR highly experienced and long standing nutritionist based in Dadaab, as well as the other UNHCR, ENN and IP nutritionists, was vital to understand and deal with the context –both for the survey design, data collection and interpretation of the data. All members of the coordination team complemented each other well, each bringing their own knowledge, skills and experience.

***What advice would you give to others going to support large-scale surveys in complex environments such as Dadaab?***

Both Mélody and Sarah would recommend to be very organised and ensure that the relevant support within the camp is also there. It is very important to consider the security advice given and to keep track of the security situation on daily basis.

Contact people ahead of time so you arrive and know what you need and know what questions you have. Compile as many background reports as possible as these tend not to be readily available and avoid asking questions on the ground when you already have access to the information. Also, it helps to keep notes of what you're learning so you don't have to keep asking the same questions. This reduces the pressure on field staff who are already very busy and can end up 'repeating information for the benefit of many visitors'

Capacity building is possible in a large scale emergency situation. The ENN team were able to strengthen the capacity of key UNHCR staff and IP staff on how to execute quality surveys. Innovation is also possible, as together the team managed to solve the sampling challenge in the outskirts.

On a personal front, Mélody and Sarah emphasised you need to be fully prepared to live in difficult conditions (live in tents, share rooms with others, don't have your home comforts), work very long hours during survey implementation (average from 7am until 11pm) and to put aside other work demands so that the only focus is on the survey. Mélody did this by avoiding unrelated emails.

***Is there anything else you would want readers of FEX to know about your experiences?***

Both concluded that the Dadaab experience is a good example of the importance of preparation for a nutrition survey during an emergency situation, i.e. in this case, waiting and working to ensure there was adequate information from rapid assessments and screening to inform sample size, survey design and the content of the questionnaire.

Despite being a very challenging context to work in – both professionally and personally – it also a rewarding one, reflected in the fact that Mélody and Sarah have continued to work with UNHCR and remain full of enthusiasm!

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A child being assessed (appetite test) at a health facility offering treatment in Monrovia, Liberia

# Quantity through quality: Scaling up CMAM by improving programmes access

By Saul Guerrero & Maureen Gallagher



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Ben Allen, Liberia, 2011

## Background

ACF International's strategy for scaling up nutrition programming is underpinned by one simple idea: we are not reaching enough of the affected population. According to the 2008 Lancet series, only between 5%<sup>1</sup>-10%<sup>2</sup> of children suffering from acute malnutrition are receiving nutritional care. To deal with this, ACF International has committed to a gradual process of scaling up interventions to reach an estimated 500,000 children per annum by the year 2015. In 2010, the organisation reached just under 225,000 children through its programmes. To meet its objectives, the organisation must effectively double its current caseload. To achieve this, ACF has placed considerable emphasis on securing the necessary political will and civil society participation at national and international level to enable growth and expansion of services<sup>3</sup>. Internally, it has also placed great emphasis on partnerships and capacity building as a means of enabling programmes to expand and reach new geographical areas.

All in all, this represents an outward vision of growth, an approach that favours expansion over consolidation; the replication of existing approaches on the assumption that more of the same will deliver results. The implicit confidence in the performance of existing programmes is undoubtedly linked to the great strides made over the last decade with the decentralisation of care. By shifting from Therapeutic Feeding Centres (TFC) to CMAM, the organisation has laid the foundation for a significant increase in programme uptake. Yet, like many nutrition organisations around the world, ACF is gradually coming to the realisation that the shift in treatment approaches is no guarantee for success. There is now an increasing body of evidence showing that offering services, even closer to the communities, is not tantamount to improving access. Whilst the efficacy of the CMAM model and protocol is

now firmly established, its effectiveness is still dependent on the quality of programme implementation by (or with the support of) NGOs, as often Ministries of Health (MoH) have limited resources for nutritional activities.

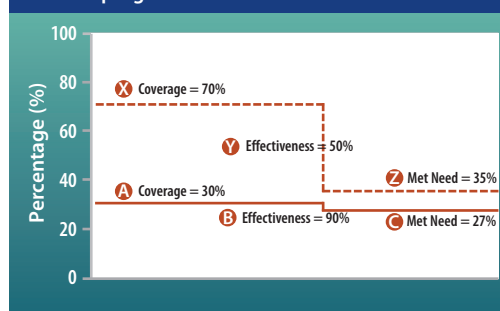
Scaling up must therefore start by consolidating our work, by finding ways of reaching those that we are consistently excluding. The potential benefits of consolidating our work, or shifting to an inward approach for scaling up, has been conclusively established. If we were to increase our current coverage by 30% we would not only meet international minimum standards, but we could reach our target of 500,000 children per year without opening a single additional programme. We do not yet have a generic recipe for effective CMAM programming, what we do have is sufficient evidence to start developing a new approach that focuses more closely on ensuring programme effectiveness. The aim of this paper is to use some of the available evidence to propose a clear and specific definition of effective CMAM programming. But it also seeks to go further. By reviewing results of current trends in programming, it sets out to identify key steps for consolidating ACF's existing programmes, and to outline the programmatic and organisational transformations that these would have for ACF.

## What's in a number? Defining quality in nutrition programmes

The aim of public health nutrition interventions, such as CMAM, is to meet the needs of the largest possible proportion of an affected population<sup>4</sup>. There are two sides to the question of needs met. On the one hand, there is the quality of care or efficacy of treatment. This is generally assessed through standard nutrition indicators including cure, death, defaulter and non-responder rates. Although these indicators vary from context to context and according to a number of factors (including severity at presentation, level of compliance, implementation approach, etc), there is now ample evidence to support the idea that the efficacy of CMAM treatment protocols is close to 100%<sup>5</sup> in a controlled environment. These efficacy indicators, however, give us only a partial view of the impact of the programme on the children reached. The other part of the needs met equation, the one often missing in our analysis, concerns the number of affected cases that programmes do not reach. The quality of nutrition programmes must be determined by a combination of the treatment efficacy outcomes vis-a-vis the proportion of the affected population being reached (coverage).

Coverage has been an integral component of humanitarian evaluative frameworks, with both OECD-DAC and ALNAP<sup>6</sup> recommending that humanitarian agencies "...present an estimate of the proportion of those in need covered, expressed as a percentage, rather than an absolute number". The importance consistently attributed to coverage is exemplified in Figure 1.

Figure 1: Coverage vs. effectiveness in nutrition programmes



When programmes with coverage of 30% (A) successfully cure a high rate of children (B), the proportion of needs met is still low (C). When programmes with high coverage (X) cure only half of the admitted cases (Y) the proportion of needs met is higher (Z).

Since they first appeared in 2004<sup>8</sup>, the SPHERE Standards have included specific coverage indicators for nutrition interventions in rural (50%), urban (70%) and camp environments (90%). The timing of the introduction of these new standards was important. Prior to the introduction of the CTC model in the late 1990s, inpatient programmes rarely reached over 25% of the affected population<sup>9</sup>. But by 2001, as CTC (and its successor, CMAM) became more common, NGOs consistently showed that it was possible for programmes to reach up to 70% coverage. This was taken as a sign of the intrinsic quality of the approach, rather than as a partial reflection of the active and direct involvement of NGOs in its implementation.

## Great expectations: ACF programme coverage performance against international standards

ACF has a strong history in supporting coverage estimations (see Box 1). Between February 2010 and February 2012, ACF has carried out 15 coverage surveys in 11 different countries, with more planned for the short and mid-term future. Whilst the contexts have varied significantly, regular coverage surveillance has provided us with two valuable areas of information: coverage diagnosis and programme diagnosis. Together, these two areas of information provide clear ideas of where the problems and the solutions lie, offering practical recommendations for improving/ensuring the quality of programmes.

Based on the coverage monitoring data collected since 2007 (Table 2), on average ACF programmes achieve coverage of around 30% of the total affected (SAM) population<sup>10</sup>; for every three acutely malnourished children in our areas of operation, only one receives treatment through our programmes. None of the programmes surveyed so far has met the SPHERE minimum standards (>50% for rural areas, >70% for urban areas, >90% for camps). The comparison against SPHERE standards may only be relevant to some of these programmes which were implemented (directly by ACF)

<sup>1</sup> Horton et al (2010). Scaling Up Nutrition: What Will It Cost? (World Bank, Directions in Development/Human Development, 2010, p.19). This is based on the estimations of the authors that only 1 million of the total 19 million children suffering from SAM (c. 5%) are receiving treatment.

<sup>2</sup> Based on UNICEF's more recent estimations (PD-Nutrition Section E-Bulletin, Issue 1, October 2012, p.2) the actual number of children receiving treatment is closer to 1,961,772 which suggest that the proportion of cases receiving treatment could be closer to 10%.

<sup>3</sup> ACF International, (2010). ACF International Strategy 2010-2015

<sup>4</sup> Needs based on SAM caseload as defined by National Nutrition Protocols

<sup>5</sup> In controlled settings, in uncomplicated incident cases with MUAC at or just below admission criteria/mild oedema.

<sup>6</sup> ALNAP (2006) Evaluating humanitarian action using OECD-DAC criteria: an ALNAP guide for humanitarian agencies (Over-seas Development Institute, London, March 2006, p. 38-39)

<sup>7</sup> Adapted from Sadler, K, Myatt, M, Feleke, T and Collins, S (2007). A comparison of the programme coverage of two therapeutic feeding interventions implemented in neigh-

bouring districts of Malawi (Public Health Nutrition, April 2007, 10(9), p.912)

<sup>8</sup> The SPHERE Project (2004). Humanitarian Charter and Minimum Standards in Disaster Response (First Edition, 2004, London, p.39)

<sup>9</sup> Vautier, F (1998). Selective Feeding Programmes in Wadajir: Some Reasons for Low Coverage and High Defaulter Rate (Field Exchange, Emergency Nutrition Network, Issue 5, p.17). Coverage calculated indirectly (using prevalence data against population estimates).

<sup>10</sup> All figures refer to point coverage.



**Box 1: A little history of ACF and coverage estimation**

The introduction of international coverage standards for nutrition programmes raised the need for a reliable means by which to measure coverage. Indirect methods, using population estimates and prevalence were unreliable, and a more direct method was needed. Since direct means for measuring programme coverage were first developed by Valid International and their partners in the early 2000s, ACF has increasingly supported their testing, development and introduction into regular programming. The first method, the Centric Systematic Area Sampling (CSAS) approach was first used by ACF in 2007 to determine programme coverage<sup>11</sup> in Burundi, Uganda, and Sudan. In 2008, ACF became one of the first organisations to support Valid International in piloting the Semi-Quantitative Evaluation of Access & Coverage (SQUEAC) method, designed to make coverage surveillance easier, faster and less-resource intensive. Since 2010, the use of the new SQUEAC methodology has enabled the organisation to systematically monitor and diagnose programme coverage.



A community volunteer screens children in the community in Yobe State, Nigeria

**Table 2: Coverage of ACF-supported nutrition programmes (2010-2012)**

Country	Location	Date	Coverage
Burkina Faso	Tapoa	Feb 2010	21.8%
Chad	Kanem	Dec 2010	27.1%
Burkina Faso	Tapoa	Mar - Apr 2011	17.6%
Mauritania	Guuidimaka	Mar - Apr 2011	33.0%
Liberia	Monrovia	Feb - Apr 2011	24.8%
Mali	Gao	Jul 2011	35.4%
Nigeria	Yobe	Aug 2011	33%
Chad	Kanem	Sep 2011	36.4%
Chad	Bahr el Ghazal	Oct 2011	34.1%
South Sudan	Gogrial West	Oct 2011	44.7%
South Sudan	Aweil East	Nov 2011	45.5%
South Sudan	Twic	Dec 2011	27.3%
Myanmar	Maungdaw	Nov - Dec 2011	40.7%
Haiti	Haut Artibonite	January 2012	12.4%
Sierra Leone	Moyamba	February 2012	12.1%

under emergency conditions. The remainder of these programmes have been implemented in partnership with (i.e. indirectly through national MOH). The SPHERE standards represent a set of benchmarks that have proven difficult to attain by integrated programmes led by MoH. This has resulted in the commonly held belief that integrated CMAM programmes run by MoH are intrinsically limited by infrastructure and resources, and are thus naturally unable to meet previous CMAM outcomes and standards. Whilst integrated CMAM programmes are different, focusing on the need for new standards for integrated programmes (or provision of external inputs to support achieving standards) represents an easy way out. What this argument effectively does is remove the pressure from NGOs to understand the factors affecting the performance of integrated CMAM programmes. This in turn often leads to the creation of artificial programme conditions – including additional staff, financial incentives and supply systems – that help boost performance, but does little to strengthen local health systems.

The challenges faced by integrated CMAM programmes are very real: beneficiary populations, for instance, have a pre-conceived idea of what health facilities can and cannot offer, about the kind of (staff-patient) treatment they are likely to receive there, including official and/or unofficial costs of treatment. The location (often limited and sparse) of health facilities in a given area means that reaching those in need is generally determined by the proximity offered by the MoH infrastructure chosen as service delivery units for CMAM services. In addition, the resources (human and financial) available to MoH to carry out the supporting functions needed by any successful nutrition programme are very often not there. ACF has sought to address this, but the coverage performance of these programmes suggests that the current allocation of technical support and resources to support integrated programmes is based less on needs and gaps of health systems and more on the traditional organisational clinical expertise and focus on treatment efficacy. Meeting a higher proportion of the needs, and reaching the expected 500,000 SAM children a year, will require that ACF looks beyond clinical outcomes and addresses key factors for achieving high quality programmes.

### Key factors for achieving high quality nutrition programmes

Part of the answer to the question of where support is needed to improve the quality and performance of our programmes is provided by the coverage assessments themselves. In 2007, the ACF Uganda nutrition team set out to prove that programme coverage could be increased through the strengthening of community mobilisation activities, including sensitisation, case-finding and follow-up. The programme succeeded in increasing coverage by more than 12% in 12 months<sup>12</sup>. More recently, in December 2010, a coverage assessment carried out in Kanem (Chad) once again highlighted the need for improved community engagement. By taking on board the recommendations from this assessment, the programme was able to increase its coverage by over 9% in 10 months. Together, these two experiences prove that within a relatively short period, programmes can positively influence their coverage by addressing some of the bottlenecks<sup>13</sup> affecting access and that community mobilisation can play a pivotal role in achieving this.

Since then, our understanding of the factors affecting programme performance has increased through available data from within and without the organisation. A review of 12 CMAM programmes published in 2010 concluded that programme coverage was directly affected by 1) the degree of rejection amongst referred children, 2) the level of awareness (about the condition and services) amongst the population, and 3) the distance between targeted communities and service delivery points<sup>14</sup>. The recognition and incorporation of mid upper arm circumference (MUAC) as part of national nutrition protocols for admission in many countries has significantly reduced rejections in programmes<sup>15</sup>. The other factors, however, continue to negatively impact programme performance. A pilot study carried out in 23 health centres by Concern Worldwide in Ethiopia identified lack of awareness about the programme as the single most important barrier affecting the performance of the integrated CMAM programme, preventing any of the facilities evaluated from reaching more than 50% of the affected population<sup>16</sup>.

ACF's recent surge in coverage surveillance has created a body of evidence that corroborates these conclusions (see Table 3). In all coverage surveys carried out by ACF since February 2010, awareness about programme and/or malnutrition has been identified as the primary reason(s) for non-attendance. Simply put, the large majority of people in the communities where ACF works remain unaware of the existence of CMAM services, or do not perceive it as the solution to the condition affecting their children. The evidence suggests that the current approach to implementing and supporting integrated-CMAM programmes is inappropriate to deliver the promise of greater access that the CMAM model was built on. As the CMAM approach continues to be scaled-up and rolled out, it is more pressing than ever to revisit and review the current model involving health systems, communities and nutrition organisations. This does not mean starting from scratch; the wider public health sector has been tackling these issues for years, gathering valuable lessons and experiences that can be brought into the fold.

### Rethinking the CMAM service delivery model and the role of nutrition organisations

The role of humanitarian agencies has shifted significantly since the direct interventions of the 1970s and 1980s. Organisations involved in public health programmes have gradually scaled up by working in partnership with local authorities. For nutrition organisations like ACF, this has represented a shift from direct implementation to "focusing on strengthening health systems' own

<sup>11</sup> As defined by National Nutrition Protocols and corresponding admission criteria.

<sup>12</sup> Doledec, David (2008). Impact of community mobilisation activities in Uganda (Field Exchange, Emergency Nutrition Network, Issue 34, October 2008, p. 15)

<sup>13</sup> Not all bottlenecks can be addressed rapidly or through community mobilisation. For a more detailed discussion, see Tanahashi, T (1978). Health service coverage and its evaluation (Bulletin of the World Health Organisation, 56 (2):295-303.

<sup>14</sup> Guerrero, S et.al (2010). Determinants of coverage in Community-based Therapeutic Care programmes: towards a joint quantitative and qualitative analysis (Disasters, Overseas Development Institute, April 2010, 34(2); 571-585)

<sup>15</sup> In countries where MUAC has not been incorporated as an admission criterion, such as Burkina Faso, rejection continues to be an important barrier to access.

<sup>16</sup> Schofield, L et.al (2010) SQUEAC in routine monitoring of CMAM programme coverage in Ethiopia (Field Exchange, Emergency Nutrition Network, April 2010, 38: p. 35)

<sup>17</sup> ACF West Africa Strategy, 2011-2015, p.6.

<sup>18</sup> CMAM Integration Guide draft, Feb 2011





Samuel Hauenstein Swain, Haiti, 2011

Training session with health staff in Port-au-Prince, Haiti

capacities to treat severe acute malnutrition<sup>17</sup>. The health system strengthening approach – with nutrition as an entry point – often varies between nutrition organisations as well as between ACF missions<sup>18</sup>. Generally speaking, however, there are some fundamental areas for support:

- Supporting the coordination & creation (or review) of technical frameworks including national nutrition policy, protocols, guidelines, and training manuals, as members of National Technical Working Groups.
- Supporting strengthening capacity efforts (i.e. training, coaching, in some cases additional human resources (HR)) for staff involved in the management and implementation of CMAM activities, including national/regional/local managers, health facility staff and outreach workers.
- Strengthening/supporting supply chain management, including systems for forecasting, requesting and distributing essential drugs and/or ready to use therapeutic food (RUTF). Though these areas remain key to supporting the integration of CMAM into national health systems, the performance of integrated-CMAM programmes continues to falter. Addressing this requires a rethink of the present and future of the CMAM service delivery as part of the health system and the role of nutrition organisations like ACF in this process.

*Consolidating experiences in health system strengthening*

What is ACF’s CMAM health systems’ strengthening approach? With so many varying integration definitions and approaches between ACF missions, ACF is in the process of defining a clear position and model on the key factors that ensure ownership, performance and sustainability of integration of CMAM into routine health services. As health systems vary from country to country, one model cannot fit all, and it becomes important to learn from our existing experiences to see where we are, and to define a CMAM institutionalisation framework that is adaptable and replicable within different health systems. The emphasis of such a framework should consider all key elements for successful treatment yet maintain the existing health system as central to decision making.

Since 2009, a CMAM Integration Guide has been under development by ACF. The success

of such a guide rests on its ability to capture experiences from across a wide range of contexts, and in particular, on its capacity to identify successful approaches and provide practical guidance in some key areas, including:

- 1) **Operational Planning** (e.g. what is the case load? How is it managed? How many days of treatment are provided and why? What incentive systems are in place and why?)
- 2) **Human Resources** (e.g. who is managing treatment? How are health workers involved in treatment? Are additional staff supported? How? Why?)
- 3) **Logistics** (e.g. who does the supply management? What is the medicine provision system?)
- 4) **Training** (e.g. what is the training approach? Who conducts training? How is training impact measured?)
- 5) **Monitoring & Evaluation (M&E)** (e.g. who does data collection and how? What is the health system personnel involvement and understanding of M&E?)

In collecting such information in a systematic manner, ACF can consolidate experiences, identify areas for further research/analysis, and develop an operational framework/key principles for integration including timeframes and exit strategies. In this process, factors will be addressed through the health system strengthening lens, in exploring how different components fit into the six health system strengthening blocks – service delivery, supply, health workforce, financing, health information systems, leadership & governance<sup>19</sup>. This framework will provide a clear position and strengthen the capacity of ACF in the shift from direct implementer to advisor on health systems’ strengthening. This requires looking at nutrition as a specific treatment in a larger public health setting.

*Revising and prioritising community mobilisation*

Raising awareness, sensitisation and social marketing have long been recognised as key components of successful public health interventions. The challenge for programmes operating through health structures is the

limited or complete absence of financial resources allocated by most MoH to sensitisation and/or outreach activities. As a result, nutrition organisations like ACF have sought to replicate the same strategies used in NGO-implemented CMAM programmes, but without the financial compensation given to outreach workers. Instead, integrated CMAM programmes increasingly rely on existing community volunteers (generally linked to MoH) to deliver community mobilisation activities. Whilst this avoids creating parallel (and unsustainable) structures, this approach consistently faces operational challenges that ultimately define the (poor) performance of integrated CMAM programmes.

Improving community mobilisation to foster optimal programme coverage is less about addressing the individual challenges associated with working with volunteers<sup>20</sup>, and more about redefining the overall paradigm that places individual community members (volunteers) and sustainability at the heart of a community mobilisation strategy. The current working model behind community mobilisation in integrated CMAM programmes is based on two fundamental assumptions: community volunteers are the primary means by which to identify and refer cases, and the activeness of these volunteers must be maintained without incurring payments which cannot be sustained by the local health systems. The biggest weakness of this model is that it overestimates the importance of individual volunteers and underestimates the importance of collective community involvement. The proportion of admissions in CMAM programmes between those referred by individual volunteers and self-referred by communities themselves is such that a different approach is possible.

Integrated CMAM programmes should aim to create a critical mass capable of triggering a more sustainable dynamic between the community and the services provided (see Figure 2). At the start of CMAM activities, efforts should be placed on large-scale community sensitisation and case-finding. This would lead to volunteers referring the majority of

<sup>19</sup> WHO (2010). Monitoring the Building Blocks of Health Systems: A Handbook of Indicators and their Measurement Strategies.

<sup>20</sup> The first challenge relates to volunteer’s workload. Because of how important they are, many public health interventions incorporate the same cadre of volunteers into their outreach strategies. The result is an increasingly overburdened workforce capable of dedicating increasingly less time to each activity. The second challenge relates to the motivation of volunteers. The issue of motivation is linked to the issue of workloads and the issue of compensation. The tendency has been to motivate volunteers through the ad hoc provision of incentives, ranging from in-kind items (e.g. soap, sugar, t-shirts and bags) to cash payments. Whilst this commonly raises questions about sustainability, the bigger and more relevant issue is whether volunteers should be placed at the heart of community sensitisation and case-finding in the short, medium and long-term.

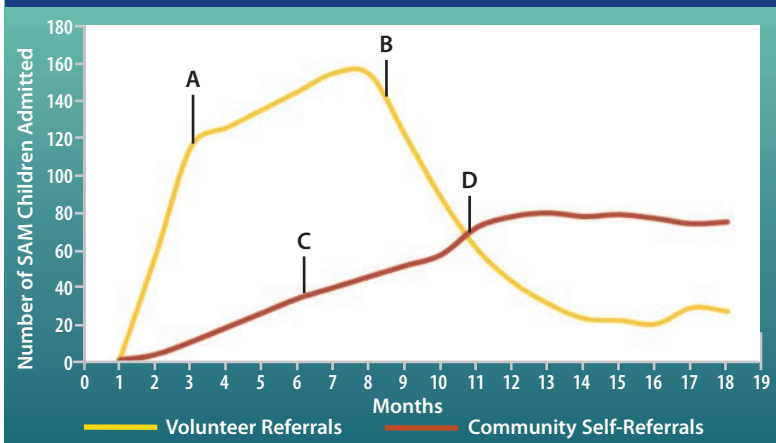
ACF-supported CMAM Programmes			Reasons for non-attendance								
			Awareness about the programme	Awareness about malnutrition	Distance	SFP-OTP Interface	Rejection	Carer Busy	Waiting Times at OTP	RUTF Stock-Outs	Husband's Refusal
Burkina Faso	Tapoa	Feb 2010									
Chad	Kanem	Dec 2010									
Burkina Faso	Tapoa	Mar - Apr 2011									
Mauritania	Guuidimaka	Mar - Apr 2011									
Liberia	Greater Monrovia	Feb - Apr 2011									
Mali	Gao	Jul 2011									
Nigeria	Yobe	Aug 2011									
Chad	Kanem	Sep 2011									
Chad	Bahr el Ghazal	Oct 2011									
South Sudan	Gogrial West	Oct 2011									
South Sudan	Aweil East	Nov 2011									
South Sudan	Twic	Dec 2011									
Myanmar	Maungdaw	Nov - Dec 2011									
Haiti	Haut Artibonite	Jan 2012									
Sierra Leone	Moyamba	Feb 2012									





Saul Guerrero, Ethiopia, 2008

Figure 2: Programme admissions by source



cases at the start (A). After a short period, motivation would naturally decrease leading to a drop in referrals by volunteers (B). In the meantime, the critical mass or momentum created by the rapid and visually clear recovery of SAM children would lead to a gradual increase in self-referrals (C). Over time, the number of cases that seek CMAM services spontaneously would overtake those referred by volunteers and can (assuming no significant barriers to access) lead to a sustainable and comprehensive model for ensuring programme coverage.

Achieving this dynamic would require, first and foremost, a prioritisation of community mobilisation activities as a key feature of the support provided by organisations like ACF. In practical terms, this would have implications for the profile of staff, and resources made available, to integrated CMAM programmes. Nutrition organisations like ACF should support MoH in the design, planning and implementation of sensitisation activities including mass media, traditional communication channels and the use of new technologies. It would also mean the involvement of nutrition organisations in the training and coordination of community outreach activities by volunteers. All efforts to increase community uptake of CMAM services, however, will need to be accompanied by the introduction of a service delivery structure capable of absorbing the increase in caseload, and capable of providing effective and appropriate care (including low waiting times, regular supply of RUTF, positive staff-beneficiary interface, high cure rates, etc). Experience has shown that it is this third element – capacity to deliver – that often proves problematic, in particular for integrated-CMAM programmes dependent on the availability and quality of existing health human resources and infrastructure.

#### Exploring alternative models of CMAM service delivery

The current model for integrated-CMAM programmes relies on the utilisation of health facilities for the delivery of treatment services. Based on this model, support organisations like ACF are tasked with identifying facilities capable of mainstreaming CMAM activities as part of their daily and/or weekly activities. The aim is then to introduce health system strengthening initiatives (e.g. staff training) designed to prepare these facilities for the arrival of newly identified SAM cases from the community.

This model represents a limited vision of health systems. Health systems can also include additional tiers such as Community Health Workers (CHWs). For many years, public

health interventions tackling TB, HIV/AIDS, Malaria and Family Planning have turned to this tier for the delivery of support and care. Many of the reasons that have led to the decentralisation of care reflect the same challenges currently faced by integrated-CMAM programmes: weak health facilities with limited and overworked staff, high caseloads leading to long-waiting times, stigma associated with the condition and high opportunity-costs linked to attendance.

There is encouraging evidence that community case management (CCM) of acute malnutrition is not only possible, but can effectively deliver high quality results. Existing evidence from Malawi has shown that the outcomes of treatment delivered by CHWs are comparable to treatment delivered at health facility level<sup>21</sup>. Available studies have concluded that “home-based therapy with RUTF administered by village health aides is an effective approach to treating malnutrition during food crises in areas lacking health services”.<sup>22</sup> Similar large-scale research also carried out in Malawi<sup>23</sup> concluded that “home-based therapy with RUTF yields acceptable results without requiring medically trained personnel”.

In 2011, Save the Children with the support of Tufts University, GAIN and Pepsico, carried out operational research on CCM of SAM in Southern Bangladesh. Unlike previous research, the Save the Children project measured both the efficacy of treatment and the coverage of the intervention. As in Malawi, the project achieved high recovery rates (92%), and low defaulting and mortality rates (7.5% and 0.1% respectively). The coverage of the programme (89%)<sup>24</sup> was found to be one of the highest ever recorded by a CMAM programme. Subsequent research has also shown that the project delivered high quality of care.

The Malawi and Bangladesh experiences show that a CHW-based service delivery model can be effective, but the evidence so far has been largely based in contexts with robust CHW networks or where additional resources have been made available to support these. The existence of a professional cadre of paid CHWs is no guarantee in itself. In 2005, the Ethiopian Government introduced the Health Extension Programme (HEP) designed to bring together all basic maternal and child health interventions, including nutrition. Yet, CMAM programmes have often struggled to incorporate nutrition activities (even case-finding alone) into a workload that initially included 17 different health packages, from HIV/AIDS to control of insects and rodents.

The evidence from Malawi and Bangladesh is promising, and the improved access and proximity offered by this approach could offer a way of decreasing pressure on health facilities (in high prevalence areas in particular), decreasing defaulting and improving programme coverage. More evidence is needed, from larger interventions, over longer periods of time and outside of the controlled environments (where there is large scale resource investment) of the Bangladesh and Malawi experiences. However, the real success of this type of CCM model may ultimately rest on the ability to implement such programmes as part of the much broader process of strengthening health systems and successfully linking CHWs, health facilities and the communities which they serve.

#### Conclusion

The shift away from centralised, inpatient care towards a community-based model was arguably one of the most important paradigm shifts in the history of public health nutrition. This shift, however, is far from complete; as nutrition interventions enter a new phase characterised by the integration of nutrition services into national health systems, the coverage and impact of these interventions is decreasing. Turning this around is possible, but to do so, nutrition organisations must adapt to the changing demands linked to health system strengthening and the prioritisation of community mobilisation/awareness. The question for organisations like ACF is not how to provide the same support in a different context, but rather, what kind of support does the new context require and how can this be provided. The answers to these questions are likely to fundamentally change nutrition support organisations – from their staff profiles to their strategic objectives – but in doing so it will make organisations better prepared to deal with a rapidly changing sector.

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<sup>21</sup> Amthor R, Cole SM and Manary M (2009). The Use of Home-Based Therapy with Ready-to-Use Therapeutic Food to Treat Malnutrition in a Rural Area during a Food Crisis. *J Am Diet Assoc.* 2009;109:464-467

<sup>22</sup> Ibid. p. 464

<sup>23</sup> Linneman Z et.al. (2007). A large-scale operational study of home-based therapy with ready-to-use therapeutic food in childhood malnutrition in Malawi. *Maternal and Child Nutrition* (2007, 3, pp. 206–215)

<sup>24</sup> Proportion of affected population, based on programme admission criteria, receiving treatment.



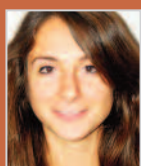
# Impact of cross-sectoral approach to addressing konzo in DRC

Marie Morgane Delhoume, DRC



Processing mill

By Marie-Morgane Delhoume, Julie Mayans, Muriel Calo and Camille Guyot-Bender



Marie-Morgane Delhoume is an agricultural engineer specialising in agro-development of tropical regions. She led the 2011 impact study of ACF-USA's Integrated

Programme for the Eradication of Konzo in the Territory of Kwango in DRC.

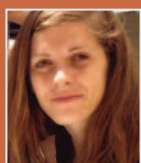


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From December 2009 to October 2011, Action Against Hunger (ACF-USA) implemented a 22-month long intervention in the Bandundu province of the Democratic Republic of Congo (DRC) addressing several factors underlying the konzo epidemic affecting the population of Kwango district (see Figure 1). The 'Integrated Programme for the Eradication of Konzo in the Territory of Kwango in DRC' project was financed by the European Union (EU) Food Facility. It aimed to eradicate the disease through a cross-sectoral approach that focused on nutrition education and training, dietary diversification, improved water access and agricultural processing. A total of 22,000 households are estimated to have benefited from these activities. The project was implemented in 396 villages in the Territory of Kwango.

Prior to implementing the project, ACF conducted a baseline study<sup>1</sup> in collaboration with the Ministry of Health (MoH)'s PRONANUT or *Programme National de Nutrition* in DRC in 113 villages, across 51 health areas and 11 health zones. A total 2,388 suspected konzo cases were screened and 2,218 were confirmed. The average incidence of konzo was 1.07%. Among confirmed cases, 83% were located in savannas, 1% in hillside areas and 4% in valleys. Kahemba health zone was found to harbour the highest number of confirmed cases (1,639), and placed among the top three zones for incidence (2.08%) largely due to its density of population and associated risk factors.

Local beliefs and traditional customs were found to influence strongly the incidence of konzo in the area. Local eating customs that favour the male head of household were noted as likely contributors to heightening the exposure of women and children to konzo. There was a widely held belief that the disease is caused by black magic, while knowledge of the food-related origins of the disease was low.

Households rely primarily on agriculture for food and have limited dietary diversity. Cassava is cultivated as a main crop, with maize, groundnuts and beans as secondary crops. Diverse environmental factors, such as soil fertility and soil water retention, affect the quantity and quality of harvests.

Water access is a critical factor in konzo incidence, with access limited by both distance to and seasonality of water points. Water coverage levels are very low, with 5% coverage in the Feshi health zone and 4.3% in Kajiji.<sup>2</sup> Due to these challenges, cultivators in rural areas most often prefer to soak the cassava directly on river banks, in ponds or in swampy areas in order to avoid carrying heavy quantities of

water back to their homes. In semi-urban areas, people prefer to ret the cassava in their homes (in buckets or barrels) due to the likelihood of theft if the cassava is left overnight in a public area. This practice can be hazardous as the quantity of water available in urban areas is often insufficient, and this often leads to not changing the water on a daily basis during the retting process which greatly increases the risk of cyanide intoxication.

## Implementation strategy

The programme strategy sought to address directly the range of critical factors related to konzo disease that were identified in the baseline survey. These included knowledge of and attitudes towards the disease, limited agricultural and dietary diversity, low water access and poor knowledge and practices around cassava processing. The strategy also aimed to address indirectly the high rates of malnutrition seen in konzo cases (25.8% global acute malnutrition (GAM) prevalence in konzo affected children less than 18 years old, 69.3% of GAM in konzo affected adults). Project design used a cross-sectoral approach to address underlying factors in a holistic and integrated manner.

## Community outreach, mobilisation and education

ACF employed a community outreach and mobilisation approach through the creation of community cells as a forum for discussion on konzo and nutrition. These served as launch pads for a broadly based educational campaign on konzo, which also extended to churches, schools, training of local health professionals, community volunteers and leaders, traditional authorities, etc.

Information, Education & Communication (IEC) materials on food processing and preparation, nutrition and konzo were developed in collaboration with the PRONANUT, including posters, brochures, training modules and other material with graphic illustration and supporting text in Lingala, Kikongo and French languages. Posters were distributed for display in places such as public areas, religious sites, health centres, schools and administrative offices. Radio messages incorporating songs and stories were crafted for broadcasting on two local radio stations. To complement, ACF organised 154 mass sensitisation sessions in churches, mosques and schools.

Across the intervention zone, 35 senior MoH staff, 429 community leaders and authorities, and 1052 community volunteers were trained

<sup>1</sup> Field Exchange 41, August 2011. A cross-sectoral approach to addressing Konzo in DRC. p2-5

<sup>2</sup> Based on national standards of user numbers per water point

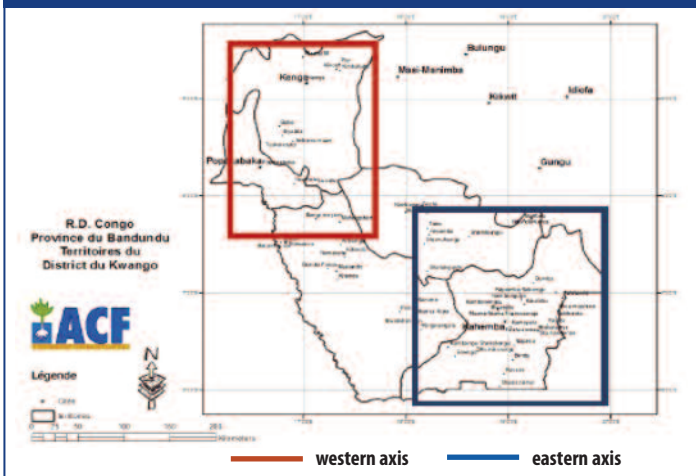
## What is konzo?

Konzo is a sudden epidemic spastic paraparesis (paralytic) disease which leads to a permanent paralysis of the affected person's lower limbs. It is a neurological ailment triggered by sustained dietary exposure to the cyanide present in improperly processed cassava. Konzo itself is not fatal, but its debilitating effects heighten the risk of morbidity and mortality from other diseases. Its disabling effects result in practical, social and economic challenges for individuals and families of individuals living with the limited physical capacity induced by konzo. The disease usually appears in clusters within households, as exposure comes from food consumed as a family meal.

Overall, vulnerability to konzo is heightened by the combination of low protein intake (associated with low dietary diversity), poor soil conditions (which favour the cultivation and consumption of bitter cassava varieties high in cyanide), and a lack of sufficient water resources for thorough processing.



Figure 1: ACF study area in Kwango district, Bandundu province, DRC



Sensitisation being carried out on konzo in a mosque in Kahemba

Julie Mayans, DRC

on the tools and in turn, used their knowledge and skills to pass the message more broadly across the population. Each community volunteer presided over a community cell or served as secretary to the president. Skilled in community mobilisation and training, this individual would facilitate community dialogues on a weekly basis and ensure regular reporting to the local health centre. Each cell had use of an office space and comprised one committee president, one secretary and two advisors. The creation of 647 community cells across 395 villages offered a setting for demonstration, discussion and exchange. These cells gathered members from a local neighbourhood or village hamlet and numbered roughly 45 members each.

Cooking demonstrations were organised at the level of each cell to complement discussions around balanced diets and promotion of kitchen gardens. ACF organized 1,808 demonstrations and volunteers organized another 2,600 demonstrations for cell members, averaging four demonstrations per cell. Improved *fufu* recipes based on mixed cassava and maize flour were introduced in the cooking demonstrations. ACF also extended practical support to the groups through provision of tanks and mills for cassava retting and processing.

**Agricultural and hydraulic infrastructure support**

As part of crop and diet diversification activities, ACF introduced cultivation of improved varieties of two food crops over two successive agricultural seasons, *niébé* (cowpea) varieties *Vita 7* and *Muyaya*, and sweet cassava varieties *TME119*, *Mwuzazi*, *Nsasi*, *Disanka* and *Butamu*. Cultivated in other parts of the DRC, their

introduction in Kwango was aligned with local agro-ecological conditions and intended to support increased consumption of sulphur-based amino acids contained in leguminous foods (to counteract high levels of cyanide in the diet) and to complement consumption of traditional cyanide-heavy bitter cassava varieties with varieties low in cyanide. ACF delivered technical training on agricultural techniques to the 12,500 beneficiary households of food crop support. The bulk of the sweet cassava cuttings distributed in the framework of the project were produced by local agromultiplier associations partnered with ACF. ACF also supported the installation of 13 village based mills to increase access to maize and cassava milling services and improve the quality of the flour.

In order to increase water access, ACF implemented a variety of hydraulic constructions: public retting tanks to process cassava, boreholes, springs, rainwater harvesting systems and piped distribution networks. To encourage the participation of the community, the tanks established were given a supervisor who assigned a management team. Although the management committee owned the tanks, anyone in the area could use them in exchange for a small fee.

**Impact study**

The impact study was conducted in six of the eleven health zones targeted by the project along two main axes - the western axis (Kenge, Boko, Popokabaka, Wamba Luad) and the eastern axis (Kahemba and Kajiji) (see Figure 1).

A stratified sampling approach was used, with six of eleven intervention health zones

selected purposively and 40 of 395 intervention villages selected randomly. In each selected village, six beneficiary households were randomly selected to participate in household surveys (234 in total). Of these, 76% had participated in community cells and 24% had not. Household surveys were supplemented with information from key informants and focus groups.

**Findings**

*Knowledge and attitudes on konzo and nutrition*

Changes in knowledge at endline compared to baseline suggest that community outreach and education activities were effective in challenging long held local beliefs on konzo and nutrition. At project baseline, 74% of sampled population thought that the disease had a metaphysical or black magic origin; at endline this proportion had dropped to 7%. Eight-eight per cent of the sampled population correctly noted the food-related causes of konzo at endline, while 3% indicated a viral cause and 8% reported they did not know the cause.<sup>3</sup> This finding represents the strongest indicator of project impact.

Participation in a cell was found to be correlated with knowledge of the food-related cause of konzo. In addition there was a strong inverse correlation between both 'participation' and 'lack of knowledge', and 'participation' and 'belief in a metaphysical origin'. These findings reveal the importance of outreach and education activities delivered both within the community cells and directly by ACF.

Similar results were found regarding knowledge, attitudes and practice on prevention strategies. In particular, messaging encouraged appropriate processing of cassava and inclusion of increased levels of protein in diets through incorporation of maize flour into *fufu* preparation and legumes (pulses) in the diet. At baseline, households reported utilizing maize flour in their *fufu* preparation in only a few cases where milling services were available, while millet flour was used in the north eastern Feshi territory. Knowledge of prevention strategies linked to food preparation and dietary diversity was limited. At endline, a majority (78%) of respondents indicated that a diversified diet + correct cassava processing would prevent konzo, while 7% believed that witchcraft was the cause of the problem and 8% did



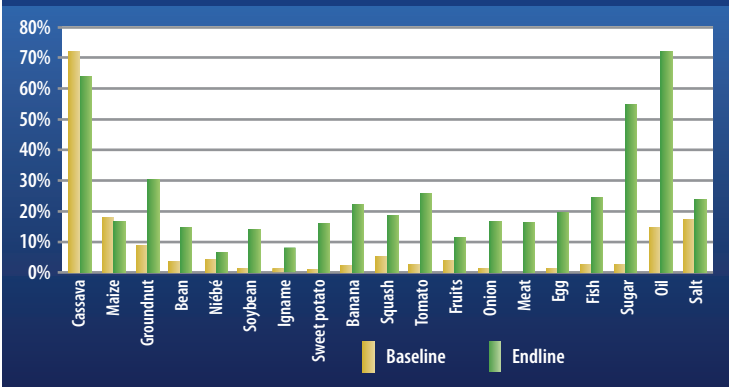
Cooking demonstration

Marie Morgane Delhoume, DRC

<sup>3</sup> Respondents could list more than one cause.



Figure 2: Household food stocks by food item in % of households



Water source in Kigwangala

Julie Mayans, DRC

not know. At endline, 47% of the population reported preparing *fufu* with mixed cassava/maize flour. Nearly half (45%) of respondents prepare their *fufu* exclusively with cassava flour while 8% combine cassava and millet flours.

Lack of access to maize milling services explains 77% of surveyed cases of non-incorporation of maize flour into *fufu*, which are concentrated on the western axis of the intervention zone (Kenge, Boko, Popokabaka and Wamba Luadi). Just 3% of cases justified the exclusive use of cassava flour on the basis of food habits, indicating that the messages around *fufu* preparation were well appropriated, but cannot be translated into practice largely due to practical constraints.

**Food stocks and dietary diversification**

New varieties of *niébé* were largely accepted across the intervention zone and integrated into the diet, notably on the eastern axis (Kahemba, Kajiji) where populations were unfamiliar with *niébé*. Sweet cassava was readily integrated into both east and west Kwango, with results showing a general increase in the intercropping of both bitter and sweet varieties, as well as increased cultivation of sweet varieties on their own. In Kahemba, the bitter cassava variety Mwambo is widely cultivated and consumed to the exclusion of other varieties, whereas both bitter and sweet varieties are cultivated and consumed along the western axis. However, sweet varieties were well accepted in Kahemba as they offer shorter processing times and are immediately consumable.

Food stocks at baseline (May 2010) and endline (August 2011) were assessed (see Figure 2). The results reveal a notable improvement in both the overall stocks and the diversity of food items held by households, including pulses. The surveys were not

conducted at the same time of year, which would have ensured the greatest comparability, however neither one was carried out in the post-harvest period when differences in food availability are significant. The positive trend in diversity and volume of household food stocks may be attributed to project impact, in particular the IEC activities around balanced diets and food processing and preparation, as well as external factors such as climate, crop disease and seasonal fluctuations.

**Cassava retting techniques and water access**

Knowledge of community leaders and member households of community cells regarding cassava retting and drying techniques were assessed before and after training. On the recommended length of time to ret and dry cassava, the share of community leaders correctly reporting optimal length (4 days) increased from 60% at baseline to 99% at endline. Member households showed a similar level of knowledge at endline but stated constraints around access to processing sites and water quality in applying the practice.

At endline, a majority of households (92%) indicated they were processing cassava in rivers or ponds, with a minority using cassava retting tanks (4%) or containers at home (4%). At baseline, utilization of home retting techniques – that rely on prolonged use of the same water, saturated in acid and less effective in cyanide detoxification – was relatively common in urbanized sites (9% in Kahemba, 10% in Popokabaka, 5% in Kenge). At project end, it was noted that these practices have been largely abandoned, partly due to ACF’s implementation of peri-urban water points.

At the end of the project, households reported soaking cassava an average of 3.4 days, a significant increase from the average of 2 days noted at baseline across the intervention area. Constraints to optimal practice include the risk of theft of tubers at open river and pond sites, as well as dietary and income pres-

ures. Impacts on cassava retting practice from ACF’s establishment of communal retting tanks maintained and watched over by community groups are not yet known as the infrastructures were in process of installation at the time of survey.

**Konzo incidence**

A surveillance system for screening and identification of konzo cases in Kahemba health zone was established by the local health structure in 2009, with annual caseload an estimated 1,300 individuals in 2009. MoH educational activities and ACF integrated activities on konzo were launched in early to mid 2010, with a marked decrease in cases (fewer than 200) recorded that year. A further reduction in caseload between 2010 and 2011 was noted during the critical months of June, July and August (dry season) with 47 new cases recorded in 2011(see Figure 3). This represents an 84% reduction in incidence between 2010 and 2011. The greatest reduction in new cases was observed among the under 5 years age group. Note that the observed reduction in konzo incidence cannot be attributed solely to project activities as numerous external factors are likely to influence this outcome.

The results on reduced incidence are corroborated by ACF analytical findings of urine and cassava flour sample cyanide content, taken from 100 randomly selected beneficiary households at project endline (see Figures 4a and 4b). A 50% reduction in flour samples presenting medium to high cyanide levels (20 to 40 ppm) was observed compared with baseline, as well as a 16% reduction in thiocyanate levels in urine samples (>300µmol). These reductions translate into a slightly lower risk of developing konzo.

Observed reductions in cyanide content of baseline and endline samples are similarly attributed to numerous external factors such as seasonality, migration, agricultural production, health condition, diet composition, water availability, as well as project impact.

Figure 3: Comparison of number of konzo cases in Kahemba health zone in 2010 and 2011

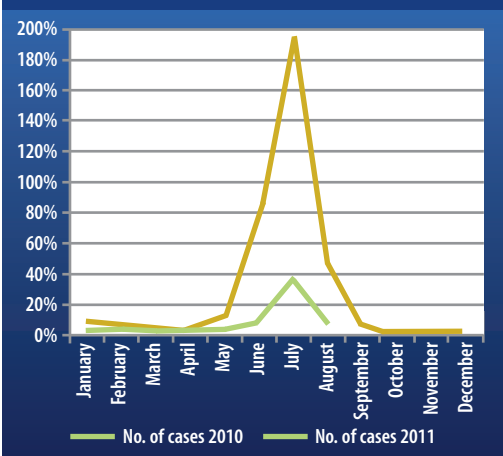


Figure 4a: Flour test sample results 2010 and 2011 by % surveyed households

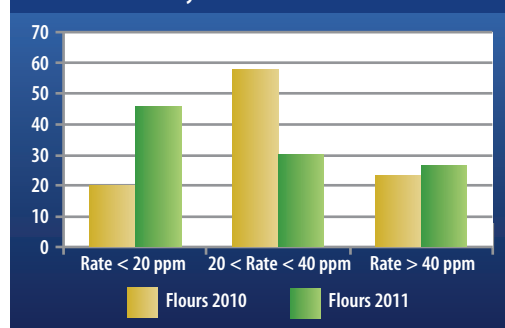
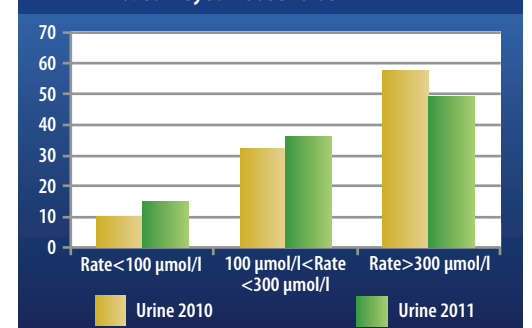


Figure 4b: Urine test sample results 2010 and 2011 by % surveyed households





**Conclusions and recommendations**

ACF's multi-tiered community outreach and education strategy proved effective in the diffusion of information on a large scale. The community cell approach allowed for a deep, sustained and broad based appropriation of messages and activities around nutrition education and konzo that would not have been possible if only traditional IEC methods and materials had been utilised. Placing community members in leadership positions to carry out sensitisation allowed local taboos to be effectively mitigated through open discussion. This approach also permitted the affected population to control the educational process, encouraging better appropriation of messages, knowledge transfer and behaviour change. Impacts achieved through the community outreach and education approach were reinforced by improved access to water, agricultural processing infrastructure and opportunities to diversify diets.

Based on these findings, ACF-USA issued the following key recommendations:

- Continued promotion of messaging by community cells and MoH staff
- Continued epidemiologic surveillance of incidence of konzo cases by MoH in collaboration with local partners with a focus on high concentration areas
- Expansion of access to village-based agro-processing infrastructure and associated hydraulic infrastructure including cereal mills and cassava retting tanks
- Socio-economic support of konzo victims and their families through targeted support to income generating activities
- Further study on traditional diets, food habits and beliefs, including the contribution of wild foods and game, for improved strategies around dietary diversification

For more information, contact: Muriel Calo, email: mcalo@actionagainsthunger.org



Cassava retting tank in Feshi



A sibling takes care of a newborn in Mogadishu amongst IDPs (July 2011)

Mohamed Moalim/FSNAU, Somalia, July 2011

# 2011 famine in South Somalia: the role of the early warning information system

By

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The authors constitute the FSNAU nutrition situation analysis team.

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Finally, thanks to FEWS NET Nairobi and Washington colleagues, UNICEF and WFP Somalia colleagues, Nick Haan, Dan Maxwell, Peter Salama, Mike Golden, Epicentre and Francesco Checchi for their technical support and collaboration during the famine.



In July and August 2011, the United Nations declared famine in Southern Somalia based on the food security and nutrition analysis undertaken jointly by UNFAO/FSNAU (Food Security and Nutrition Analysis Unit) and FEWS-NET. The analysis indicated convergence of key evidence on famine outlined in the Global Integrated Phase Classification of food insecurity (IPC)<sup>1</sup>. This was not a sudden onset crisis and this article describes the role and key findings of the early warning system leading up to that declaration.

**Overview**

Somalia has been without an effective central government since President Siad Barre was overthrown in 1991 following a protracted civil war by opposing clans. The opposing clans unfortunately failed to agree on a replacement and plunged the country into lawlessness and clan warfare, with disintegration of the country along clan lines and smaller political regions.

The three major political zones are Somaliland, Puntland and South and Central Somalia. Somaliland, in the northwest, has remained relatively stable since its unilateral declaration of independence in 1991 with functioning institutions and a peaceful transfer of power via democratic elections in 2010. Puntland, in the northeastern zone of Somalia has, since mid-1998, been referred to as the Puntland State of Somalia and has an estimated population of two million people which include 140,000 internally displaced people (IDPs) from parts of South and Central zone. Puntland is, in general, politically and socially stable but with sporadic incidents of insecurity. The rest of the country is what is currently referred to as South and Central Somalia and is currently governed by the Transition Federal Government with the administrative capital in Mogadishu. South and Central zones of Somalia are the epicentre of the current anarchy in Somalia, which has impacted negatively on lives, livelihoods and access to humanitarian support.

The FSNAU in collaboration with FEWSNET, UNICEF, WFP and other



<sup>1</sup> See FSNAU website: www.fsnau.org



partners provide evidence-based analysis of Somali food, nutrition and livelihood security, to enable both short-term emergency responses, and long-term strategic planning in food security and nutrition well-being. It was first established as the food security assessment unit (FSAU) in 1994 post 1992/93 famine, evolving into the FSNAU in 2000 with the integration of food security and nutrition projects. FSNAU works to develop the capacity of other agencies (both governmental and non-governmental) to collect evidence-based information and focus more on the overall analysis of the food security situation. FSNAU analysis also contributes to policy and strategy development.

### Deterioration in food security and nutrition situation (2010/11)

In Gu (April-June) 2010, the food security situation improved in most of rural Somalia, leading to a reduction in number of people facing acute food insecurity (see Box 1 for livelihoods system overview). This was attributable to an exceptional Gu seasonal performance across most of the agricultural livelihoods, as well as improved livestock production in the country. The number of the urban population facing acute food insecurity also significantly decreased during this period due to reduced inflation, increased wages and overall improved food production in the country. However, during the following season (Deyr '10/11), there were clear signs of a worsening food security situation as flagged in the FSNAU and FEWSNET early warning system, in most livelihoods of Somalia<sup>2</sup>. This was the result of unusually below average rainfall caused by the La Niña meteorological phenomenon. The impact of this dismal seasonal performance was demonstrated in failed crops in most of the southern crop-producing regions, and considerable water and pasture shortages in most of the key pastoral areas of the country – reaching only 19% of average (Figure 2).

These developments resulted in significantly reduced food production (cereals, milk and meat), which subsequently was reflected in increased food prices and a rising number of the population facing acute food insecurity in early 2011. Specifically, in Deyr 2010/11 a total of 2.4 million people faced acute food security, representing a 20% increase from Gu 2010. In the South, the rural/urban population in crisis increased by 64% from Gu 2010, reaching 855,000 people. The La Nina event continued further through Gu 2011 season.

Restricted humanitarian assistance and substantial constraints to food access (Table 1) were observed mostly in the south. The food security situation was further aggravated by the food price inflation, limited labour opportunities and overstretched social support. However, the camel rearing pastoralists were less affected in comparison to the riverine and agropastoral communities (cattle rearing) as they opted to out-migrate to areas with slightly nearer average conditions. Nonetheless, nationwide high livestock deaths, as well as increased pastoral destitution, were reported during this period, especially for cattle and sheep.

### Nutrition surveillance in Somalia

A wide range of indicators are derived from the nutrition surveillance system in Somalia: acute malnutrition, death rates, proportions at risk based on mid upper arm circumference, and nutrition trends at health facilities. In any particular season, the severity in level of findings by indicator ranges from *Acceptable*, *Alert*, *Serious*, *Critical*, *Very Critical* to *Extremely Critical* mostly based on internationally recognized thresholds. Convergence of evidence on the severity level of the findings is the basis for categorizing the nutrition situation in a given phase. Where representative nutrition surveys are conducted, global acute malnutrition (GAM) is the core outcome reference indicator.

An integrated analysis of the nutrition situation<sup>3</sup> in southern Somalia from the Gu (April-June) in 2007 depicts varied

<sup>2</sup> FSNAU Press Release April 27, 2011: Somalia: Drought Impact Intensifies as Rains Delay

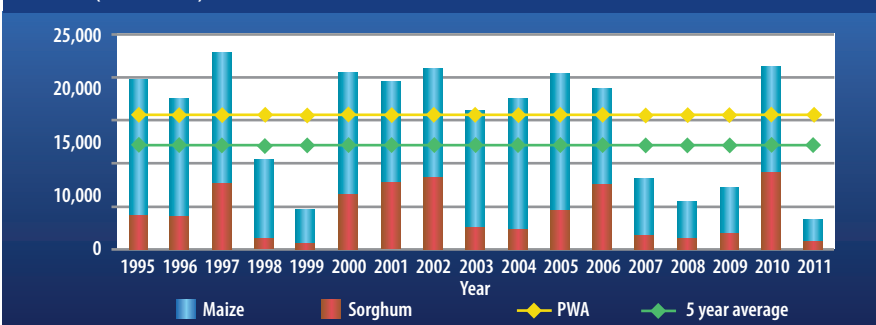
<sup>3</sup> The nutrition situation classification is based on 'The Nutrition Classification Framework' developed by FSNAU in consultation with key partners involved in nutrition activities in Somalia and in the Region.

### Box 1 : Livelihood systems in Somalia

The rural livelihood systems of Somalia (pastoralism, agropastoralism, farming), revolve around the seasonal rainfall pattern. There are four seasons in South Somalia: the hot and dry Jilaal (January-March), and *Hagaa* (July-September), and the cool and wet *Gu* (April-June), and *Deyr* (October-December).

The *Gu* and *Deyr* rainy seasons provide pastoralists with water and pasture for livestock production and sustenance, while enabling crop establishments and with it, increased labour and income opportunities in the agro-pastoral and riverine livelihood zones simultaneously. Whereas pastoralists reside in their regular settlements during the wet seasons, they out-migrate towards the rivers and other water points for water and pasture during the dry seasons. Agropastoralists in the south are more inclined to crop than focus on livestock production and, together with the riverine population group (pure farmers), are generally sedentary. Urban livelihoods rely heavily on the rural areas for food (milk, cereal, fruits and vegetables), accessed through purchase. Changes in rainfall pattern therefore adversely affect food access across all population groups, significantly impacting on health and nutrition outcomes.

Figure 2: Post-Gu plus off season cereal production compared with the Post War Average (PWA) (1995-2011)



IDPs migrate to Mogadishu (Shobelle region) in July 2011

Table 1: Evidence of substantial constraints to food access by livelihood group, August 2011

Livelihood zone	Proportion poor households	Sources of food (poor households)	Relative importance of food source (% of minimum food basket in the baseline year)	Change in 2010/11 compared to baseline year	Likely impact on Aug/Sept 2011 food access
Bakool Agropastoral	40%	Own crop production	25%	88% decline in crop production	Poor households only able to access 40-50% of food needed for survival
		Purchases funded by wage labour	25%	57% decline in Terms of Trade (ToT) Wage/Sorghum	
		Purchases funded by livestock sales	25%	76% decline ToT in Goat/Sorghum	
		Other	25%	Net decline likely	
Bay Agropastoral High Potential	35%	Purchases funded by wage labour	60%	80% decline in crop production	Poor households only able to access 40-50% of food needed for survival
		Purchases funded by wage labour	10%	82% decline in ToT Wage/Sorghum	
		Other	30%	Net decline likely	
Lower Shabelle Riverine	38%	Own crop production	75%	64% decline in crop production	Poor households only able to access 40-50% of food needed for survival
		Purchases funded by crop sales	15%		
		Purchases funded by wage labour	10%	46% decline in ToT Wage/ Maize	



Box 2: Chronology of events (early warnings and alerts) leading to 2011 famine declaration

**August 2010:**

FSNAU warned that though Somalia received above average rains, the gains made could easily be reversed given that the outlook for the next rainy season was poor. FEWS NET also issued an alert on La Niña and Food Security in East Africa. They projected that the impacts of a La Niña event from August 2010 could include significant February 2011 crop harvest deficits in south-eastern Kenya, Somalia, and northern Tanzania, depending on the severity of the La Niña event. Additionally, reduced rangeland resources (water and pasture) in key pastoral areas in the Horn of Africa between October 2010 and March 2011 and possible reduction in 2011 long rains agricultural production were predicted.

**September 28, 2010:**

FEWS NET issues La Nina Brief, indicating the likelihood that it would continue into early 2011 with significant food security implications.

**November 2, 2010:**

FEWS NET East Africa indicates that pre-emptive livelihood support could mitigate likely La Niña impacts in the eastern Horn.

**November 26, 2010:**

FSNAU issues a press release on the early impact of poor rains seen in Somalia.

**December 16, 2010:**

FSNAU preliminary analysis on the early indication of the outcome of the Deyr season performance indicates that that large scale severe crisis would sustain in most parts of southern Somalia given prevailing restrictions on humanitarian interventions.

**January 26, 2011:**

FSNAU issued a news release on the crop failure, severe water crisis for both human and livestock, following failure of the short Deyr rains, heightening fears of deepening humanitarian crisis in coming months.

**March 15, 2011:**

The FEWS NET led inter-agency publication issued an alert that the existent crisis following the October-December, 2011 drought was likely to worsen, based on below-average March to May rains forecast in the Eastern Horn.

**March 21, 2011:**

FEWS NET/FSNAU issue an alert: extreme food insecurity likely due to drought and lack of humanitarian response.

**April 2011:**

FSNAU issued a press release indicating that the country could slide into an even deeper crisis due to the combination of drought, skyrocketing food prices and constant

population displacement from ongoing conflict. The prevailing drought had already displaced some 50,000 Somalis within the country, according to UN estimates. FSNAU, through the Nutrition Update publication, further issued an alert that the nutrition situation in the South was *Very Critical*. Further deterioration in nutrition status is expounded in July 8th, 2011 edition.

**May 6, 2011:**

FEWS NET East Africa alert: Poor performance of April rains brings major food security concerns in the Eastern Horn

**June 7, 2011:**

FEWS NET led multi-Agency East Africa Alert warns that households in the pastoral and marginal cropping areas face moderate to extreme levels of food insecurity due to the drought, deteriorating purchasing power, and in some areas, limits on the delivery of humanitarian assistance.

**June 20, 2011:**

FSNAU issues a press release as well as a Quarterly Brief focusing on Post Gu Season Early Warning. They highlight the deepening crisis in Somalia in the 2nd half of 2011 with food prices hitting a new record high, following the two consecutive poor rainy seasons.

**July 20, 2011:** The United Nations declared famine in two areas of southern Somalia (Bakool agropastoral livelihood zones and all areas of Lower Shabelle) based on joint FSNAU FEWS NET analysis<sup>4</sup>.

**August 3, 2011:**

The agropastoral areas of Balad and adale districts of Middle Shabelle, the Afgoye corridor IDP settlement, and the Mogadishu IDP community, were declared in famine with an additional 50,000 people in the cropping areas of Gedo, Juba and pastoral areas of Bakool facing famine-level food deficits.

**September 5, 2011:**

A joint FSNAU FEWS NET release on September 2011 reported that Bay region was facing famine conditions based on new nutrition survey data. In addition, the July/August Post-Gu seasonal assessment analysis reported that poor households in this region faced massive food deficits due to a combination of poor crop production and deteriorating purchasing power.

**February 3, 2012:**

The UN declared an end to famine conditions in Somalia but warned that the crisis in the Horn of Africa was not over and continued efforts were required to restore the food security in the region.<sup>6</sup>

The reference documents are accessible at [www.fsnau.org](http://www.fsnau.org) and [www.fews.net](http://www.fews.net)

nutrition phases ranging from Serious in Juba and Shabelle regions, to *Very Critical* in Gedo, Bay and Bakool regions. (Refer to progression maps in Figure 3). The maps show the variation and progression of the nutrition situation in the different regions of South Somalia (circled) between Gu 07 and Gu 11.

The main areas of concern highlighted in the FSNAU/FEWSNET early warning system from August 2010 were the rain-fed agropastoral areas of southern and central Somalia where crop production was largely impacted by the poor rainfall, cattle-breeding pastoral communities in South-East Pastoral, all livelihoods of Hiran and Bakool regions, the entire Coastal *Deeh* livelihood, the Addun Pastoral, Nugal Valley and Sool Plateau. Most of these areas had suffered from consecutive seasons of below average rainfall. Therefore, the capacity to withstand the looming crisis was very limited.

The maps highlight the deterioration of the nutrition situation to *Very Critical* in all southern regions by Gu 11. The deterioration was mainly attributed to lack of access to food due to rapid increases in food prices, massive death of livestock, and limited access to relief food due to the withdrawal of humanitarian agencies for security reasons. The situation was exacerbated by disease outbreaks such as cholera, acute watery diarrhoea and measles in southern Somalia.

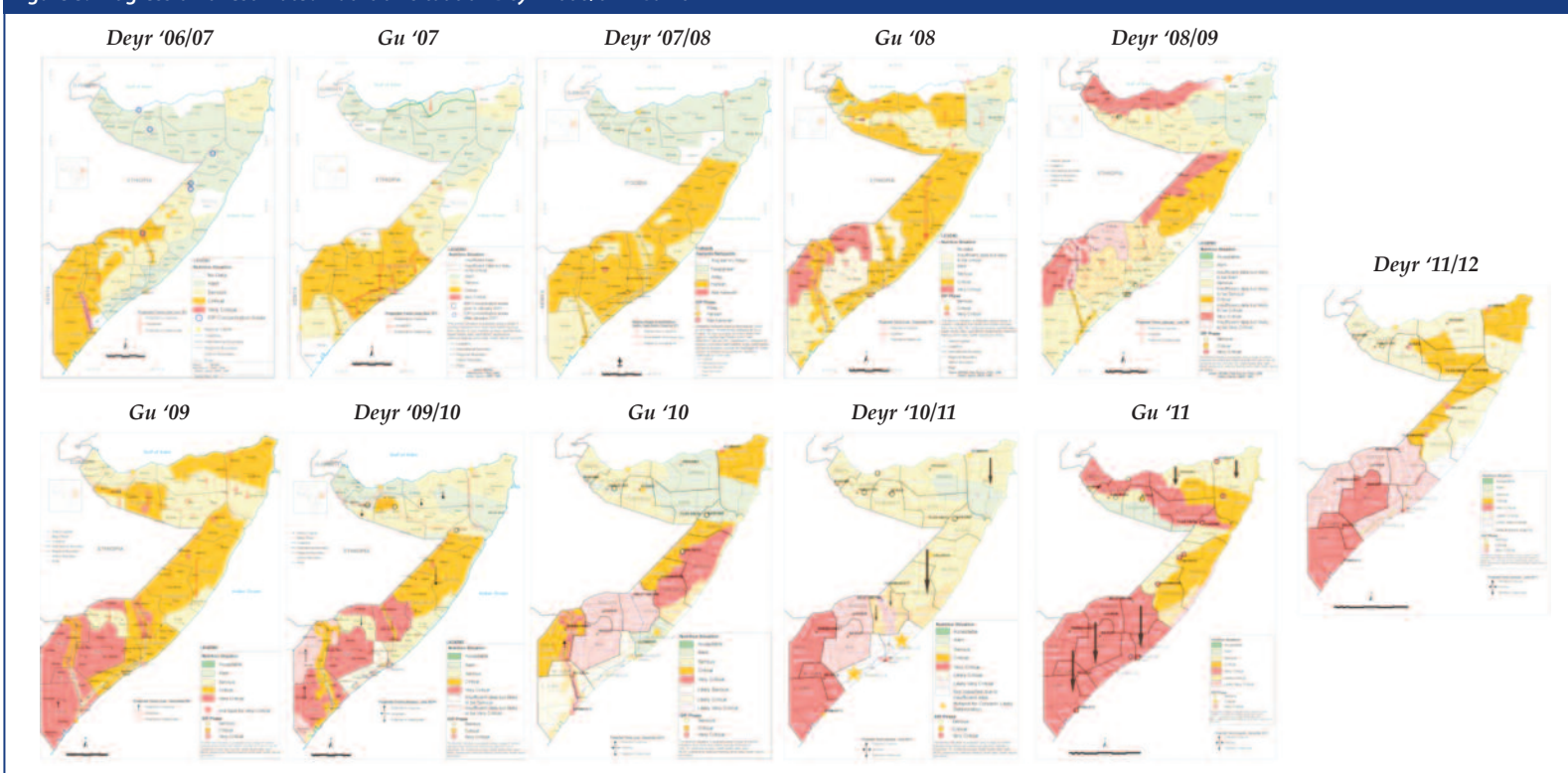
In South Somalia, the nutrition situation remained worrying from Gu 2007 up until Gu 2011 when the levels of acute malnutrition reached the peak, with

<sup>4</sup> Press Release July 20, 21011: Expanding Famine Across Southern Somalia

<sup>5</sup> Press Release September 5, 2011: Famine Spreads into Bay region; 750,000 people face Imminent starvation

<sup>6</sup> Press Release February 03, 2012: Famine over yet 31% of the population remain in Crisis

Figure 3: Progression of estimated nutrition situation Deyr' 2006/07 – Gu 2011



Source: FSNAU website. Note: To see the detail, download from [http://www.fsnau.org/downloads/Prgrgression\\_of\\_Estimated\\_Nutrition\\_Situation\\_Deyr\\_06\\_10\\_to\\_Gu\\_11.pdf](http://www.fsnau.org/downloads/Prgrgression_of_Estimated_Nutrition_Situation_Deyr_06_10_to_Gu_11.pdf)



GAM as high as 55% in Bay region. This increase was the result of the severe food insecurity described earlier that followed the poor rainfall performance in the area and shrinking humanitarian space since 2009, following heightened insecurity. In 2009 for example, international organisations operating in southern Somalia were compelled by local militia to vacate, leaving the communities with minimal access to humanitarian support. In addition, disease outbreaks, such as acute watery diarrhea/cholera and measles in an environment with extremely low access to health services aggravated the situation. At this point, the population's general resilience to shocks that sustained the nutrition situation at *Serious* phase in some seasons seemed to have collapsed.

Early warnings and alerts from the FSNAU/FEWSNET early warning system were issued through 2010 and 2011 leading up to declaration of famine in July 2011. These are listed in Box 2.

**Evidence of famine**

The movement restrictions in southern Somalia meant that implementation of nutrition surveys was remotely managed and most were implemented successfully. In July 2011, FSNAU conducted 18 representative nutrition (SMART two-stage cluster) surveys in Southern Somalia, covering the rural livelihoods, Mogadishu, and Afgoye IDPs. Sixteen repeat SMART surveys were conducted in August 2011 to monitor the situation. There were data limitations for Bakool and Hiran regions identified by CDC in October 2011. However this was not a significant constraint for early warning purposes given the available food access analysis and the nutrition and mortality data from surrounding areas.

The July 2011 surveys indicated extreme levels of acute malnutrition across the south, with GAM rates exceeding the IPC famine threshold of 30% in all livelihood zones except for the riverine zones of Middle Shabelle and Hiran Regions. In some regions, prevalence of acute malnutrition exceeded 50% (Figure 4). Findings for the retrospective crude death rates (CDR) confirmed famine in these areas according to IPC thresholds, especially for Bay and Bakool agro-pastoralists, Lower Shabelle riverine and agro-pastoralists and Afgoye and Mogdishu IDPs where they exceed the IPC famine and WHO emergency threshold of 2/10,000/day (Figure 5). Based on the August 2011 survey findings, the CDR was at 2.11/10,000/day among Bakool agro-pastoralists. For Lower Shabelle, in the riverine and agro-pastoralist livelihood zones, the July survey findings indicated CDR of 6.12 and 4.29/10,000/day respectively. In the other population groups, the rates were lower, ranging between 1 and 2/10,000/day, indicating excessive deaths and a doubling or trebling of the FSNAU median rate of 0.7/10,000/day in Southern Somalia.

The July 2011 findings indicated significant deterioration in the nutrition situation across all population groups in the south from the preceding six months. FSNAU and FEWSNET analysis confirmed that the core IPC famine outcomes of food security, nutrition and mortality indicators had been met. Therefore, in July and August 2011, the UN declared famine in Mogadishu and Afgoye IDPs, Bay and Bakool Agro-pastoral, Lower Shabelle and Adale and Aden Yabal districts in Middle Shabele (see Figure 6 Nutrition Situation Map).

**Crisis population and response**

According to the FSNAU and FEWS NET August 2011, post Gu 2011, a total of 4 million people were in crisis nationwide, of which 3 million were in the south. The worst affected areas were in Southern regions where most people lacked food access, with 750,000 experiencing famine level outcomes.

At national level, approximately 450,000 were estimated<sup>7</sup> to be acutely malnourished children, translating to 30% of the 1.5 million Somali children. Of these, 190,000, or 13% of the 1.5 million Somali children were severely malnourished. The south was worst hit, and host to 336,000 (or 74%) of all the acutely malnourished children, 160, 800 of whom (84% of the national estimate) were severely malnourished.

In response to the crisis, the Nutrition Cluster in Somalia undertook scale up of nutrition services both through static and mobile

Table 2: Nutrition survey results, July 2011

Survey	GAM	SAM	Crude Mortality Rate
Bay agro-pastoralists	58.3% (52.1-64.2)	22.1% (18.2-26.5)	2.15/10,000/day
Mogadishu IDPs	45.6% (40.5-50.8)	23% (19.2-27.2)	4.02/10,000/day
Afgoye IDPs	46% (40.8-51.3)	24.7% (20.2-29.8)	5.68/10,000/day



Figure 4: Prevalences of GAM and SAM, Southern Somalia, July – August 2011

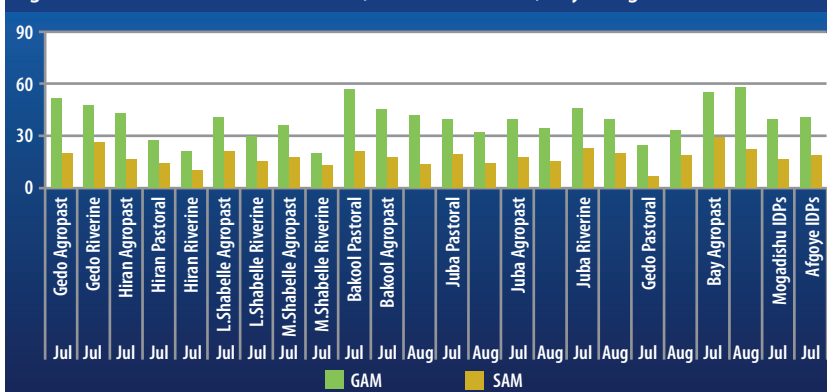


Figure 5: Crude and under 5 death rates, per 10,000 per day, June-August 2011

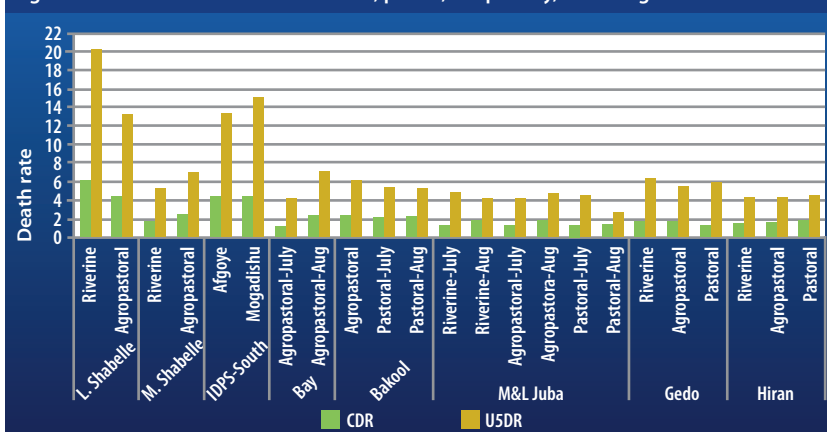
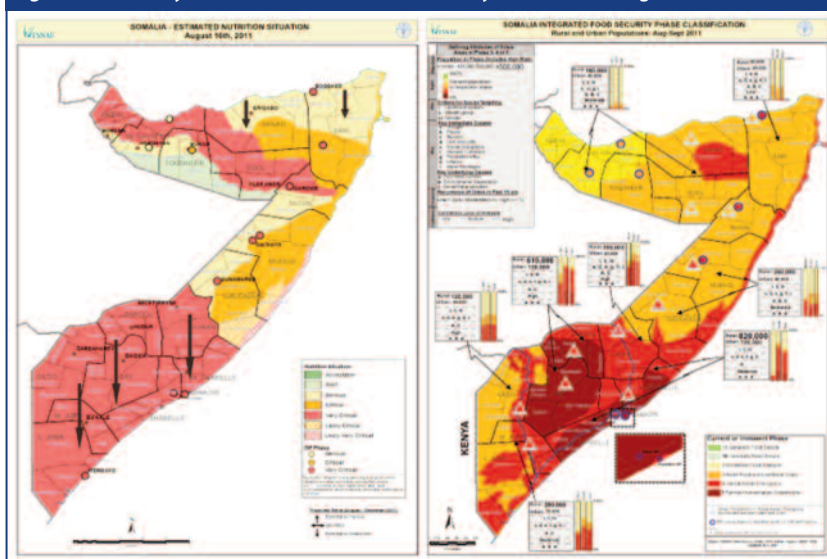


Figure 6: Summary of the nutrition and food security situations in August 2011



Nutrition situation map based on the FSNAU Nutrition Situation Classification Framework and Food Security situation map based on the IPC.

<sup>7</sup> The Somalia Nutrition cluster approach of estimating the cases of malnourished children is such that the total cases of acute malnutrition, including those severely malnourished state, is obtained by applying the GAM and SAM prevalence rates to the under-five population for each of the assessed population groups



nutrition centres:

- Treatment of severe acute malnutrition (SAM) scaled up from 388 outpatient therapeutic programmes (OTP) reaching 7,500 children per month in early 2011, to 443 OTP reaching 9,000 per month in August 2011.
- Treatment of moderate acute malnutrition (MAM) scaled up from 512 Supplementary Feeding Programmes (SFPs) reaching 18,000 children per month in early 2011, to 641 SFP facilities reaching 25,000 per month in August 2011.

Faced with severe food deficits, thousands of people fled from the southern regions of Somalia to neighbouring countries of Kenya and Ethiopia to seek assistance. According to UNHCR, an average of 10,000 new Somali refugees was arriving in Kenya's Dadaab camps per month (at least 1,300 per day from June) while 5,000-6,000 per month people were arriving at Dolow Ado camp in Ethiopia. As of 26 June 2011, a total of 60,200 Somalis were registered in Kenya – more than a 100 per cent increase as compared to the same time in 2010. The refugees arriving in these countries were in dire situation with GAM rates amongst new arrivals in refugee camps in Ethiopia and Kenya ranging from 30-40%. Three in five children arriving in refugee camps in Ethiopia from southern Somalia were malnourished<sup>8</sup>. In refugee camps in Kenya, more deaths were recorded among Somali children in the therapeutic feeding centres in the first quarter of 2011 than in all of 2010.

Following the declaration of famine in parts of Southern Somalia, substantial humanitarian assistance was provided to the affected population. At the same time, the subsequent Deyr 2011 rainfall performance was above average resulting in average harvests which mitigated the extreme food deficits and reduced mortality. The FSNAU-FAO and FEWS-

NET Post Deyr 2011/12 seasonal assessment results indicated that famine conditions defined by IPC no longer existed in Southern Somalia in February 3rd 2012, though nearly a third of the country's population remained in crisis, unable to fully meet the essential food and non-food needs. With these results, the end of famine was declared by FAO in February 2012.

The information presented in this paper illustrates the availability of sufficient early warning situational analysis to trigger an appropriate response in a timely fashion. A SCUK/Oxfam joint briefing paper on the 2011 Horn of Africa crisis concluded that the scale of death and suffering, and the financial cost, could have been reduced if early warning systems had triggered an earlier, bigger response<sup>9</sup>. Securing the necessary resources to respond remained a challenge until after the famine declaration that brought significant assistance. However, even where there was a response, insecurity limited humanitarian access.

The well being of populations in Somalia remain extremely fragile due to a combination of multiple natural, economic and political factors, compounded by insufficient measures in place to mitigate loss of life and livelihoods. Close monitoring of the food security and nutrition situations is not in and of itself sufficient to protect this chronically vulnerable Somali population without simultaneous commitment to intervene early where early warning information indicates such a necessity.

For more information, contact FSNAU: email:info@fsnau.org

<sup>8</sup> FSNAU Nutrition Update, May-July 2011. Cross border nutrition.

<sup>9</sup> A Dangerous Delay. The cost of late response to early warnings in the 2011 drought in the Horn of Africa. Oxfam, Save the Children UK. Joint agency briefing paper. 18 January 2012. Available from: <http://policy-practice.oxfam.org.uk>



A mother and child in Mogadishu (IDPs)

Laura Elizabeth Pohl/Bread for the World, US, 2012



Agency Profile



Interview by Marie McGrath, ENN

A trip to Washington in early October, gave the opportunity for the ENN to interview Bread for the World and Bread for the World Institute. We first came across Bread for the World when attending a SUN meeting in June 2010 in Washington that they co-hosted with Concern Worldwide. They were obviously in the thick of the political and policy setting aspects of nutrition and we were curious to learn more about what they were about.

I interviewed Asma Lateef, Director, and Scott Bleggi, Senior Policy Analyst for Hunger and Nutrition, at the Bread for the World Institute at their light-filled office overlooking Capitol Hill, the seat of the US government. Scott remarked as we shook hands, that while the view is a 'selling point' for any prospective staff, it reminds them daily of the focus and target of their work: high level influence on US government policy.

Asma joined Bread in 2000 as a policy analyst on the government relations team; a role involving direct lobbying at "the hill". She left for a brief period and returned in 2007 as Director of Bread for the World's research and education affiliate, Bread for the World Institute. She "came to nutrition late", her primary training was as an economist. Scott has worked in Washington for more than 30 years, originally as a US Foreign Service officer (Agriculture) and then as a consultant in trade and development. He joined the Institute 2 years ago to work on mother and child nutrition and linkages with health and agriculture in US development policies and programmes.

Bread is best understood by hearing the story of how it began. Asma described how Bread was established in 1974 by a pastor, Art Simon, in New York City whose parish in the Lower Eastside of Manhattan was then populated with hungry and poor people. He realised he wouldn't be able to meet the needs of his community by "doleing out soup", which led him to question what is the role of the church in addressing the systemic issues hunger? He and a handful of others gathered regularly to study what they could do solve hunger and care for those whom Jesus calls "the least of these". From this small start in Trinity Lower Eastside Lutheran, he moved to Washington DC to be closer to Congress and to further build Bread for the World. Art was presi-

Mohamed Moalim/FSNAU, Somalia, July 2011





(Left to right): Kay DeBlance, Rebecca Walker, Aaron Marez and David Ramos of Texas walk through the Russell Senate Office Building on their way to a meeting in Sen. Kay Hutchison's office (R-TX). They visited the office as part of Bread for the World's Lobby Day in Washington, D.C., on Tuesday, June 12, 2012.

<b>Name:</b>	<b>Bread for the World and Bread for the World Institute</b>
<b>Address:</b>	<b>425 3rd Street SW, Suite 1200, Washington, DC 20024</b>
<b>Phone:</b>	<b>(202) 639-9400</b>
<b>Email:</b>	<b>institute@bread.org</b>
<b>Website:</b>	<b>http://www.bread.org</b>
<b>Year founded:</b>	<b>1974</b>
<b>Director:</b>	<b>Asma Lateef, director, Bread for the World Institute</b>
<b>No. of staff in Bread for the World (HQ):</b>	<b>80 (10 at the Institute, 70 at Bread for the World)</b>

dent until 1991, when David Beckmann took over. Bread began with the values that embodied its work – in the early days, staff salaries were on a needs basis, meaning that the most senior staff were not paid the highest. This changed, Asma explained, as they had to adopt a more mainstream “competitive” approach to attract new staff. However the fundamental concern of addressing the systemic causes of poverty, hunger and undernutrition remains at the heart of Bread’s work.

Scott explained the difference between Bread and the Institute – which largely relates to funding and enabling tax breaks for individual donations. The Institute began in 1978 as the Bread for the World Education Fund, which enabled donors to get a tax deduction for their contributions. These funds cannot be used for lobbying (Americans donating to Bread do not get a tax break as the funds can be used for grassroots and direct lobbying). Essentially the Institute is the research and education affiliate of Bread, providing critical analytical thinking that underpins and supports Bread’s advocacy and campaigning work. Good examples are the analyses that have influenced policy around maternal and child nutrition and Feed the Future (FTF), USAID’s global hunger and food security initiative. Outputs take the form of social media blogs, briefing notes, with summary key recommendations providing a digested read and ‘need to know’ for policy-makers.

There are approximately 80 – 100 staff at Bread and the Institute. A lot of the staff members undertake education outreach. They are organised as departments such as church relations, communications, government relations, organising and grassroots capacity building. Bread has more than 90,000 influential members and around 5,000 local congregations, enabling an outreach of about one million people for its advocacy work. All members and partners are US based, enabling Bread to have a presence in all the congressional districts of the country. One exception is the Canadian Food Grains Bank that supports the annual hunger report; their engagement reflects that the Institute’s policy work, particularly on global hunger, is highly relevant to Canadians as well.

In terms of funding, around 60% of their resources come from members/individual

donations. The balance comes from foundations. The type of individual donor varies hugely – from one individual who “empties his pockets, puts it in an envelope and sends it to us,” to monthly donors, and larger contributions from various Christian denominations. Foundations that support the work of the Institute and Bread include the Gates and Hewlett Foundations.

Asma and Scott reflected how the 2008 Lancet series was a critical launch-pad for Bread’s focus on nutrition. Recognising that you cannot fight hunger without addressing nutrition and food quality had a massive impact on their advocacy work and marked the point that Bread “jumped into action” on nutrition. This coincided with the 2008 global food price crisis, and by happy coincidence, a number of other initiatives, such as Bread’s own mother and child nutrition projects, the

Bread and the Institute are not direct service providers. They work in advocacy. Scott described how the Institute “occupies a space that has one foot in understanding technical nutrition issues and one foot in influencing policy”. But both Scott and Asma were clear to state that they are not nutritionists, and certainly not technical nutrition experts. They have great respect for the nutrition expertise out there. Their job is to “distill” and “unpack” what nutrition is, how and where it is relevant at a political and policy level, and to hold government players to account. For example, the Lancet Maternal and Child Nutrition series, FTF and SUN have helped crystallise thinking on nutrition for children under 2 years of age and how FTF (focused on agriculture and livelihoods) is integrating nutrition across development sectors. Bread is also work on improving foreign aid effectiveness. Bread’s president David Beckmann (who is the 2010

World Food Prize laureate) is co-chair of the Modernising Foreign Assistance Network, informing country plans and “pushing the US to be better donors, with more transparency and more M&E”.

There have been marked developments, they feel, over the last few years, in terms of US government awareness and engagement on nutrition. At the G8 in Washington, US President Barack Obama addressed nutrition, and his Secretary of State, Hillary Clinton, has become a huge advocate for improving nutrition, especially for women and children. During Clinton’s trip to Tanzania, she spoke about nutrition and in all likelihood influenced the

development of that country’s national nutrition plan. The Administrator of USAID, Dr. Rajiv Shah, is talking about nutrition and is a member of the SUN lead group. Not only that nutrition is being spoken about, but the “depth of the conversation” has increased while there has been a progression from “how do we make linkages” to “look at what we are doing”. From an economic point of view, nutrition investment makes huge sense and “pays off”. Scott described early research in Guatemala that showed how malnutrition affects the GDP of an entire nation. Having donors build an evidence base showing the successes of early nutrition interventions helps Bread and other advocacy groups make the case for sustaining funding levels in the US Congress for poverty-focused development assistance.

Jim Stipe, US, 2011



The morning plenary session for Monday’s “1,000 Days to Scale Up Nutrition for Mothers and Children: Building Political Commitment” at the National Gathering on June 13, 2011. Speaking is Maria Otero, U.S. Under Secretary of State for Democracy and Global Affairs.

Scaling up Nutrition (SUN) Movement and the USAID’s FTF launch in 2010. Bread has been actively involved in developing the SUN framework, in the preparation for the 2010 UN General Assembly Meetings and the launch of the simultaneous ‘1,000 Days Call to Action’. Bread and Concern Worldwide co-hosted the civil society SUN event in June 2011. Asma emphasised the importance of this meeting as it brought together civil society partners, giving many of the country representatives their first exposure to SUN – “they suddenly had a voice in this global policy initiative.” Bread were heartened to learn just a few months ago that one of the country delegates that attended is now the government representative of SUN in Guatemala, and reports directly to the country’s newly-elected president.



Bread is concerned not to lose momentum after these initial gains. ENN's visit to Washington coincided with the eve of the second series of debates between the US presidential candidates, some three weeks before the elections. For the first time, Asma reflected, they have had a US Secretary of State who has "talked about development as a main pillar of her job". Indeed, Scott added, the "centre of gravity for nutrition policy has been at the state department rather than at USAID". Both agreed they will be hard pushed to get another Secretary of State with such an interest and engagement. So in the coming months, a "huge re-education" will probably be required of new key players, as the new secretary takes office and newly-elected members of Congress come to Washington.

So, I asked, how exactly does the Bread network operate? Asma described how Bread mobilises its network and local congregations, to engage their members of Congress on domestic and global hunger and poverty issues, especially around an annual legislative campaign. Bread organisers work with grassroots activists, training them on advocacy and educating them on key issues. Activities include building relationships with local newspapers, with Congressional representatives throughout the calendar year. Bread defines key issues and clear actions, providing a kit, educational materials and website to support this. Once a year, hundreds of Bread's members come to Washington DC. One good example of such action and impact was around budget cuts proposed by the Republican presidential candidate's running mate, Paul Ryan, who had suggested deep cuts to programmes vital to hungry and poor people. Bread and its partners called on Congress to create a "circle of protection around these key programmes". So far, no major cuts have happened and external consultants have attributed this in large part to the work of Bread and its faith partners.

A key aspect of their work is building the capacity of the faith community to "carry the torch on nutrition" through 'grassroots' campaigns. For the first time, Bread engaged partners in the form of US women's groups amongst their members of various Christian denominations on the issue of maternal and child nutrition. This led to the launch of the Women of Faith for 1,000 Days Movement. This in turn led to the '1,000 conversations about 1,000 Days' initiative. The campaign was built around women committing to having "1,000 conversations" about the 1,000 days - from talking to their member of congress to coffee mornings to chat with a neighbour. What struck Asma and Scott in this process is that the women proved very powerful. "The fact that the root causes of malnutrition - access to food, knowledge, education - are the same wherever you are in the world hit a chord with US women and enabled these conversations". Another example of action on the domestic front has been the Women, Infant and Child Programme targeting children.

Another role for Bread members is education of the general public around how the US can "afford" overseas programmes in tight economic times, emphasising for example, how little the US actually spends on overseas programmes, and how it is a good investment, serving national security. As well as research and education, the Institute is involved in non-legislative advocacy, e.g. policy work. A real-time example was Scott having to dash off as the ENN interview ended, to a meeting at the US Office of Management and Budget (OMB) on budget planning and investment on food security and nutrition for fiscal year 2014.

The Christian ethos is deeply engrained in Bread. There is no requirement to be a Christian

elections looming. "We can't afford to let political winds change our course".

A key area of work they are engaged with at the moment is how to define nutrition sensitive development. Bread have "called on the community" to contribute to early drafts on papers, and will be producing a paper on nutrition sensitive programming that will reflect strong inputs from UN agencies (FAO), research, academia and non-governmental organisations. Sometimes they build consensus in the process of collaborative work but that is not their primary goal. They see their role more in terms of providing a platform to ask the questions, from which consensus may emerge. They are ever mindful of their role - their job is not to write the strategy, but to ask what the strategy is and how it can be improved?

Another key issue, Asma feels, is how we talk about and use the term 'hunger'. Asma described being struck by a presentation by the head of BRAC in Bangladesh, who described how we no longer tolerated famine and starvation, yet seemed to tolerate stunting at an outrageous scale. The connections between poverty, nutrition and health are becoming clearer and enabled by the conversation around the 1,000 days window. When it comes to emergencies, their perspective and that of their members is long term. When emergencies like Haiti and Japan happened,

they didn't see a peak in donations, nor a decline. Bread understands the need for investment in systemic change. Emergencies are part of the bigger picture.

Bread and the Institute are constantly looking ahead - they produce an annual Hunger Report where they forecast and analyse key issues in the coming year. Another imminent piece of work is the 2013 Hunger Report, due for release the week of the US Thanksgiving holiday, looks at the post 2015 agenda around the Millennium Development Goals. Some of their work also combines domestic and global interests. For example, they have worked more recently on US immigration, prompting discussions on the root causes (hunger, poverty) that drive people to come to the US, as well as considering the conditions they live in, in the US.

Asma concluded by reflecting how "the power is in the people - in government, they know about Bread because of the letters they receive from Bread's members". Action at grassroots level really impacts on higher level policy making.

As Scott left for his high level government meeting, I was struck by Bread's capacity to engage at two extreme levels - the 'person on the street' through their grassroots work and the 'man in the White House', through their high level policy work. It seems that the vision of their founder holds as true today as it did more than 35 years ago, amongst this refreshingly curious and determined organisation. Making sense of nutrition - and making nutrition make sense - to the powers that be is no small task. Long may they continue.....



**Anna Lartey, associate professor and former head of department, nutrition and food science, University of Ghana, president-elect of the international Union of Nutritional Sciences. She is speaking during the panel entitled "1,000 Days to Scale Up Nutrition: Building a Movement."**

to work at Bread, however many staff - Christian and non-Christian alike - find it enables them to "come and live out their faith, working on social justice issues". They also reach out to other religious groups with shared values, in fact, the 'Alliance to End Hunger' was created in 2001 to facilitate just this. Recognising that Christian organisations were not going to be able to "do it alone", Bread created this second affiliate to engage other faith groups, corporations, and universities and provides management and staff services to the Alliance. Tony Hall, a former Congress member, is Executive Director,

Bread doesn't purport to have all the answers, far from it. They are curious and the questions they struggle with are addressed to government in order to find a solution. Their questions are not rhetorical or conceptual but are grounded in the practicalities - "Does USAID have a strategy? Do we [US government] need to organise ourselves differently to realise what we want do? Do we need to recruit new people for the expertise we need to deliver?" And when they identify needs and gaps, Scott explained, "we go and make the case on the Hill" with elected officials. They ask questions on accountability, Asma added - "Who is the nutrition focal point in the US government? We are asking all these SUN countries to identify a focal point, where is ours? Who is accountable for how we deliver on nutrition? Who is responsible for coordination between US State Dept and USAID? Whose neck is on the line if we fail to deliver?" These are critical questions as they enter into a transition period in the US government with



A PSNP beneficiary and Model Mother

Adele Fox, Concern Worldwide, Ethiopia, 2012

# Integrating Infant and Young Child Feeding and the Productive Safety Net Programme in Ethiopia



By Adele Fox

Adele Fox is currently based in Concern Worldwide Burundi office as Maternal, Newborn and Child Health Trainee. Adele completed a Masters in Public Health from the London

School of Hygiene & Tropical Medicine in 2011. She has prior experience with Save the Children UK, working as Policy & Research Coordinator and with Oxfam GB, as Systems & Resources Team Leader.

The author would like to acknowledge the involvement of Alive & Thrive for providing support and materials for this project. She would also like to thank Peter Gottert and Tigiste Abate of Alive & Thrive and Gashaw Abera, Gwyneth Cotes, Suzanne Fuhrman, and Pankaj Kumar of Concern Worldwide for their assistance in providing information and reviewing this article.

Adele Fox, Concern Worldwide, Ethiopia, 2012

School directors preparing special porridge with egg and vegetables, supervised by Hawla Eshetu, VCHW for Tebasit Kebele. They are wearing t-shirts with various IYCF messages

Concern Worldwide has worked in Ethiopia since 1973, primarily in the areas of health and nutrition, livelihoods, and HIV and AIDS.

Two years ago, Concern documented the poor nutritional situation in Dessie Zuria Woreda and the multiple obstacles hampering previous efforts to improve the situation<sup>1</sup>. Concern concluded that a multi-sectoral approach to improve infant and young child feeding (IYCF) practices and to increase access to food was among the responses needed. In 2010, the 'IYCF into Productive Safety Net Programme (PSNP)' project (IYCF-PSNP) was launched as a multi-sectoral pilot project aimed at reducing malnutrition in Dessie Zuria. The project targets poor households enrolled in the existing PSNP, as well as the general population, and addresses both the direct and root causes of malnutrition. The project aimed to develop an effective, sustainable and scalable model to improve IYCF practices in the most vulnerable households. The final results have been impressive, with large improvements in IYCF practices and a positive response from the communities and stakeholders involved in the project.

## Background

Dessie Zuria Woreda (district) is situated in the Amhara Region of Ethiopia, to the north of Addis Ababa. It is made up of 31 kebeles (clusters of villages), half of which are largely dependent on a typically unreliable and short rainy season. Dessie Zuria has been listed by the Ethiopian government as chronically food insecure for the past 11 years, and almost 40% of its population are eligible to participate in the Government's PSNP (see Box 1).

Over half of all children in Dessie Zuria (54%) are chronically malnourished and the woreda suffers from persistently high rates of acute malnutrition. Annual nutrition surveys show that between 2000 and 2011 global acute malnutrition rates have only once, in 2004, dropped below 10%<sup>2</sup>.

Concern Worldwide has supported the Ethiopian Ministry of Health to provide nutrition services for children in the woreda since 2000, through Community-based Management of Acute Malnutrition (CMAM). However, the persistently high rates of acute and chronic malnutrition showed that management of malnutrition alone was insufficient, and that a preventive approach to undernutrition was needed.

Early assessments identified food insecurity, high rates of illness, and poor IYCF

practices as contributing factors leading to high rates of malnutrition. A baseline survey conducted by Concern in November 2010 found low rates of exclusive breastfeeding (31%) and poor complementary feeding practices<sup>3</sup>. Only 13.3% of children received meals with the recommended dietary diversity, and very few children ate foods rich in iron (4%) and Vitamin A (13.7%). The sample size for the baseline survey was 694 children aged 0-23 months.

## Project description

Concern Ethiopia started the two-year project in October 2010 with funding from Alive & Thrive, a Gates Foundation initiative. The project aimed to improve IYCF practices among the most vulnerable households in Dessie Zuria Woreda in order to reduce malnutrition, as well as to test the effectiveness of this model for scaling up and replicating elsewhere.

Concern Worldwide aims to assist people living in extreme poverty to make lasting improvements in their lives. In line with this goal, Concern's programmes target the poorest and most vulnerable households in the areas where Concern is at work. In Ethiopia, the government's PSNP programme provides support and assistance to the poorest members of each community. This project was designed to link with the PSNP so that nutrition support would be targeted to those most in need of assistance. The PSNP presented an entry point to help families improve their IYCF practices, as it targets the poorest households, who are more likely to have undernourished children. The PSNP also provides many potential contact points to deliver behaviour change communication (BCC) messages.

The project was implemented through a range of strategies, but the primary focus was on fostering social and behavioural change. At the start of the project, a baseline survey was conducted and formative research was carried out. The project used a Trials of Improved Practices (TIPs) approach to identify key barriers to improving IYCF practices, as well as to identify and pre-test a set of simple, realistic actions that mothers could take to improve their child's nutrition.

<sup>1</sup> Style S. History of nutritional status and Concern's response in Dessie Zuria Woreda, Ethiopia, Field Exchange, Feb 2011, Issue 40.

<sup>2</sup> GAM based on z-scores, using NCHS 1977 reference as per Ethiopian National Guidelines.

<sup>3</sup> Standard WHO indicators were used in baseline and endline surveys of IYCF practices.

### Box 1: What is the Productive Safety Net Programme (PSNP)?

For the past decade, the Government of Ethiopia has been implementing a federal Food Security Programme (FSP) which aims to ensure food security for five million chronically food insecure people and for 10 million more who are negatively affected by food shortages during drought years. Started in 2005, one of the three pillars of the FSP is the Productive Safety Net Programme (PSNP) whose objectives are to reduce household vulnerability, improve household and community resilience to shocks and break the cycle of dependency on food aid.

It operates through payment for labour intensive public works and direct support through cash or food transfers for those unable to participate in public works. Beneficiary households are intended to acquire sufficient assets to graduate from the PSNP, at which point they receive assistance for one further year.



Figure 2: Nutrition Card of '7 excellent actions'



**Building the capacity of multi-sectoral actors at woreda, kebele and community level to deliver effective IYCF messages and encourage behaviour change**

Concern used a cascading approach to train key decision-makers and community members on malnutrition, the PSNP, optimal IYCF practices and methods for promoting behaviour change (see Figure 1). At the woreda level, a task force of key officials from across different sectors was formed and trained. The woreda officials then trained the kebele-level Food Security Task Force members, including Health Extension Workers (HEWs), Development Agents (DAs), kebele administration staff, school directors, girl's clubs in schools, Women's Affairs members and religious leaders. HEWs then trained Voluntary Community Health Workers (VCHWs) to work directly with mothers' support groups, which included one VCHW and six female members of the community. Through the mother's groups, the VCHW promoted key IYCF messages to the community

**Supporting the promotion of effective IYCF messages at key contact points, including those linked to the PSNP**

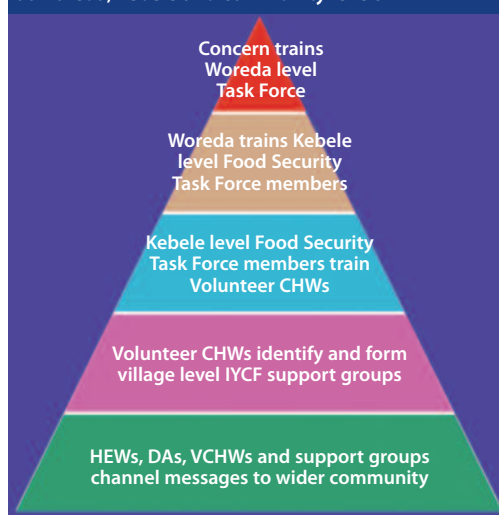
BCC was a central aspect of the IYCF-PSNP project. Findings from formative research were used to help design programme activities and messages, and the project utilised many different contact points for disseminating messages. Health workers carried out education sessions at PSNP pay days, public work days, child health days, screenings for growth promotion, and targeted supplementary feeding programme sites. Local radio and drama were also used to convey messages to the community.

Concern made use of existing resources as much as possible. One key tool was the Child Nutrition Card developed by the Alive & Thrive project, which lists '7 Excellent Actions' (See Figure 2). This tool emphasised seven simple actions that mothers and fathers could carry out to improve their child's nutrition. Families were given the poster-sized card, which lists the seven actions with a tick box next to each one for the mothers to complete. Mothers were encouraged to place them on their walls and show them off proudly to their neighbours. The messages in the nutrition card were reinforced through mother's groups, school clubs, and community outreach. Once mothers completed the seven actions, they attained the title of "Model Mother" and graduation ceremonies were held to celebrate their success. Another aspect of BCC focused on equipping community members with practical skills to improve child feeding practices. Health workers and mothers' support group members conducted house visits to provide one-on-one counselling on breastfeeding and preparation of complementary foods. Cooking demonstrations conducted at health facilities and community events allowed people to learn through observation and participation. Recipes were developed by Concern, based on food availability in the area and vegetables promoted through seed distribution.

**Enabling communities to improve their IYCF practices**

Formative research at the start of the project found that there were a number of barriers to adopting recommended IYCF practices, beyond limited knowledge and skills. Given the high levels of food insecurity in the woreda,

Figure 1: Cascade of training to multi-sectoral actors at woreda, kebele and community levels



HEW: Health Extension Worker, DA: Development Agent, VCHW: Voluntary Community Health Worker

the project found it was necessary to support families and communities with practical tools and resources to enable them to carry out the recommended feeding practices.

To improve food production, Development Agents disseminated seeds and tools to the poorest households, provided advice and support on how to diversify their crops, and promoted home gardens as well as IYCF messages. To improve the health of women and children, VCHWs referred pregnant mothers to health institutions to encourage iron supplementation during pregnancy as well as vitamin A during the postnatal period. Protected springs were also constructed by Concern to improve water, hygiene and sanitation practices.

**Engaging the entire community to foster social change**

The IYCF – PSNP programme looked beyond the traditional target population of mothers and young children, harnessing the power of a broad range of influential groups to change overall social norms around IYCF. For example, BCC targeted fathers to encourage them to provide healthy foods for their children's meals. Religious leaders were trained on key IYCF messages and were involved in local task forces.

The Smart and Strong Schools Approach is another unique concept piloted by the project. Through this activity, children in girl's after-school clubs are taught about breastfeeding, complementary feeding and hygiene, and encouraged to bring home the lessons they have learned. School directors and students enthusiastically embraced the project. According to School Director Endris Mohammed, "The girls are very motivated to share the messages with their friends and families because they understand their importance."

**Results**

During the two year project, 978 families achieved a 'model family' status. More than 850 Mother's Support Groups were trained. An endline survey<sup>4</sup> was conducted in June 2012, on a sample of 807 children aged 0-23m. There are four main seasons in the woreda: Kiremt/long rains (July-September), Meher/harvest (October-January), Bega /dry summer (February to May)

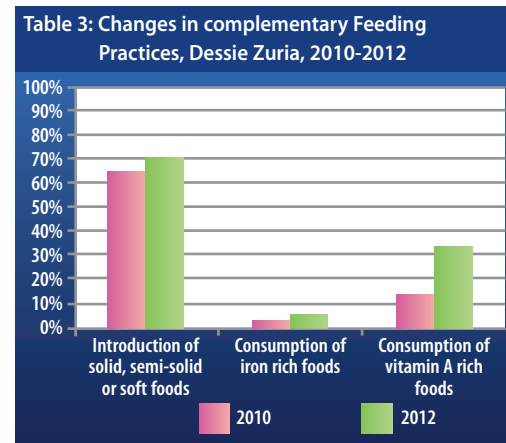
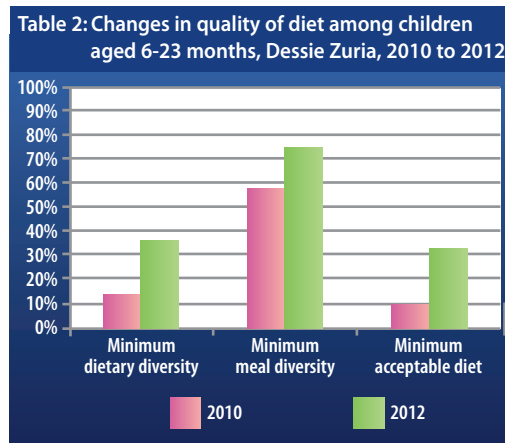
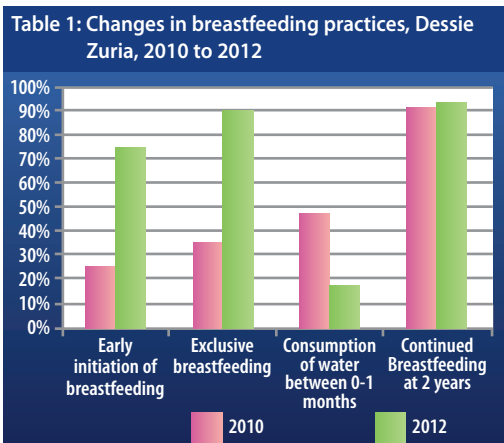
<sup>4</sup> Hailu, W, Infant and Young Child Feeding Practices in Dessie Zuria Woreda. End line survey report, Concern Worldwide, 2012



A PSNP beneficiary and Model Mother

Adele Fox, Concern Worldwide, Ethiopia, 2012





and Belg/short rainy season (May to June). The baseline study was done in November, which is the beginning of the harvest and the end line was in June which is the beginning of the hunger period. Both periods can be considered as similar with regards to the food security situation and child feeding practices. Comparing baseline with endline strongly suggests that in just a short period of time, IYCF practices have greatly improved. The percentage of mothers who reported that they had started breastfeeding their child within the first hour after birth rose from 26% to 75%, and the proportion of children less than 6 months old who were exclusively breastfed rose from 36% to 91% – a remarkable increase (see Table 1). It is the nature of the EBF indicator that the exclusive breastfeeding rate is likely to be somewhat overestimated, as it only measures whether a child received breastmilk exclusively in the previous 24 hours, and includes very young infants who are more likely to be exclusively breastfed. There was a reduction in the percentage of mothers who reported giving their children water in the first month of life, from 48% to 18%, but almost one in five children are still given water at a very young age.

The end line survey also noted improvements in complementary feeding practices, although these were less dramatic (see Table 2). Approximately one-third of children (32.7%) aged 6-23 months consumed a minimum acceptable diet, up from 10% at baseline. This increase is due to improvements in both dietary diversity and meal frequency. However, the majority of children still received foods from only 3 food groups or fewer in the previous day.

Several other indicators showed little change. There was a small increase in the percentage of children aged 6-8 months who had started complementary foods (see Table 3). The consumption of iron rich foods did not

change significantly despite recipes and messages promoting the consumption of eggs and meat. The agricultural aspect of the project did not have a livestock component, so there was no support for increasing production of animal source foods. This is something that may be considered in future projects. Another Concern project in Ethiopia has found that eggs are fairly widely available, but they are usually sold for profit.

Interviews with programme participants found that this project has been extremely well received by stakeholders at all levels, from Woreda officials to Model Mothers, many of whom can now list the recommended actions without hesitation.

One unexpected outcome of the project has been increased implementation of appropriate maternity leave for pregnant and lactating women. Prior to the project, these women normally participated in public work days as part of the PSNP. The project has been effective in creating an understanding of the importance of rest for mothers to give them time to recover and establish breastfeeding. As a result, women were excused from doing public works during pregnancy and for the first 4 months after birth, attending health and nutrition sessions instead (PSNP payments continued during this time).

**Lessons learned**

A number of factors contributed to the success of the IYCF – PSNP project. The project took a multi-sectorial approach, involving actors across a wide range of groups and sectors. It went beyond simply BCC, targeting the enabling environment as well as social norms, and involving the community at large. The project used multiple platforms and approaches to disseminate messages, and used a targeted

approach to behaviour change, basing project activities and messages on formative research and emphasizing simple, do-able actions rather than health education messages.

The project engaged with actors from agriculture, education, women’s affairs, and health sectors. Each sector worked together towards a common purpose, leading to increased ownership and accountability. In an interview, one School Director described IYCF as now being “everyone’s responsibility.” This approach also provided greater opportunities for engaging with communities. Cooking demonstrations, school clubs, and agricultural support were all combined to provide an overall aim of preventing malnutrition among children.

The project worked across levels, creating strong links between woreda, kebele and community levels through a cascading style of training and through the continued provision of support and supervision. This multi-level approach has had many advantages; for example, Hawa Hussein, a VCHW in Guguftu Kebele explained that if she has a problem, such as a lack of knowledge on an issue, she can contact the HEW or other member of the Kebele Food Security Task Force.

The project went beyond traditional communication approaches, using a social and behavioural change model. Early assessments showed that simply providing messages alone was unlikely to be effective, given widespread food insecurity and other barriers to behaviour change. This project aimed to influence the wider community and social norms as a whole, as well as address barriers to practising recommended IYCF behaviours. For example, policies around women’s maternity leave were strengthened, agricultural support addressed

**Figure 2: Non-traditional community targeting on IYCF**



The multi-level Guguftu Kebele team including Zewditu Jemal and Amakel Ahmed (HEWs), Hawa Hussein (VCHW), Fato Assen (support group member) and Seada Mohammed and Aminat Seid (Model Mothers), who work together to reach all households in the kebele with the essential IYCF actions.



food insecurity, and support to water and health services aimed to prevent common illnesses.

**Conclusions**

Using a comprehensive, multi-sectorial approach to social and behaviour change has resulted in impressive improvements in a number of IYCF practices over a short time. The IYCF-PSNP project has been commended as innovative, effective, and sustainable by a wide range of stakeholders within Ethiopia, and interviews with community members showed that mothers and other community members have enthusiastically embraced the project and materials.

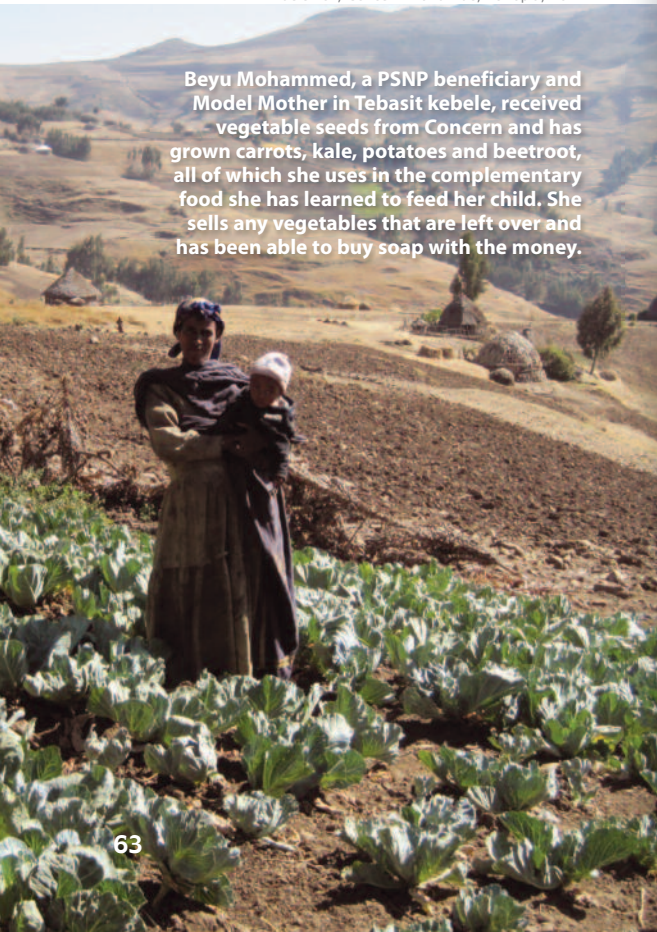
The approach has been able to reach a large number of people who are widely dispersed over challenging terrain. Channelling activities through the PSNP creates additional contact points and ensures targeting of the poorest households. The two year pilot also suggests that despite strong linkages with the Government and a sense of community ownership, longer term support will continue to be necessary to address underlying factors of malnutrition such as food security, health, and hygiene, as well as to reinforce the gains made.

Possible areas for future investigation include engaging the private sector for producing ready to use fortified complementary foods, increased water and sanitation activities within communities, strengthening linkages with livestock support to promote consumption of iron-rich foods, and the integration of Concern IYCF centres with community gardens to alleviate food insecurity.

Concern is currently in the process of replicating this project in four other woredas in Ethiopia.

For more information, contact: Pankaj Kumar, Assistant Country Director, Concern Ethiopia, email: [pankaj.kumar@concern.net](mailto:pankaj.kumar@concern.net).

Adele Fox, Concern Worldwide, Ethiopia, 2012



Beyu Mohammed, a PSNP beneficiary and Model Mother in Tebasit kebele, received vegetable seeds from Concern and has grown carrots, kale, potatoes and beetroot, all of which she uses in the complementary food she has learned to feed her child. She sells any vegetables that are left over and has been able to buy soap with the money.



HKI, Bangladesh, 2012

# Helping homestead gardeners mitigate the impact of soil salinity

Improved compost pile

By Erica Roy Khetran



Erica Roy Khetran is the Country Director for Helen Keller International (HKI) in Bangladesh. She has lived and worked in Asia since 2004 with a focus on emergency, food security and nutrition programmes.

The soil salinity survey was led by Project Laser Beam team members, Md. Hafizur Rahman and Moshfikur Rahman-Sr. Thanks to Md. Amun Uddin for his extensive inputs into this article (including photos) and leadership in assisting homestead gardeners in Shymnagar.

Field Article

**H**omestead food production (HFP) is an effective way to help poor families increase access to nutritious food and new sources of income. HFP enables women to access fresh vegetables for themselves and their children directly, instead of relying on a male family member to purchase them. Furthermore, proceeds from household gardens are usually controlled by women and thus more likely to be used for education, healthcare and other activities, which directly benefit women and children. Helen Keller International (HKI) has implemented HFP programmes throughout Bangladesh since the early 1990s. As part of the global Project Laser Beam initiative, the Kraft Foods Foundation is currently supporting HKI to increase women's asset base and food security through HFP, improve nutrition, address gender barriers and intra-household communication and strengthen farming groups.

However, a changing climate requires that new practices be integrated into strategies to promote HFP, particularly in the vulnerable areas of southern Bangladesh that face frequent floods and cyclones. Shymnagar, a sub-district in south-western Bangladesh bordering the Bay of Bengal, is particularly vulnerable to floods and storms. The impact of these events on food production can persist for years. In May 2009, the area was hit by tropical cyclone Aila, a category 1 storm. Heavy rain and wind led to a tidal surge of up to 10 feet and several rivers broke through embankments (already weakened by nearby shrimp farms which cut holes through the embankments to flood their ponds), causing widespread inland flooding. In some areas, 2-3 feet of water remained for up to 20 days. In addition to immediate destruction of homes,

crops and assets and widespread displacement, the waterlogging damaged fruit and timber trees and resulted in increased soil salinity which, three years later, continues to inhibit agricultural production.

The soil salinity is worst during dry periods. The spring of 2012 was particularly dry, with no rainfall during the month of May, according to the local farmers and the Department of Agricultural Extension. With support from the Kraft Foods Foundation, HKI surveyed the impact of soil salinity on household gardeners in Shymnagar during this period and rolled out strategies to help families continue vegetable production.

**Soil salinity in formerly flood-affected areas**

A survey, including visits to 144 gardens and three focus group discussions, was conducted in late May, 2012, by HKI's Project Laser Beam staff. The purpose of the survey was to assess the impact of soil salinity on vegetable cultivation in Shymnagar, identify the most tolerant varieties of vegetables, document local practices to cope with salinity and, ultimately, develop recommendations to assist families in areas with high salinity with continuing vegetable cultivation. All households had previously been provided with eight varieties of summer vegetable seeds and HFP training by Project Laser Beam.

Of the surveyed household gardens, levels of soil salinity were very high in 38% of gardens and moderate in another 34%. A total of 14% of gardens were completely destroyed by soil salinity, meaning that no seeds could successfully germinate. In the most saline areas, farmers and the local Department of Agricultural Extension report that, following cyclone Aila, standing flood waters persisted for 15-20 days. In moderately saline areas, flood waters stood for seven days or less. No gardens were



found to be completely without soil salinity. In the most affected areas, household ponds, the primary source of irrigation, were also extremely saline and thus unsuitable for irrigation.

About half of households were already implementing practices to cope with soil salinity. Among these, 38% were using organic compost and 34% were planting crops in pits which were first leached with water. However, households with the knowledge and means to adopt these practices tended to be among the better off; poor households who are more reliant on their gardens for food and income had fewer coping mechanisms and were thus most affected by the salinity.

It is worth noting that the increased soil salinity since cyclone Aila has affected other aspects of the food production system in Shymnagar. Small farmers report that production of rice, an important cash crop and source of food, has decreased since the storm. Households with access to larger plots of land have moved from rice cultivation to shrimp cultivation, which provides fewer day-labour opportunities for poor households.

### Mitigating impact of soil salinity on home gardens

Based on survey findings, HKI promoted several practices to help families whose lands were very affected by salinity, continue HFP. This strategy focused on practices that required minimal or no financial investment, recognized the limited availability of fresh water to irrigate and flush the soil, and could be implemented primarily by women.

Key practices included mulching with rice straw, coconut coir or other locally available organic materials to increase water retention of the soil. Households were able to obtain these materials free of cost, in most cases from their own family farms. Development of compost pits near homestead gardens and use of compost in preparing and managing the soil was also encouraged. Compost effectively increases organic content and available nutrients in the soil, helping to counteract the effects of salinity. Composting is free of cost, but requires an ongoing investment of time and space on the part of families. Lime, purchased by households from the open market, was also used to treat saline soil. The cost of lime was minimal and easily managed by households. However, given cultural limitations on access to markets, women frequently needed to request that a male family member purchase the lime.

Leaching requires covering the area with sufficient water to fully infiltrate the soil and stand on the surface before being drained away. This is effective, but for families with limited access to fresh water leaching is impractical for large areas. HKI encouraged two practices that enabled households to increase production by leaching much smaller areas. First, sowing of seeds in beds, with the soil first leached of salt and then prepared with mulch and compost. Families then transplant seedlings to larger fields after heavy rain, when the soil is less saline. Secondly, HKI promoted 'pit cropping', in which households sowed crops in small pits which were first leached and prepared with compost. This was most effective when combined with other practices, including seed beds and use of mulch and lime.

Finally, HKI's survey found significantly greater resilience in salinity among some vegetable crops. These include Indian spinach, sweet gourd, okra and Kangkong- a leafy green vegetable rich in vitamins A and C as well as iron and calcium. In most cases, promotion of these vegetables required distribution of seeds directly to households. This is particularly true for Kangkong, which was among the most saline-resistant crops but is relatively new to southern Bangladesh. Thus this strategy, while highly effective, may not be practical in programmes which do not have resources for agricultural inputs.

### Container gardening

In areas most affected by soil salinity, even leaching and measures to increase soil water retention and nutrient content will not enable households to grow vegetable throughout the year, or will only enable gardeners to produce a limited number of crops (mainly kangkong and Indian spinach) in the dry season. Container gardening is an effective strategy to increase the number of planting seasons and garden diversity in these areas, though ongoing training and technical support is required to introduce this new practice.

Containers available to households in Bangladesh at low- or no-cost include nylon bags (such as those used for animal feed), jute shopping bags, old metal and plastic buckets with holes in the bottom and used clay pots. Containers should be about 20 litres in size. A variety of media can be used for planting, including compost, rice hulls, sawdust and chopped wheat straw. 'Manure tea' (water in which cured manure has been steeped) is one low-cost method to fertilise these media.

When fertilised and irrigated regularly, this strategy enables households with very limited access to non-saline soil grow vegetables throughout the year. HKI's experience has been that homestead gardeners are at first sceptical that planting in non-soil media will work, and thus demonstration sites are critical to ensuring the practice is adopted.

### Conclusions

This set of practices was identified to meet the specific needs of households in southern Bangladesh. However, most are applicable to the growing number of areas in the world where poor households are affected by increased soil salinity. Most methods are very low cost and, with the exception of promoting new varieties, can be achieved with no additional inputs. The ability of households to replicate all practices was increased by working through Village Model Farms, which offered demonstration sites and a space for meeting and training to all homestead gardeners in a village.

Considering effectiveness in mitigating soil salinity and low cost to beneficiaries in terms of labour, money and time, mulching and planting of seed beds are highly replicable strategies that can be easily integrated into any HFP programme. Digging and treatment of pits for crop plantation are also very effective and most households do not find it to be overly labour intensive. However, introducing this practice requires a relatively high level of expertise by programme staff in order to demonstrate the correct method of soil management and planting for various types of crops. Composting is a practice that poor households have found more difficult to adopt. Properly managed compost pits require allocation of appropriate space (which can be scarce on small homesteads) and ongoing effort to maintain. Nonetheless, composting is very effective in mitigating soil salinity and increasing soil water-holding capacity. A key component of healthy gardens, composting also brings other benefits such as discouraging the use of chemical fertilizers and increasing crop productivity in any environment. It is therefore worth developing tools and techniques to promote composting in areas where vegetable cultivation is a priority strategy to increase nutrition and income for poor households.

For more information, contact: Erica Roy Khetrans, email: ekhetran@hki.org



Fully damaged garden, with the garden's owner



Partially damaged garden



Village model farmer demonstrates adding compost to pumpkins planted in pit crop system



# People in aid



Participants in UNICEF/GNC/SCUK workshop on IYCF in development and emergencies (see news piece)



Josephine Ippe (GNC Coordinator), with her husband, James, and their beautiful new arrival, Joy.



Congratulations to Phil and Gemma Wilks on the arrival of Matilda on 30th November. If the ENN website starts slowing down, blame the baby.....





## Invite to submit material to Field Exchange

Many people underestimate the value of their individual field experiences and how sharing them can benefit others working in the field. At ENN, we are keen to broaden the scope of individuals and agencies that contribute material for publication and to continue to reflect current field activities and experiences in emergency nutrition.

Many of the articles you see in Field Exchange begin as a few lines in an email or an idea shared with us. Sometimes they exist as an internal report that hasn't been shared outside an agency. The editorial team at Field Exchange can support you in write-up and help shape your article for publication.

To get started, just drop us a line. Ideally, send us (in less than 500 words) your ideas for an article for Field Exchange, and any supporting material, e.g. an agency report. Tell us why you think your field article would be of particular interest to Field Exchange readers. If you know of others who you think should contribute,

pass this on – especially to government staff and local NGOs who are underrepresented in our coverage.

Send this and your contact details to:  
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### Cover

A woman in receipt of WFP food assistance in Al-Mahweet, Yemen;  
WFP/Abeer Etefa, Yemen, 2012

*The opinions reflected in Field Exchange articles are those of the authors and do not necessarily reflect those of their agency (where applicable).*



## The Emergency Nutrition Network (ENN)

grew out of a series of interagency meetings focusing on food and nutritional aspects of emergencies. The meetings were hosted by UNHCR and attended by a number of UN agencies, NGOs, donors and academics. The Network is the result of a shared commitment to improve knowledge, stimulate learning and provide vital support and encouragement to food and nutrition workers involved in emergencies. The ENN officially began operations in November 1996 and has widespread support from UN agencies, NGOs, and donor governments. The network aims to improve emergency food and nutrition programme effectiveness by:

- providing a forum for the exchange of field level experiences
- strengthening humanitarian agency institutional memory
- keeping field staff up to date with current research and evaluation findings
- helping to identify subjects in the emergency food and nutrition sector which need more research.

The main output of the ENN is a tri-annual publication, Field Exchange, which is devoted primarily to publishing field level articles and current research and evaluation findings relevant to the emergency food and nutrition sector.

The main target audience of the publication are food and nutrition workers involved in emergencies and those researching this area. The reporting and exchange of field level experiences is central to ENN activities. ENN's five year strategy (2010-2015) is available at [www.ennonline.net](http://www.ennonline.net)

### The Team



Jeremy Shoham (Editor), Marie McGrath (Sub-editor) and Carmel Dolan are ENN Technical Directors.



Thom Banks is the ENN's Desk Operations Officer and provides logistical and project support to the ENN team.



Chloe Angood is a nutritionist working part-time with ENN on a number of projects and supporting Human Resources.



Michele Toler has joined the ENN as Operations and Finance Assistant, based at the ENN's office in Oxford, UK.



Matt Todd is the ENN financial manager, overseeing the ENN accounting systems, budgeting and financial reporting.



Orna O'Reilly designs and produces all of ENN's publications.



Phil Wilks ([www.fruitysolutions.com](http://www.fruitysolutions.com)) manages ENN's website.



After 4 years working with the ENN as mailing assistant, Katherine Kaye has recently left the ENN. With her valuable help, many of you will have received Field Exchange and our other resources over the years. The ENN team warmly acknowledge Katherine's contribution to the work of the ENN and wish her the very best in her new ventures.



The Emergency Nutrition Network (ENN) is a registered charity in the UK (charity registration no: 1115156) and a company limited by guarantee and not having a share capital in the UK (company registration no: 4889844). Registered address: 32, Leopold Street, Oxford, OX4 1TW, UK. ENN Directors/Trustees: Marie McGrath, Jeremy Shoham, Bruce Laurence, Nigel Milway, Victoria Lack, Arabella Duffield





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