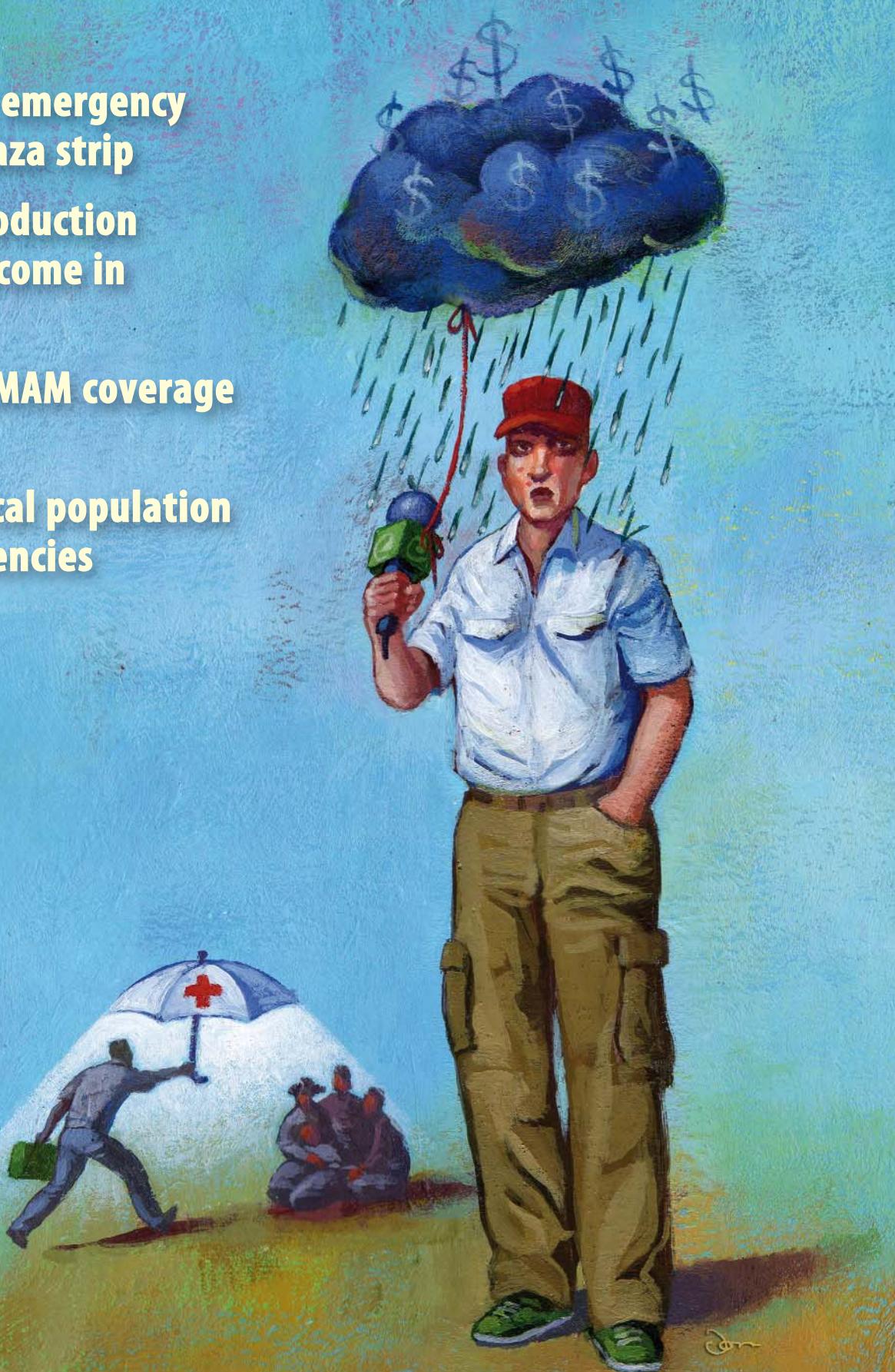


Field Exchange

Emergency Nutrition Network

- Challenges of emergency response in Gaza strip
- Local RUTF production and farmer income in Malawi
- SQUEAC and CMAM coverage in Ethiopia
- Estimating local population size in emergencies



Doom and Gloom

Does the media present an accurate picture of emergency response? – *editorial*

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From the Editor

This issue of Field Exchange comes out in the wake of the Haiti emergency. Although the relief effort is continuing, the acute phase of the emergency is arguably over at the time of writing, with humanitarian efforts now focused on rebuilding infrastructure – especially provision of shelter and homes. In following, and participating in (see next Field Exchange issue 39) the unfolding events, the ENN became acutely aware of the media coverage of the emergency and not for the first time found it exasperating.

"The worst emergency the world has ever faced", "chaotic relief distributions with no-one knowing who is in charge", "seven days since the quake struck and people still haven't received water, food or health care". These quotes signify the main thrust of global media coverage of the Haiti earthquake disaster and of the international community's response. Although there has been no rigorous analysis yet, the overwhelming majority of written, TV, internet and radio coverage of the emergency chose to highlight equally the appalling circumstances of the 'quake's victims and the "failure of the international humanitarian system to do anything about this".

While this type of media coverage may be appropriate in one sense, i.e. to help mobilise political commitment at government and civil society level, it was also by turns grossly inaccurate and heavily skewed towards sensationalism. Key facts and contextual factors which largely explain how the international response unfolded were omitted or relegated to 'throw-away' paragraphs. Critical information which were not highlighted includes the fact that Haiti is one of the poorest countries in the Western hemisphere with the least capacity to host and support an international humanitarian response – particularly in the area of security. To add to this, up to 200 UN workers, including the Humanitarian Coordinator, were killed by the 'quake making it virtually impossible for the UN to hit the ground running. There was little acknowledgement in coverage that the international organisational response embedded in the recent humanitarian reform process and involving 12 sectoral clusters worked relatively well, with excellent sectoral coordination being achieved within the nutrition sector in a few days. There was little mention either that the humanitarian workers on the ground worked inhuman hours often with nowhere to sleep and no washing facilities and as a result were burning out in a matter of days resulting in high levels of staff turn-over. The scale and speed of crisis meant that if this disaster had happened in the US or another rich Western country (remember Hurricane Katrina) there would still have been enormous challenges in mounting a response.

Whether, as claimed and widely reported, this was the worst emergency the world has ever faced depends on how you measure the degree of an emergency. Key indicators of mortality, morbidity and malnutrition that are normally used to measure a crisis suggest that Haiti will be remembered as a moderate emergency only. If the extent of the emergency is measured in terms of the speed of response, then again Haiti fared moderately well compared to numerous less publicised 'silent' emergencies over the past 30 years. Such claims therefore reflect lack of institutional memory amongst the media, their need to create sensational news and a considerable lack of rigour within the media profession.

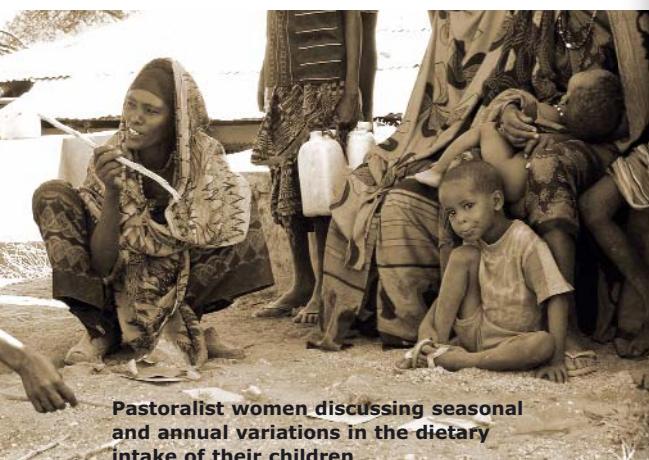
The question has to be asked whether this type of media hype matters, if the end product is greater urgency of response. Well frankly it matters a great deal. Never mind the fact that the truth is being distorted while feeding into the fears and biases of the watching world, such coverage undermines the credibility of the international humanitarian system and may well have implications for short and medium term funding. Furthermore, in the early days of a response when information is often lacking, the humanitarian agencies themselves may be looking to the press reports emerging to guide their response – some information is better than no information. Or is it? On a more human level, it also undermines the morale of the systems foot-soldiers. Implied criticisms of the men and women who often risk life and limb – not to mention emotional health, working in the kind of physical environment that very few of us could endure, is akin to publicly criticising an army in the middle of battle. The parallels are obvious except that the international community is not waging a war here, but trying to save as many lives as possible.

So why does the media succumb to this type of half-truth sensationalist coverage of humanitarian crises? There may be several reasons. Gone are the days when the media had resident 'stringers' in country with intimate knowledge of context. Now, journalists (many of whom are very young) are 'parachuted' in with no knowledge of the country and limited knowledge of the humanitarian system. At the same time, they are acutely aware of the need to come up with a story that somehow surpasses the horror of previous emergencies. There also appears to be an anti-'good news' culture in the media. Reporting on a system working well within the confines of what is possible is not newsworthy.

There are, of course, exceptions in the media. A number of experienced journalists who have witnessed past emergencies and have a realistic understanding of the humanitarian response process provide more balance and broader perspective. It is also noticeable that as the emergency unfolded, coverage gradually became more balanced. This almost certainly reflects the steep learning curve of journalists as they witnessed what the system achieved against often impossible odds. There is always the hope therefore that some of these journalists will maintain an interest in humanitarian crises and response and be better informed in future coverage. However, the overwhelming balance of media coverage remains sensationalist and devoid of meaningful analysis.

Questions therefore have to be asked about accountability of the media with respect to providing the public with real and balanced information. Why is it that the humanitarian system is rightly held to account in terms of performance (although there are weaknesses here as well) whereas the media isn't? The humanitarian system does not have the resources or the appetite to challenge what is written or presented about it in the 24 hour global media. It is too busy saving lives. The rewards for those who work in the system are often charges of failure and incompetence and sometimes worse - neglect. Nothing could be further from the truth. Isn't it time we examined closely how the media covers this type of emergency with a view to strengthening its professionalism and holding those who work as journalists, to greater account?

Speaking of hidden emergencies, this issue features two articles that share experiences around the humanitarian response on infant and young child feeding (IYCF) during the 2008/09 Israeli bombardment of the Gaza strip. One article describes the experiences of a local organisation, Near East Council of Churches Committee for Refugee Work (NECC-CRW) that has been working in the area for 42 years, and is supported by Dan ChurchAid. The second



Pastoralist women discussing seasonal and annual variations in the dietary intake of their children

Kate Sadler. Location: Somali Region, Ethiopia. 2008



relates the experiences of the Save the Children responses to the acute crisis through their established local partners. Both articles reflect the strong commitment and concern of each organisation to meet the nutrition needs of infants and young children. They also serve to highlight some of the challenges of operating in such a complex and chronically debilitated environment. Key questions around policy guidance and the challenges and reality of implementation are inevitably raised.

The NECCCRW article describes how their intervention was built upon an established clinic programme of nutritional counselling, micronutrient supplementation and follow-up. The new project involved comprehensive household screening and diagnosis/referral of malnutrition and anaemia, development of a new database to enhance the management of patient data and follow up, and supplementary feeding through the supply of infant formula to malnourished children. The article from Save the Children describes a detailed assessment of infant and young child feeding practices, fuelled by concerns around the widespread distribution of breastmilk substitutes (BMS) during the acute emergency response, complementary feeding needs, and chronic under-nutrition in the population compounded by poor pre-crisis feeding practices.

Save the Children's assessment found poor feeding practices such as low exclusive and continued breastfeeding rates, which were pretty typical of the situation pre-conflict. Many mothers reported reducing or in some cases, stopping breastfeeding during the conflict but not due to BMS availability (one-third of assessed mothers had received infant formula in distributions). Rather feeding problems, stress and lack of food were their reasons. Diarrhoea prevalence was high (38% when corrected for season) but no associated cause was identified. The authors suggest that the distribution of BMS probably reinforced poor feeding practices. In addition, the humanitarian effort failed to recognise or act on other essential components of mounting an infant and young child feeding in emergencies (IFE) response – for example, breastfeeding counselling and support in a traumatic situation and food for mothers. Lack of awareness of key policy guidance – the International Code, Sphere standards, the Operational Guidance on IFE – by national and international players were identified as part of the problem. However, the authors also allude to the challenges of implementing policy guidance in a context of pre-existing high BMS use and low exclusive breastfeeding; this is a critical point.

The supplementary feeding programme that NECCCRW operated was, in many respects, atypical. Children were admitted under weight for age and height for age (stunting) criteria as well as weight for height. This complicated interpretation of exit indicators and lengths of stay in relation to Sphere standards. Most controversial was the use of infant formula targeted at malnourished children aged 6m-3 years of age. At face value, this contravenes policy guidance that seeks to protect and support breastfeeding, and not mix formula feeding and breastfeeding. But what do you do in an emergency-affected population where this is the prevalent practice? Any review of NECCCRW's programming has to be interpreted from the perspective that we honestly don't know how to respond programmatically in this type of situation. It is also important to take into account the fact that infant formula was provided in a monitored programme, attached to a clinic, with a community household visit programme and with committed care and follow-up. Such a programme should not be 'tarred with the same brush' as distribution of infant formula from the back of a truck. There are still issues to consider, for example, was infant formula use really warranted or could it have been used to fortify foods rather than distributed as a drink? – but understanding the origin, rationale and context of this programme is critical to determining realistic expectations around programme design.

These experiences raise the question, can we expect to achieve optimal standards of care in every emergency from the word 'go' or is compromise necessary in the immediate term and if so, how can this 'middle ground' be negotiated and managed? A related question is how can policy guidance respond to national contexts? The International Code of Marketing of BMS doesn't ban the use of infant formula but seeks to ensure fair play; it protects against inappropriate marketing while supporting stipulation that it is used for infants that need it and that packages are in appropriate language, etc. The Code should be enacted into national legislation and is a key emergency preparedness action; this allows the context to be reflected in legislative law and carries the weight of national law with it as a result. The Operational Guidance on IFE, currently reflected in the updated version of SPHERE, was produced through an inter-agency collaboration to address field challenges during IFE response. Again, this guidance doesn't ban infant formula use; if infants are artificially fed, then action is needed to minimise the risks. So there is room for pragmatism in the guidance; but consid-

ered and informed coordination is needed to enable this. Lack of clear leadership on IFE in Gaza was highlighted by Save the Children as a limiting factor. Experiences from many past and current emergencies show how critical leadership is to ensuring optimal IFE programming.

What is obvious from both articles is that context is everything. Standalone guidance does not work. Provisions need to be integrated into national policy guidance. NECCCRW's programming was informed by national guidance and policy; this is the policy framework that needs to be strengthened. International agencies must work with national governments and long term local partners – like NECCCRW – to review and develop policy guidance and perhaps most critically, to identify constraints to implementation and how best to overcome these. These types of considerations were the focus of a regional workshop on IFE in Bali held in 2008 involving 16 country teams (each with local NGO and government representation). Teams were tasked with having to come up with country actions plans. Top of the 'to do' list was strengthening national policy guidance that reflected the provisions of the Operational Guidance on IFE and the Code. Follow up with country's eight months later found 10 out of 11 countries had moved on this action point¹. A similar model could be applied in the Gaza context.

A conclusion we draw from the Gaza articles is that we need to see how to contextualise our expectations of standards in emergencies and how to help both those working long-term in chronic situations and those responding to acute-on-chronic emergencies achieve best practice.

A final point with respect to these two articles is that Gaza represents a prime example of the artificial distinction often made between emergency and non-emergency contexts. The most recent conflict only exacerbated the existing poor living conditions. Many of the challenges and recommendations that emerged from the Save the Children assessment were aimed at addressing chronic issues. Yet, the spotlight of international media attention on Gaza soon dimmed once the Israeli bombardment was over, leaving the population to once again endure the less sensational chronic deprivation to which it had habituated. At the ENN we wonder whether some of those journalists tripping over each other to sensationalise the Haiti emergency could be redeployed to other parts of the world, where chronic and largely silent emergencies continue and are underfunded.

Finally, we would like to express our appreciation of NECCCRW's submission of an article to Field Exchange, supported by DanChurchAid. The pages of Field Exchange are dominated to a large extent by international agency perspectives. The NECCCRW contribution has raised issues and questions that are slightly out of our 'comfort zone' while being consistent with a true 'field exchange'. We encourage more contributions to 'rock the boat'.

Jeremy Shoham, Editor
Marie McGrath, Sub-editor

Any contributions, ideas or topics for future issues of Field Exchange? Contact the editorial team on email: office@ennonline.net

¹ (2009). Evaluation of regional IFE workshop. Field Exchange, Issue No 36, July 2009. p23.
<http://fex.ennonline.net/36/evaluation.aspx>



Population Explorer:

Estimate local populations anywhere

Half-metre resolution satellite image shows Port-au-Prince, Haiti after a 7.0-magnitude earthquake struck the area on Jan. 12, 2010.

By Lisa Jordan and Rob Rose



Lisa Jordan is jointly Assistant Professor of Geography and Public Health at Florida State University. Her areas of research include population geography and geographic information systems (GIS).



Rob Rose is an early warning and food security expert. He co-founded Kimetrica, the consulting group who developed the Population Explorer web tool described in this article.

The authors wish to acknowledge the support of Gary Eilerts of USAID and Kimetrica's Nairobi based software development team.

This article describes the practical application of a web based tool that enables prompt population size estimates, including those affected by acute disasters.

As this paper is being written, it is only 12 hours after a devastating earthquake has hit Haiti. The best estimate of how many people have been affected in this major disaster is just being formulated. As is most often the case, the estimate will likely be based on astonishingly cursory and poorly-supported educated guesses. From these estimates, multi-million dollar humanitarian resource allocations will be made. How accurate are these estimates and what are the consequences and costs of being wrong? The short answer is 'unknown and substantial'. The need for better demographic information to respond to humanitarian crises is clear. This is especially important when crises occur within or across administrative boundaries in data-poor countries and where there is limited idea of the reliability of population estimates.

Better population estimates are possible
There is better information available to inform such estimates. LandScan™ is a U.S.

Department of Defence-funded dataset of global population distribution (2008 data currently in use), produced by Oakridge National Laboratories in the U.S. state of Tennessee. It intelligently estimates population totals for local areas down to a scale of 1 km². LandScan™ is developed using census data, road networks, satellite imagery and proximity to coastlines, land use, slope and elevation, among other factors, to establish where people live. But it is hard to use, requiring expert mapping skills and additional geographic data, such as administrative boundaries, to extract and estimate local population values.

In 2004, LandScan™ was used by the author and a colleague¹ while working with the World Food Programme (WFP) to make almost immediate estimates of the number of people affected by the Indian Ocean tsunami. Seventy two hours after the event, LandScan™ estimates were used by WFP headquarters to inform assessments of emergency needs. One year later, population estimations confirmed that the

estimation, calculated only a few days after the event, was consistent with the best official estimates of people affected.

Making it easy for anyone to use

Realising the opportunity that LandScan™ offered to improve rapid population estimates, the development group Kimetrica² developed a concept proposal that was funded under USAID's FEWS Net³ activity; Kimetrica created Population Explorer, a web-based population estimation tool (www.populationexplorer.com)⁴. This tool brings LandScan™ and an intuitive mapping interface together in a simple to use web application (See Box 1).

¹ Rob Rose and Benjamin Watkins

² Kimetrica is a consulting group whose mission is to improve the quality and accountability of service delivery in the non-profit sector, through the provision of affordable knowledge management tools, data, and training services.

³ Famine Early Warning Systems Network

⁴ In addition to modifications and enhancements to Population Explorer, Kimetrica has integrated mapping and population estimation into a non-profit contingency planning web service, Crisis Toolkit (www.crisistoolkit.com).

The flexibility that Population Explorer offers for making estimates suits a wide variety of relief needs in response to disasters or crises. For example, point buffers provide rapid demographic summaries that may describe the number of people affected by an industrial accident, emanating from a factory or source of contamination. Line buffers can provide information on the number of people living within a specified distance from a road, or a river, possibly critical information for development planning or emergency response. The ability to specify user-defined areas makes Population Explorer estimates fit the needs of the user, delineating exactly, and only, the areas of interest, be they river

Box 1: Basic operation of Population Explorer

The basic operation enables the user to estimate population numbers in a user specified area. Specialized training is not required to use the tool and access can be obtained via www.populationexplorer.com

How to use it

- Zoom in or out of the global population dataset (this is integrated with Google Earth/Street or Microsoft Virtual Earth) and simply 'click' to navigate to a particular area of interest.
- Choose to retrieve population estimates by uploading maps of areas of interest or by drawing free-hand shapes, selecting these options from the toolbar.
- From your map, Population Explorer calculates the total estimated population, including age and sex breakdowns, and population densities, of the selected or drawn area.
- Users may also simply draw a line (along a road, border, or area of interest), and then specify a distance from the line, creating a buffer area from which Population Explorer estimates how many people live inside the buffer (line buffer). This is shown in the Samoan Island example in Figure 3.
- Users may do the same thing for a point they select on the map, and Population Explorer will estimate how many people live in a circle of a user-defined size around it (point buffer).

Also shown in Figure 3, users may select to display a 'Density Map', which colour codes areas within the shape with colorful representations of higher and lower population densities.

Figure 1: Estimate of population of Kaputa Rice Livelihood Zone in Zambia

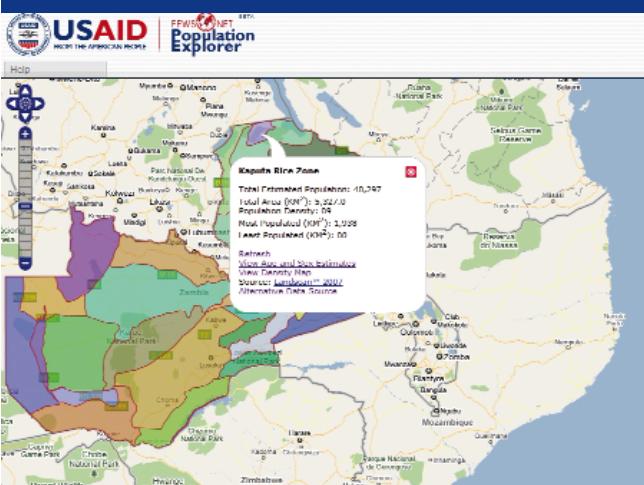


Figure 2: Estimate of tsunami affected population of Samoan Islands, 2009



deltas, flood zones, drought-affected areas, livelihood zones, or areas of dispute or unrest.

Once an area of interest and analysis is identified, and an estimate or graphic produced, the user can print or digitally save the map to share the findings with others. Users may select a variety of map backgrounds for their analyses, using the 'Change Background' button in order to select Google Street or Virtual Earth Roads views, Google or Virtual Earth Satellite views, or Google or Virtual Earth hybrid views, which combine satellite and street views. The help tab on the Population Explorer site, directs users to explanations of the software and data sources, and tutorials for using the website.

How is it applied in emergencies?

Population Explorer answers basic questions about the human population living in any area of interest. Typical questions include: how many people live here? What are their characteristics? How many women live here? How many men? How many children? What is the age structure of this population? How many people will likely be living here in the future? The tool allows these questions to be answered transparently, at the country, district, cross-border, or local level, for any user-defined area. Here are some examples of how it has been used in emergency contexts.

Livelihood Analysis

FEWS Net early warning analysis is based on an analysis of homogenous livelihood zones where people utilize the same basic strategies to earn their income, produce their food, and respond to food security hazards that periodically beset them. Very often, however, livelihood zones cross administrative boundaries, for which only official population estimates are usually available. Knowing how many people live in a livelihood zone is generally very difficult. But Population Explorer allows anyone to calculate the size of a population and its demographic characteristics at the livelihood zone, or in any other user-defined area. An example is given in Figure 1 that shows the Kaputa Rice

Livelihood Zone in Zambia, and a Population Explorer estimate of the number of people living in it. This information provides early warning analysts, disaster managers, and government administrators with a better basis to understand the dimension and types of impacts of a specific hazard, and facilitates a more accurate match of emergency responses for it.

Flooding and tsunami impacts

On 29 September 2009, a deadly tsunami hit the Samoan Islands. Within minutes of the disaster, Kimetrica personnel were able to provide an estimate of the number of people living within a half kilometre of the coastline impacted by the tsunami. Even without a digital map of the tsunami impact area, the Population Explorer estimate was possible. It was derived by using a line drawn along the tsunami-facing coast, and having Population Explorer calculate the LandScan estimated population found within half a kilometre of the line (see Figure 2).

Catastrophic Disasters: Haiti Earthquake.

On January 12, 2010 a catastrophic 7.0 magnitude earthquake occurred in Haiti. Within minutes, Population Explorer was used to determine an initial estimate of the population in the earthquake zone.

Using maps provided by the US Geological Survey Shake Maps⁵, Population Explorer was used to come up with these initial estimates (reflected in Figure 3):

Heaviest Impact: A maximum of about 3,725,615 people live in areas where the shaking was strongest, and loss-of-life and damage are expected to be high.

Moderate Impact: A maximum of 2,400,025 people live in areas where the shaking was moderate and damage estimated to be less prevalent.

⁵ ShakeMap sites provide near-real-time maps of ground motion and shaking intensity following significant earth-quakes. ShakeMap is a product of the U.S. Geological Survey Earthquake Hazards Program in conjunction with regional seismic network operators. See <http://earthquake.usgs.gov/eqcenter/shakemap/>

Figure 3: Impact areas of Haiti earthquake, 2010



Figure 4: Screenshot of Population Explorer with more functions

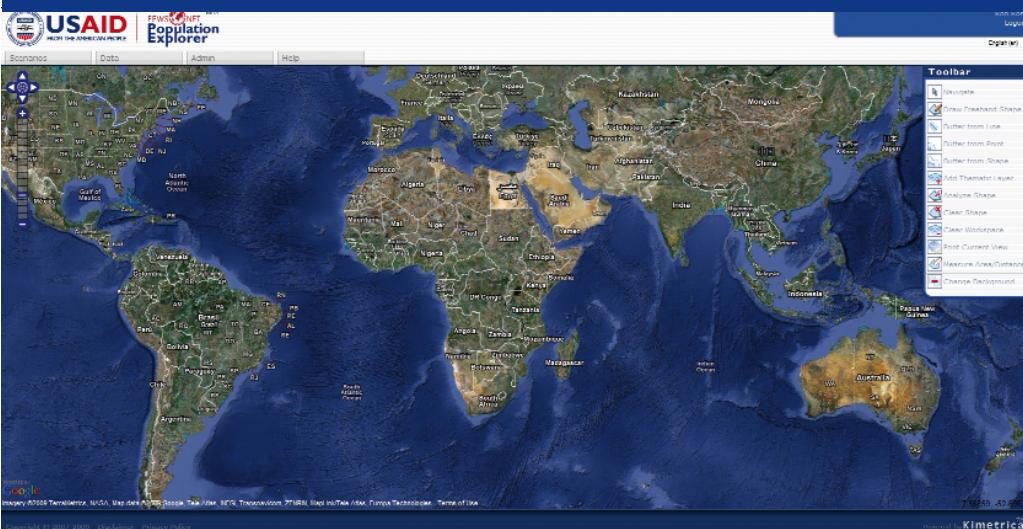


Table 1: Demographics for moderately impacted population

Age Range	Female	Male	Total
0-4	245,761	249,748	495,509
5-9	229,217	233,383	462,600
10-14	227,789	232,638	460,427
15-19	212,295	216,404	428,699
20-24	184,894	187,637	372,531
25-29	151,778	152,643	304,421
30-34	123,002	123,615	246,617
35-39	104,249	107,127	211,376
40-44	92,292	95,414	187,706
45-49	80,604	80,168	160,772
50-54	64,335	57,783	122,118
55-59	48,505	36,400	84,905
60-64	37,088	23,548	60,636
65-69	30,769	18,372	49,141
70-74	23,349	14,146	37,495
75-79	14,311	9,858	24,169
80-84	6,871	5,302	12,173
85-89	2,086	1,542	3,628
90-94	365	247	612
95-99	47	26	73
100+	3	2	5
Totals	1,879,611	1,846,004	3,725,615

Box 2: Haiti – a working example

Access Population Explorer (www.populationexplorer.com) via Mozilla Firefox as first choice, but Internet Explorer works too.

Registration is not required to use most of the functions

From the toolbar click 'Add thematic Layer' Select:
Country: Haiti
Theme: Hazards
Map: Earthquake Strong
Once the map displays, go back to the toolbar and select 'analyze shape'.
Click on the map that is now displayed. A 'pop-up' will appear with data.
To view the demographic breakdown, click on 'view age and sex breakdown'.

Population Explorer also provides the age and sex breakdown for the moderately affected population total. Table 1 was derived only a few hours after the earthquake struck. The total number of children between 0 and 5 years was estimated to be 495,509. See Box 2 on how to generate this data using the web programme.

Additional functions for registered users

All of the features described above are available to the general public, and without cost. For registered users⁶, Population Explorer offers even more free tools. For people working in decentralised offices, the tool has a networking function that enables collaboration in task-oriented workgroups to jointly and privately add to, edit and save affected-population scenarios. They can return as often as they wish, to refine and adjust their affected population scenario and assumptions. Population Explorer includes a food-aid calculation wizard, allowing users to calculate food quantities required for different scenarios of population estimation. Registered users may also add and edit their own geographic data in the form of shapefiles (ESRI map files⁷) and upload a range of other data to their map.

If the user wishes to use other gridded population datasets, they can be added to Population Explorer, adjusted and even compared using different maps. For example, the Gridded World Population dataset, or GRUMP (the Gridded Rural-Urban Mapping Project), which are maintained at Columbia University, may be uploaded and compared to LandScan data.

Figure 4 shows a screenshot of Population Explorer, as a registered user sees the interface. Note that additional tabs appear at the top of the screen, giving users the ability to control their data, share information and publish results.

The power of data overlays

The ability to add several map layers (as one can using more complex geographic information system (GIS) software) exponentially increases the power and usefulness of a tool like Population Explorer. Spatial data and patterns (such as development or emergency programme locations and coverage, facilities like hospitals and clinics, and transportation infrastructure), are combined with demographic information describing populations resident in those same areas. This allows costs, benefits, and comparable outcomes to be judged in terms of the human value they may provide. Facilitating a group effort to do this may be even more useful. Such

a spatially-aware and real-time information exchange among widely dispersed colleagues and partners provides a unique opportunity for group consensus building to emerge from this shared geographic information platform.

As such, Population Explorer becomes more than a tool to ask questions about population characteristics. It may serve as a forum to engage in planning humanitarian activities and responding to crises. The spatial decision support provided through the web enables different actors - from the local government to USAID and other donors to non-governmental organisations and their partners - to present different viewpoints by uploading and communicating with different scenarios and different data. Rather than an allocation of resources on a 'first come, first served' basis, intelligent estimation of specific impacts and compromises can be reached.

Shared access to relatively rare data is vital

Population Explorer helps provide access to data that are often relatively rare in the developing world. And rather than being locked up in datasets used by expert users in first world agencies, Population Explorer can deliver it to some of the most interested, motivated, and yet resource-poor users. It literally delivers this information to the people. It serves as a starting place for connecting people to objective information in an increasingly intuitive analytic framework.

The future of Population Explorer

Population Explorer is one of many Web 2.0⁸ applications that allow non-traditional users to share information, create scenarios, and work collaboratively on a range of self-selected issues. As the internet becomes more accessible in Africa and other developing areas, the use of web services, like Population Explorer, will undoubtedly increase.

As we look to the immediate future of Population Explorer, we see it evolving in several ways. The next version of Population Explorer will have an even easier to use interface. It will allow anyone to create their own data sources and population distribution patterns with their own official or unofficial population data for any area. The scenario development component will, in the future, allow for building time-series scenarios, and will allow users to access demographic data from different time periods. Finally, Population Explorer will be made simpler to integrate with other datasets (food market prices, agricultural production estimates, nutritional and health statistics). Here the human 'denominator' data, which Population Explorer provides, can be used to its greatest advantage in local-areas, maybe even in real-time, providing per capita analyses that are currently unavailable at the sub-national scale.

For further information, contact: Lisa Jordan, email: ljordan@fsu.edu and Rob Rose, email: Rob.Rose@kimetrica.org

⁶ Registration for the current version is controlled by FEWS Net managers; however, it is not restricted to only FEWS Net staff, as many NGO and UN users are currently registered. The next version of Population Explorer will open most of the functions described here to non-registered users.

⁷ Environmental Systems Research Institute (ESRI) is a company that produces GIS (geographic information systems) spatial modeling and mapping software

⁸ The term 'Web 2.0' is commonly associated with web applications that facilitate interactive information sharing, interoperability, user-centered design, and collaboration on the World Wide Web.

Household food security and child malaria in Haiti Summary of published research¹

Malaria is endemic in Haiti. The 2006 Demographic and Health Survey (DHS) found that 28% of children under 5 years had malaria within 2 weeks preceding the survey. The population of Haiti as a whole has little, if any, access to malaria prevention (insecticide-treated nets, intermittent preventive treatment among pregnant women), proactive screening, and treatment options (anti-malarial combined therapy). Malaria in Haiti occurs within the context of widespread poverty, poor health and food insecurity. To find out if food security and malaria are associated with each other, a study was conducted involving a convenience sample of 153 women with children between 1 to 5 years in Camp Perrin, South Haiti.

The plausibility for a relationship between household food insecurity and malaria is high. Previous studies have documented an increased risk of malaria associated with micronutrient deficiencies, including zinc and vitamin A deficiencies. This may reflect compromised cell-mediated and humoral immune systems. Also, food insecurity may impact on maternal stress and suboptimal psycho-emotional human development. It is plausible that endocrinological changes in the developing child, resulting from household mental stress induced by food insecurity, may also compromise the child's immunological system and ability to prevent malaria. There is a scarcity of studies examining the relationship between household food insecurity and malaria.

Household food insecurity was assessed with the 16-item 'Escala Latinoamericana y Caribena de Seguridad Alimentaria (ELCSA) scale' previously validated in the target communities. The scale was translated from Spanish to English and French and then to local Creole prior to application. ELCSA's reference time period was the three months preceding the survey and it was answered by the mother. Households were categorised as either food secure (2%; ELCSA score range: = 0), food insecure/very food insecure (42.7%; ELCSA score range: 1-10), or severely food insecure (57.3%; ELCSA score range: 11-16). A total of 34% of women reported that their children had malaria during the two months preceding the survey.

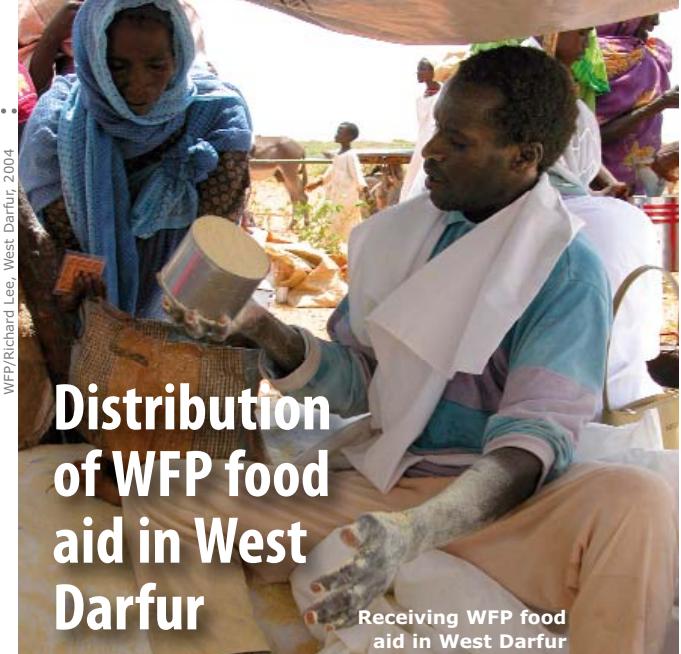
A mother and child is assessed at their home

Multivariate analyses showed that severe food insecurity was a risk factor for perceived clinical malaria (odds ratio: 5.97; 95% CI: 2.06-17.28). Additional risk factors for perceived clinical malaria were as follows: not receiving colostrum², poor child health (via maternal self-report), a child Body Mass Index (BMI) < 17 kg/m², and child vitamin A supplementation more than once since birth. The finding that severe household food insecurity was associated with malaria risk even after controlling for child BMI suggests that dietary quality may be playing a role and that micronutrient deficiencies may be leading to compromised immune function. The cut-off point for risk identified in the study was a BMI of 17 kg/m² and corresponded to the 65th BMI percentile of the study sample. If this finding is confirmed in future studies, it would suggest that the cut-off points usually recommended for identifying children at risk of under-nutrition may miss a large proportion of children at risk of malaria. The findings also suggest that food insecurity may increase the risk of malaria through several stress-related pathways. These include adversely affecting immunity and maternal mental health thereby impairing mothers' ability to successfully employ measures to prevent malaria in their children.

The findings with respect to colostrum are the first time that this has been documented. Given the proven health benefits of colostrum feeding and the potential for the prevention of malaria later on in life, it is important to conduct further research in Haiti to better understand the barriers against colostrum feeding and how to overcome them. The relationship between more frequent vitamin A supplementation and malaria was unexpected. The authors hypothesise that children with more access to these campaigns are also more likely to be diagnosed with this condition.

The authors acknowledge several study limitations. With the exception of anthropometry, all data were self-reported by the children's mother. Furthermore, the study was cross-sectional so it is not possible to determine whether severe food insecurity led to malaria, or if malaria in children prevented other household members working and generating income needed to ameliorate food insecurity. Future longitudinal cohort studies are needed to understand the temporal sequence of events.

The authors conclude that policies and programmes that address food insecurity are also likely to reduce the risk of malaria in Haiti.



Distribution of WFP food aid in West Darfur

Receiving WFP food aid in West Darfur

Summary of research¹

In order to investigate the evolution of the humanitarian situation in Darfur, trends in nutritional status and mortality from 2004 to 2008 were analysed based on 164 publicly available surveys. Malnutrition prevalence and death rates were modelled taking into account changes in the contextual situation and humanitarian aid status of the population (resident and internally displaced persons (IDPs) and seasonal variations).

The results of the analysis showed that by the end of 2005, the humanitarian crisis had generally been contained. There was an overall yearly decrease of 16% in prevalence of global acute malnutrition (GAM) and a 28% decrease in prevalence of severe acute malnutrition (SAM) in 2004 and 2005. The decreases were homogeneous across all three states and populations. The decrease in the risk of dying was even more marked; the crude death rate dropped by between 44% and 75% per year, depending on the state and type of population, whilst the under-five death rate decreased by 50% each year. At the end of 2005, the risk of dying was below emergency thresholds for both the general population and for children under five years of age. However, the affected population continued to suffer under the combined effects of high levels of violence, deteriorating livelihood conditions and food shortages.

Both the security environment and the overall humanitarian context became increasingly complex after 2005. In addition to the main parties² to the conflict, new rival factions with different motives emerged and incidents of banditry increased. Livelihood conditions had changed. Humanitarian aid workers and convoys were increasingly attacked and harassed. Despite this, levels of malnutrition remained stable but SAM tended to increase for IDPs. This might be interpreted as an indication of the population's reduced ability to cope, although mortality rates remained stable. Mortality rates seemed to increase slightly for residents in South Darfur after 2005, even though the nutritional status was stable. This rise may be due to the increased levels of violence in South Darfur from the end of 2007 and throughout 2008.

At the end of the 2008 violence, armed assaults and banditry were still widespread. The security situation was becoming increasingly complex with the emergence of splinter rebel groups and other armed factions. The humanitarian situation remained fragile and signs of a forthcoming breakdown emerged. In view of this, the authors of the study concluded that it is important that the humanitarian situations continue to be closely monitored.

¹ Perez-Escamilla, R et al (2009). Household food insecurity is associated with childhood malaria in rural Haiti. *The Journal of Nutrition*, pp 2132-2138, 2009

² The two rebel groups (the Sudan Liberation Army and the Justice and Equality Movement) on the one hand and the Government of Sudan on the other.



Rafael Perez-Escamilla, Haiti, 2007

Review of NGO engagement with the humanitarian reform process

Summary of report¹



WFP/Susannah Nicol, Afghanistan, 2009

Women wait for a WFP general food distribution in Kabul

A recent report analyses the current state of global humanitarian reform efforts from a non-governmental organisation (NGO) perspective. This involved synthesis of a series of mapping studies carried out between November 2008 and February 2009 that looked at humanitarian reform in five countries: Afghanistan, Democratic Republic of the Congo (DRC), Ethiopia, Sudan and Zimbabwe. The research was commissioned by a consortium formed by six NGOs – Action Aid, CAFOD, CARE, International Rescue Committee (IRC), Oxfam and Save the Children UK – together with the International Council of Voluntary Agencies (ICVA).

The United Nations (UN) humanitarian reform initiative was rolled out in 2005 following poor performance of the international community to the crisis in Darfur in 2004. It had four pillars:

- Improved humanitarian leadership (through humanitarian coordinators (HCs))
- Better coordination of humanitarian action (through the cluster approach)
- Faster, more predictable and equitable humanitarian funding
- More effective partnerships among humanitarian actors

Limitations of the reform process included the limited focus on accountability to affected populations and involvement of national and local actors.

The mapping studies emphasised the inter-linked nature of the different elements of humanitarian reform, and found that the individual elements work best when all elements are working in concert.

Key findings

The study found that progress has been patchy. Financing has seen the greatest progress with the creation of the Central Emergency Response Fund (CERF), although there remain challenges to get CERF funding to NGOs in a timely manner. There are also challenges with transparency concerning destination of Common Humanitarian Funds and Humanitarian Response Funds.

Gaps were found in humanitarian leadership with four out of five study countries lacking strong and experienced humanitarian leadership. The UN has continued to appoint unqualified HCs who do not adequately understand humanitarian action, who underestimate the importance of NGOs, who do not understand the critical importance of partnership, and who do not understand how even small amounts of funding can have a strategic impact in humanitarian response.

The study also found that involvement of NGOs in the reform process has been inconsistent. Where NGOs engage with the clusters, they often feel overwhelmed by meetings, and not respected as equal partners. Furthermore, they do not see reform grounded in accountability to the crisis-affected communities. While many NGOs will engage with clusters at the global level, they are finding that in several country situations, their staff continue to be frustrated by the inefficiency and inequality demonstrated in many clusters.

There has also been a failure to involve local and national NGOs in the process, especially with respect to accessing funds or meaningfully participating in coordination mechanisms. There are also questions about what role (if any) clusters should play in allocating funding. There is a perception that in some circumstances, priority is given to the cluster lead agency's projects. There is also concern that cluster lead agencies source funds with the aim of sub-contracting to NGOs who have already put forward projects for funding.

A striking feature of the mapping studies is that they found no hard evidence that UN-centred humanitarian reforms have improved the provision of humanitarian response thus far. The failure to establish benchmarks for overall system performance, as well as the failure to integrate accountability into the reform process, makes it hard to gauge the true impact of the reforms on affected populations.

Key recommendations

Leadership

The Emergency Relief Coordinator (ERC) should apply Inter-Agency Standing Committee (IASC)

standards for the appointment of HCs and only appoint people with substantial humanitarian experience.

UN agencies in the IASC should abandon the dual RC/HC model as the norm and separate the roles to allow for strong humanitarian leadership.

The ERC, UN agencies, global cluster leads and donors should ensure clusters have dedicated cluster leadership, accountability of the cluster lead to the HC and a collaborative approach following the Principles of Partnership.

Coordination

The role of co-leads or co-chairs of clusters at field level needs to be clarified and donors should ensure financial support for NGO cluster co-leads or co-chairs.

By the end of 2010, the ERC, together with HCs and the IASC, must ensure that Humanitarian Country Teams are formed and involve NGOs in a meaningful way, in line with the Principles of Partnership.

International NGOs and UN agencies should identify ways to better involve their national partners in humanitarian coordination and reform mechanisms to promote more effective humanitarian responses.

Through their position on UN agencies executive boards, donors should hold UN agencies to account for applying the Principles of Partnership as endorsed by the Global Humanitarian Platform in 2007.

Accountability

HCs, Humanitarian Country Teams, clusters and donors should ensure that funding procedures enable aid agencies to consult with, and respond to, feedback from crisis-affected communities, as well as ensuring projects reflect their priorities.

Funding

Donors should ensure flexibility and diversity in funding mechanisms, especially pooled funds, so as to facilitate access by NGOs – particularly local and national NGOs.

International NGOs should be transparent about documenting onward funding to national or local NGOs and should provide adequate overhead costs.

By the end of 2010, UN agencies receiving bilateral funds or donor funding via the CERF and pooled funds should be required by donors to provide evidence of the speed and transparency with which funding is passed through to NGOs.

UN agencies should standardise their procedures for funding NGOs to reduce transaction costs. This is to increase the access of national NGOs to these funds and to avoid the negotiation of overhead costs on a case-by-case basis.

Direct bilateral donor funding to NGOs should also be reformed to promote adequacy, responsiveness and timeliness. In particular, flexible and predictable funding should be provided to build NGO humanitarian capacity over the longer-term and enable speedy response in fast-breaking emergencies – neither of which are comparative advantages of the UN pooled funds.

¹ Humanitarian Reform Project (2009). Synthesis report. Review of the engagement of NGOs with the humanitarian reform process. Based on five country studies and commissioned by the NGO and Humanitarian Reform Project

Review of tools developed by the Global Nutrition Cluster

Summary of review¹

In 2005, following a review of humanitarian response capacity, the Cluster Approach² was established by the Emergency Relief Coordinator and endorsed by the Inter-Agency Standing Committee (IASC). The Nutrition Cluster (NC) is one of 11 global clusters (a designated area of humanitarian activity) established and UNICEF has the lead. In 2007, two Working Groups (WGs) were established within the Global Nutrition Cluster (GNC):

- *The Capacity Development WG* that produced a Nutrition in Emergencies Toolkit (NiETK) and a Harmonised Training Package (HTP)³.
- *The Assessment WG*, in collaboration with the Health and Wash Clusters, developed an Initial Rapid Assessment (IRA) Tool.

The United Nations Standing Committee on Nutrition (SCN) was commissioned in early 2009 to look at these three tools to identify lessons learnt, gaps and impact of their use in areas of strategic importance to emergency nutrition response and preparedness.

In total, 83 people were interviewed. They were selected through their engagement in cluster work at country level, at regional level with a link to cluster work in countries, in GNC work and in emergency nutrition. Individuals with specific experience and perspectives relevant to this review were also interviewed, e.g. those involved in the Sphere process, HTP trainers, consultants working on the HTP, etc. Twelve out of the 14 countries where the Nutrition Cluster had been formally activated at country level were represented in the review.

Main findings

The review found that approximately 20% of the participants had never heard of the tools or had heard but not seen any of the tools. This was similar for each of the tools. Most worrying was that there was limited awareness about the tools amongst some key actors working in, or with, countries with an active NC. This indicated a lack of a good dissemination strategy rather than a reflection of the usefulness of the tools; those that knew of the tools and used them appreciated their quality and potential.

The IRA tool was valued for having brought sectors and different types of information together in one document. In particular, it served as a reference point for existing tools or for the compilation of new assessment tools. Further development of the IRA tool adapted to specific country/emergency contexts is needed.

The NiETK was used particularly at the country level by Nutrition Cluster members, including Governments. It was highly valued as an advocacy tool for nutrition-related interventions with (non-technical) managers and has great potential to guide health professionals in emergencies.

The intended purpose of the HTP was as a source of harmonised content on nutrition in emergencies (NiE) as a training support tool. Many respondents used the HTP in this way and as a handbook/reference guide. The tool was considered to be of good quality and comprehensive. However, the HTP was also considered by some to be a comprehensive training package, which it is not. The tool has large potential when used as a support in larger capacity building strategies on NiE. The value of both NiETK and the HTP depend partially on how congruent they are with the most recent guidelines/protocols and state-of-the-art practice and views.

Overall review participants appreciated the concerted action of drafting tools together (intra- and inter-cluster) and it was seen as a good learning experience within the GNC.

Though the tools served their own purpose in different contexts and at different levels (global, regional, in-country), their use at regional level was considered to be marginal.

The review found that it was slightly too early to demonstrate how people used the tools and their impact. However, the review was timely with regard to evaluating the process/progress to date and guiding the roll out and further WG plans and activities. The review concluded with recommendations for the use and roll out of each tool, as well as for stakeholders working in nutrition at global, regional and national level.

Recommendations

To date, all tools deserve the 'test of time' and are of sufficient quality to justify their use in NiE work, within or beyond the Nutrition Cluster context. Amongst the key recommendations in the review were the following:

IRA tool

The large majority regard the IRA tool as a generic tool that should be adapted in-country for assessment purposes. The adaptation should be made according to the emergency context and country specificity. It should be adapted as part of a country's contingency planning. If a sudden onset emergency occurs and the country has no such rapid assessment tool, it can be used as an 'off-the-shelf' tool. It is strongly recommended to use this tool and then evaluate it in two years to assess its usefulness and its evolution in various countries.

Suggestions for future use include:

- Previous IRA tool versions should be used when compiling any comprehensive assessment tool for the GNC (a development on the agenda of the Assessment WG, and if still deemed necessary).
- A future revision of the IRA tool should distinguish between life-saving and life-sustaining indicators.
- The development of other rapid assessment tools, such as McRam in Pakistan, and ECHO's rapid assessment checklist (to be finalised in 2009) should be followed and serve as potential instruments for strengthening the IRA tool.

NiETK

The tool has potential to be used widely outside the Nutrition Cluster where there is currently limited awareness of its existence. It should be 'marketed' in the Health Cluster at all levels by the NC, UNICEF and WHO. The NiETK should be updated at the end of 2009. Its use could be increased if some related IEC materials were incorporated based on NiETK messages.

HTP

Apart from being directly used as a training support within the Nutrition Cluster system (e.g. members, partners, cluster coordinators) the HTP should be used as a basis for academic training in Africa, Asia, Middle East (and possibly Southern America) to strengthen national capacity in NiE. It should be updated at the end of 2009. (*A 2 year update process of the HTP was initiated at the end of 2009, see news piece in this issue of Field Exchange.*)

The HTP does not need to be published as hard copy but could be reformatted into a simple press-ready document. (*This development is now well underway.*)

It is recommended that those countries or organisations that use HTP in training incorporate the HTP into a larger capacity building strategy. Ensuring facilitation and support by supervisors/decision makers (i.e. the 'full chain of command') and provision of more practical learning opportunities will enable trainees to apply their knowledge. There should be a high priority to create internships. The impact of training with the HTP should be evaluated in 2-3 years.

Country

Where countries are interested in using the tools, these should be introduced as part of emergency preparedness rather than wait until an emergency happens. If deemed relevant, countries should use the generic version of a tool and adapt it to country context (to improve ownership, appropriateness of tool, speed of uptake and increased use, etc).

Where appropriate, countries should include tools (such as NiETK) in national guidelines. Country Nutrition Clusters should have clear strategies on how to disseminate relevant tools to all stakeholders, including how to 'explain' and demonstrate the tools. The Nutrition Cluster should encourage Governments/agencies/organisations to endorse the (country adapted) tools, if appropriate.

Regional

UNICEF should take a greater role in rolling out GNC tools/services, especially at the regional level. Regional offices of UN agencies and NGOs should have Nutrition Cluster related issues in their work plan (for example, Nutrition Cluster preparedness plans).

Global Management

The GNC should encourage agencies/organizations/ Governments to endorse the GNC tools and encourage the use/adoption of the tools within the individual agencies. The GNC should develop support systems (e.g. services, tools) for 'good nutrition cluster coordination'. The GNC should re-examine its work plan and decide on the balance between technical support and support for coordination/management of cluster in the development of tools.

The GNC should look for means to better inform stakeholders on GNC issues, especially at the regional and country levels – through email alerts, Field Exchange, installing links to the GNC websites at websites better known by the NiE network, etc.

The GNC should engage regional offices (e.g. UN, NGOs) more in its work and vice versa.

The GNC WGs should re-examine their work plan priorities taking into account the findings of this review.

Global Tools

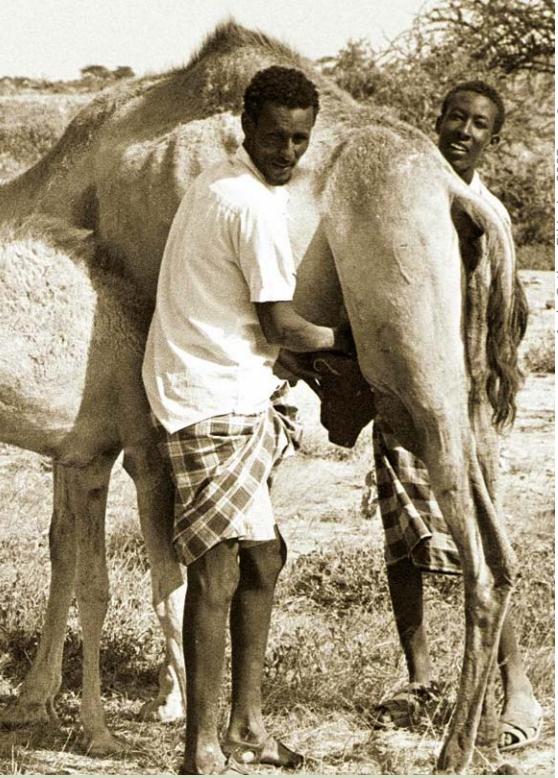
The GNC should draft a clear dissemination strategy for the tools and fundraise for its implementation. The tools should be translated as a priority into French. The GNC (Assessment WG) should engage in the Office for Coordination of Humanitarian Affairs' (OCHA) process of creating a common needs assessment methodology and be part of the inter-agency Needs Assessment Group established by the IASC in March 2009. A process of maintenance and updating of the tools should be mapped out for the NiETK and HTP as they are 'living documents'. The GNC should, in collaboration with the regions, task an organization with making powerpoint slides and more didactic material to optimize the use of HTP. The GNC should advocate for inter-cluster exchange on tools.

To learn more on the Cluster Approach, access all tools developed and to keep up to date on developments, visit: <http://oneresponse.info>

¹ Vevers, M (2009). Review, lessons learnt of, and recommendations on, the use of products developed by the Global Nutrition Cluster; the Nutrition Cluster Toolkit, the Harmonised Training Package and the Initial Rapid Assessment Tool. July 2009

² <http://oneresponse.info>

³ Based on priority capacity gaps in nutrition in emergencies, this package comprises 21 modules to use in training on key topics. Each module comprises four sections: i) briefing paper for senior decision makers; ii) technical notes for practitioners; iii) trainers' guide; and iv) reference material/sources. Available at <http://oneresponse.info/GlobalClusters/Nutrition/Pages/CapacityDevelopmentWorkingGroup.aspx>



Andy Catley, Ethiopia, 2005

Research

The authors examine the role of milk in the diets of children in pastoralist communities in Ethiopia, including the links between seasonal availability of milk with child nutritional status and priority interventions to address this.

Milk Matters: Improving Health and Nutritional Status of Children in Pastoralist Communities

By Dr Kate Sadler and
Dr Andy Catley



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This work was made possible with funding from the Office of Foreign Disaster Assistance (OFDA) United States Agency for International Development (USAID). Many thanks go to the dedicated research team of data collectors who include Rashid Ibrahim Osman of Save the Children USA, Almaz Mulugeta and Yusuf Ali of Save the Children UK, Habon Osman Aden, Abdiyo Bilow, Habiba Ismaiel, Ambiyo Dahiye and Sugay Osman. The author would also like to thank Michael Manske, Tina Lloren, Alemtsehay Greiling and Adrian Cullis of Save the Children USA and Matthew Hobson, Themba Nduna and Abdirahman Ali of Save the Children UK for providing considerable support for this study.

Animal milk has long been recognised as an important component of pastoralist diets across the world¹. In addition, milk is a nutrient dense food and is thought to contribute a high proportion of the nutrients required by the many pastoralist groups that rely on it.^{2,3} However, children that live in pastoralist areas of Africa are increasingly referred to as some of the most nutritionally vulnerable in the world. Nutrition surveys in Eastern Ethiopia⁴ and other pastoralist areas of Africa⁵ have long identified seasonally high rates of acute malnutrition. Discussion of the reasons behind this malnutrition often refer to a broad spectrum of direct causes that include the health environment and infection, infant feeding and maternal caring practices, and reduced availability of milk and cereals, but have rarely examined the relative importance of any one of these causes. Whatever the causes, the dominant nutrition programming response from the international community to malnutrition in these areas continues to be the delivery of an often limited commodity food basket that rarely includes a protein source suitable for older infants and young children.

Part of Save the Children's African Region Pastoral Initiative⁶, 'Milk Matters' is a joint venture between the Feinstein International Centre at Tufts University, Save the Children USA and Save the Children UK in Ethiopia. It aims to improve the nutritional status of children in pastoralist/semi pastoralist areas in the Horn of Africa through improved livelihood programming. The first phase of 'Milk Matters' examined the role of milk in the diets of children in pastoralist communities, how seasonal availability of milk in these communities might be associated with the nutritional status of children, and priority interventions that could reduce vulnerability to malnutrition in this group. The work has involved a literature review, which aimed to ascertain those aspects of pastoral child nutrition and nutrition programming that are well established and those issues that remain debated or poorly covered by the literature⁷. A subsequent qualitative study focused on Save the Children's programme areas in the Somali Region of Ethiopia. This aimed to examine what pastoralist women and men themselves think about the important causes of child malnutrition, links between child nutritional status and milk supply, and 'best bet' interventions for addressing malnutrition in their communities. The methods and the main findings of this study are summarised below.

Methods

Study location

The study was conducted in two areas of Somali Region, Ethiopia: Liben Zone in the south of the region where Save the Children USA was implementing programmes, and Shinile Zone in the north of the region where Save the Children UK was implementing programmes. The Zone Administrator and the Save the Children team in each area supported the identification of two study areas (or kebeles) that were considered to be of a purely pastoralist livelihood type: Boqolmayo and Bioley in Liben, and Gad and Lasdhere in Shinile.

Study Participants

Participants at each of the 4 locations included:

- Eight to 12 pastoralist women of mixed wealth group. These women were the focus of most of the data collection activities, including structured exercises. For most exercises, the group was split into two smaller groups, and findings were then compared when the entire group came back together again to discuss results and key issues.
- Four to 10 male participants, including community leaders and family members of the female participants, were involved in some exercises that required a specific knowledge of livestock movement, health and nutrition.

¹ Sadler, K., C. Kerven, et al. (2009). Milk Matters. A literature review of pastoralist nutrition and programming responses. Addis Ababa, Feinstein International Center, Tufts University and Save the Children. This review can be downloaded at: <http://fic.tufts.edu> and search for the report.

² 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): 531-59.

³ 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

⁴ 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

⁵ Mason, J. B., S. Chotard, et al. (2008). Fluctuations in wasting in vulnerable child populations in the Greater Horn of Africa. Working Papers in International Health and Development, No. 08-02 New Orleans, Department of International Health and Development, Tulane University.

⁶ 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."

⁷ Sadler, K., C. Kerven, et al. (2009). Milk Matters. A literature review of pastoralist nutrition and programming responses. Addis Ababa, Feinstein International Center, Tufts University and Save the Children

Table 1: Summary of participatory methods used to assess the role and value of animal milk in the diets of pastoralist children

Method	Use	Sample size
Matrix scoring	To compare different foods fed to young children using community defined value indicators	2 groups of informants in Liben zone and 3 groups in Shinile (4-12 people per group)
Seasonal calendars	To determine variation, by season and by 'normal' versus 'drought' year, in rainfall and in dietary intake of milk by species and other foods given to young children.	3 groups of informants in Liben zone and 4 groups in Shinile (4-12 people per group)
Consumption calendar	Linking relative changes in intake of animal milk by young children with absolute measures.	2 groups of informants in Liben zone and 4 groups in Shinile (4-12 people per group)
Simple ranking	To determine how communities perceived the importance of different factors such as the causes of malnutrition.	3 groups of informants in Liben zone and 4 groups in Shinile (4-12 people per group)
Focus group discussion, probing key issues	Used with all other methods to cross check information and clarify responses.	4 groups of informants in each area (4-6 people per group)

Number of informant groups = 6

Table 2: Seasonal calendar of average daily milk intake of a 1 year old child, Liben and Shinile combined				
	Gu	Hagaa	Deyr	Jilaal
Normal year	850 (600-900)	450 (250-800)	900 (450-900)	220 (100-600)
Drought year	200 (120-600)	200 (80-400)	200 (80-450)	100 (80-160)

Participatory methods

Participatory methods were used with each group of participants over a two day period.

Main Findings

The demand and perceived benefit of animal milk for young children is high and generally much higher than that for cereals. In Liben and Shinile, the milk of camels and goats is held in particularly high regard. This is linked to these animals' ability to produce milk through the dry season, for the perceived health benefits of the milk and for the taste.

In both areas, the large contribution that animal milk makes to the dietary intake of young children in the study communities was startling. When milk is available, it is frequently given fresh to children to drink and is added to most complementary foods in both Liben and Shinile. On average, the quantity of animal milk fed to a young child of 1-2 years was 0.85 litres per day in the wet season⁸. This provided 560 kcals which is approximately 100% of the energy required and 27g of protein which is more than 100% of the protein required by a breastfed child of this age⁹.

However, season plays a crucial role in milk supply and by the end of a 'normal' year milk intake of young children has reduced by more than 70%. In a drought year this reduction in milk intake was far more pronounced and by the end of a drought year it had fallen to negligible amounts in both areas. This was shown in both the consumption calendars (Table 2) and the seasonal calendars of dietary intake, one of which is shown in Figure 1.

"We like all milk. It satisfies hunger, we become strong and healthy and playful and happy. It is given to us during Gu and Deyr [the rainy seasons]. During Hagaa and Jilaal [the dry seasons] we get soor, tea with milk and ambula. When milk becomes less we get less playful and weak."

(a group of young boys in Liben Zone)

Although the seasonal calendars clearly demonstrate a change in the dietary intake of young children across seasons, they do not adequately reflect the deterioration in the quality of the diet that occurs. When milk is in short supply it is replaced, in the most part, by an increase in grain consumption, and by the end of a long dry season or drought year the grain is cooked and consumed with little else but water. Such a severe reduction in milk intake is likely to have a serious impact on dietary quality by reducing the amount of high quality protein, fatty acids and micronutrients that young children consume.

"Milk is reduced in everything during drought. We drink black tea and rice as a soup with chili. The name for shuro without milk is yaabis (dry), even though the taste of shuro changes without milk we have to eat it because sorghum is one of the cheapest flours." (women in Shinile Zone).

Study participants perceived a direct and important association between reduced milk intake and weight loss among their young children. They used the phrase Cano la'an to describe 'the suffering due to lack of milk' which is known by local people as the pre-cursor to malnutrition as they define it. In future, it will be important to examine the implications of this seasonal availability of milk for patterns of nutritional status as defined by international indicators and how this overlaps with pastoralists own definitions of malnutrition in this context.

In the opinion of the pastoralists who participated in this study, the most effective way to improve availability and access to milk for young children is clear; through the maintenance of the health and nutritional status of their livestock. They identified broad areas for possible intervention, including animal health, fodder production and water supply that could help to maintain the supply of milk to children during the dry season and drought. The separation of larger stock from young children during seasonal migrations was also highlighted as an important factor that disrupted children's access to animal milk. It is these areas therefore that have potential to form the basis of any intervention that aims to improve children's resilience to drought and malnutrition.

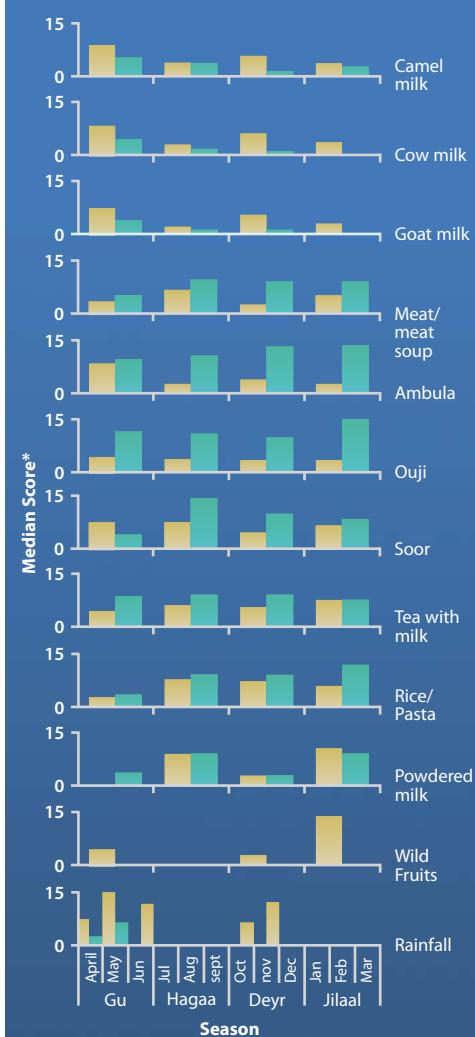
Many of the programmes that might fall into the broad categories discussed are not new, and there is already some evidence that they can lead to real improvement in livestock health and milk production. There is far less evidence, however, of any impact of such interventions on the nutritional status of children, and it is here that more work is needed. Given the issue of milk access for young children during late dry season and drought, especially access to camel milk, it is possible that the benefits of interventions that aim to improve child nutrition, such as veterinary care for camels, would not be fully captured in terms of milk consumption by children at critical times. This suggests there is a need to review these projects and look more carefully at ways to ensure that milk reaches young children when they need it most.

Future work planned

This now paves the way for the second phase of Milk Matters, which aims to deliver a number of small scale community-defined livestock interventions in pastoral areas, with the specific objective of improving access to and consumption of animal milk by young children over the dry season. The work will use a combination of quantitative and systematic participatory approaches and methods to link human nutrition, access to milk, and livestock information. These, for external actors at least, tend to exist as separate bodies of knowledge. The funding for this next phase has just been secured from the US Office for Disasters Assistance (OFDA).

For more information, contact Kate Sadler, email: Kate.Sadler@tufts.edu
The full report 'Milk Matters: the role and value of milk in the diets of Somali pastoralist children in Liben and Shinile, Ethiopia' can be downloaded from the FIC website.
Visit <http://fic.tufts.edu> and search for the report.

Figure 1: Seasonal calendar of foods consumed by young children, Liben Zone



* Represents the relative quantity of the food consumed by young children (greater value = larger quantity consumed).

Guide to Figure 1

The number of informant groups = 3

For each food, the female participants were asked to distribute stones across the seasons according to child intake at different times of the year, with more stones representing higher intake. Women were asked to redistribute stones (add to, or subtract from piles) for a drought year. The number given in Figure 1 is the median number of stones (minimum and maximum value)

For rainfall, the number given is the length of stick (in inches) that participants used to represent rainfall by month.

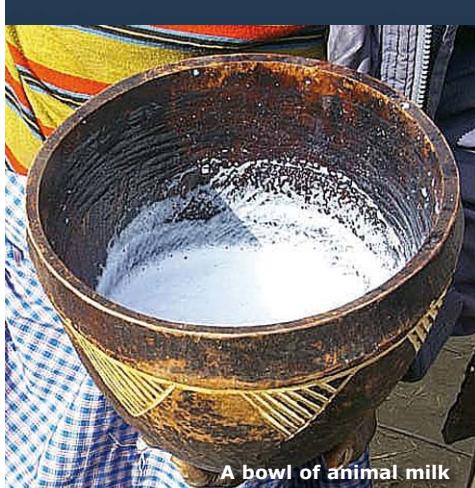
Gu=long rainy season; Hagaa=dry windy season; Deyr=short rainy season; Jilaal=dry hot season

Meat soup: pieces of meat in a watery soup. The watery component is given to young children.

Ambula: whole grain millet, wheat or maize cooked and served with milk (or garoor preferably), sugar or ghee.

Oiji: a soft thin porridge made with flour (usually wheat, maize, millet, rice or a blended flour), cooked with milk or ghee, water and sugar.

Soor: a solid paste made from sorghum, maize, wheat or millet flour cooked with water and served with milk or ghee and sugar.



A bowl of animal milk

⁸ This amount compares to the required daily fluid intake, recommended by WHO guidelines, of between 600 and 1300ml/day for children of this age (inclusive of breastmilk) and therefore appears to be a plausible intake. Young children in this context are likely to consume fluid intakes at the higher end of this spectrum due to the average temperatures of 30+ degrees celsius.

⁹ Dewey, K. Guiding Principles for Complementary Feeding of the Breastfed Child. 2003. Washington DC, World Health Organization.

Cross-sectional assessment of retrospective mortality in humanitarian emergencies

Summary of published research¹

The rates and causes of mortality are critical indicators of the overall health of a population. Because of the importance of such data, it is essential to assess mortality rates in settings without complete vital statistics reporting or death surveillance. Demographers have done extensive work on methods to estimate mortality rates in such settings. Since humanitarian emergencies may differ so substantially from the relatively stable settings for which many retrospective approaches to assessing mortality were developed, the extent to which these approaches can be applied in humanitarian emergencies may be limited. A recent paper reviews basic methods that may be employed in humanitarian emergencies to determine crude, under-five and maternal mortality rates in cross-sectional surveys and provides references to more detailed descriptions of these methods.

Basic approaches to measure mortality rates

There are four basic types of approach to measuring mortality rates in cross-sectional surveys. The most basic method consists of 'single-round' survey where surviving members of households, interviewed at a single point of time, report the aggregate number of deaths among household members that occurred during some period in the past. However, this method has severe limitations, e.g. underestimation of rates with greater omission of deaths in certain age groups and differential reporting by gender. The cumulative effect of these errors may result in underestimation of rates by as much as 30-40%. These shortcomings led in the 1970s and 1980s to the development of more complex approaches.

The second method, the 'multi-round' approach, uses consecutive interviews of the same individuals or individuals in the same households conducted at regular intervals to detect changes in household composition over time. Because it relies to a greater extent on the enumerator's observations and less on the recall of respondents, this approach is more robust. However, the approaches are logistically complicated and expensive and may be unsuited to humanitarian emergencies because of the mobility of populations, dissolution of households and evolving security concerns. Moreover, survey results are needed urgently to address emergency health conditions and cannot wait for multiple survey rounds.

The third approach involves the use of survivorship methods. Here, simple questions are asked of surviving relatives. For example, the number of childhood deaths may be estimated by asking women for the total number of live-born children they have ever had, and the number of these still alive. Transformation of the proportion of children still alive into

then based on an enumeration of individuals resident in a household, a process frequently referred to as a household census. This has emerged recently as the approach most frequently employed in humanitarian emergencies. The past period of interest is much shorter than with the survivorship method, thus providing an estimate of recent mortality rate.

This approach encompasses several methods.

Retrospective assessment of cause of death is often based on the responses of surviving family members to questions contained in verbal autopsy algorithms.

Data collection methods

Crude mortality rate

The crude mortality rate (CMR) is the rate of death among everyone in a specific population. Regardless of the method of data collection, CMRs are calculated from a numerator (the number of deaths), a denominator (the size of the population within which these deaths occurred), and a time element. Measuring mortality rates retrospectively requires the precise definition of a past time period, called the recall period. When measuring mortality rates in a cross-sectional survey, the number of persons needed in the survey sample to achieve a given level of precision around the point estimate of the mortality rate depends on, among other factors, the length of the recall period. The longer the recall period, the more person-time units are included in the denominator with the same survey sample size. However, in humanitarian emergencies, where mortality rates may be changing rapidly and public health professionals require a relatively recent estimate of mortality rates, a shorter recall

period, and hence a larger sample size of households, may be preferable.

In the absence of an estimate of the baseline CMR, a CMR of 1/10,000/day or above can be used as the definition of the acute phase of an emergency. This threshold reflects experience in high-fertility countries in Sub-Saharan Africa but predates the HIV/AIDS pandemic. It should also be borne in mind that the CMR is influenced by the underlying age structure of the population. This means a younger population may have a lower CMR because, in general, children (especially those older than five years of age) have a lower rate of mortality than that of elderly persons.



survivorship estimates depends on the application of a set of multipliers to the proportion of children surviving for each five year age group of women. One child survivorship method has been adapted for use in humanitarian emergencies. However, many of these methods have limited use in humanitarian emergencies due to population movements and the fact that rates tend to apply to a period preceding the present by many years.

A fourth approach is the adaptation of the basic single-round method where interviewers ask household respondents to list each member of their households. Both the numerator and denominator of the estimated mortality rate are

In emergency settings, several methods have been used to gather necessary data for calculation of CMR.

- Some survey methods have focused on only the total number of people who live in the household and the total number of deaths since the beginning of the recall period. This method requires only a few questions and only a few minutes at each household. However, validation studies in stable settings indicate that surveys generally underestimate mortality rates. Several methods have been employed to address this tendency to underestimate number of deaths. One is the 'past household census method' where respondents list each person who lived in the household at the beginning of the recall period and then discuss their current status. The method has to assume that household departures and entrances were evenly spread throughout the recall period.
- Another method is called the 'current household census method' where respondents are asked to list each current household member, persons who died or left the household during the recall period and to identify those currently members who entered the household during the recall period. The basic population denominator of current household members is then adjusted by subtracting one-half of a recall period for persons who entered the household and adding one-half of a recall period for persons who left the household during the recall period.
- A third method called the mid-interval population involves a complete household census at the time of the survey and at the beginning of the recall period. The population denominator is then the average of the population at the beginning and end of the recall period. Such double enumeration, although taking more time, provides internal validation of the data from each household. However, interviewers must take care not to miss deaths among newborns and infants. None of these methods has been validated against a more accurate process for counting deaths, such as a death registration system with good reporting.

If the age and sex of deceased and surviving household members are determined with reasonable accuracy, age or sex-specific mortality rates can be calculated. If some estimate of the cause of each death is determined, cause-specific mortality rates can also be ascertained. Sample size will, however, determine precision. If the date of each death can be gauged accurately, death rates for sub-intervals of the recall period can be calculated and used to monitor trends over time.

The household census methods suffer from several potential biases, including those associated with sampling which are inherent in all surveys. Biases in emergencies that are particularly relevant are non-representative samples, possibly due to insecurity and survivor bias when all household members are dead or surviving members cannot be interviewed. Non-sampling biases may include intentional distortion by respondents. This can work both ways, e.g. respondents wish to exaggerate their plight or conversely not report deaths to ensure that food aid is not reduced. Recall bias may also occur as traumatised populations may not

remember deaths during the acute emergency or may be confused about timings. To some extent, the potential for these latter biases can be minimised by the employment of a double enumeration, the use of an appropriate household respondent and careful selection, training and supervision of field workers.

Under-five mortality rate

Under-five mortality rates have been of particular interest to public health workers as young children are frequently the target of specific interventions. Furthermore, these rates can be a particularly helpful index of mortality in humanitarian emergencies because young children are more vulnerable to death than older children or adolescents and therefore have higher rates. These rates may also rise before CMR in some emergencies making this an earlier indicator of worsening health.

Under-five mortality rates can be calculated using the household census approach, although sample sizes may frequently be too small to permit precise estimates.

Another family of approaches is based on the 'indirect' method developed in the 1960s in which women in defined age groups respond to pre-set questions on the number of children ever born alive and the number surviving. No information is collected on dates of birth or death. Instead, models of fertility and mortality are used to distribute these events in time and to estimate the probabilities of surviving to certain ages. Such methods are not useful in emergencies because they depend on the simplifying assumptions (unlikely to be true in such contexts) that mortality rates have been stable over time and that survival of children is independent of that of their mothers.

Another approach that has been employed for many years in development contexts is previous birth history (PBH). This method collects the dates of births and deaths of children from a sample of women of reproductive age and uses the data to construct life-tables for the most recent five year period. However, this method still gives estimates of mortality rates centred on a date preceding the survey by approximately two and a half years. PBH has now been amended to give more recent estimates in humanitarian emergencies. The PBH approach minimises underestimate and manipulation by not asking directly about deaths. In addition, respondents have a single relationship to the decedents, unlike other methods in which any available adult household member may report on any household deaths. However, as with household census methods, survivor bias may lead to underestimating the rate. If the mother is missing or dead, no deaths can be reported. This will be particularly important in situations of high maternal and under-five mortality. There have been few attempts to validate the completeness of early childhood deaths collected via the PBH approach. However, this method is the standard one currently used in most large population-based surveys that measure infant and child mortality around the world.

Maternal mortality rate

Measuring maternal mortality is even more challenging than measuring crude and early childhood mortality in humanitarian emergencies and post-conflict settings. Even where measures of maternal mortality are high, maternal deaths remain rare events.

Three basic approaches exist. The first relies on incorporating questions into a comprehensive national population census but this is not realistic in most humanitarian situations. A second approach uses various survivorship methods; by far the best known of these are the direct and indirect sisterhood methods. These methods are also less appropriate for emergencies as they produce an average for many years in the past that may be out of date. They also require sophisticated data analysis techniques with which many personnel in emergencies may not be familiar. The third approach is the reproductive age mortality survey (RAMOS) which gathers data only on women of reproductive age who are included in the survey sample. The RAMOS is conducted in two stages. Identification of all deaths among women of reproductive age through for example, review of burial sites, health records, census data or household surveys, followed by further investigation to determine the cause of each death using, for instance, information from health facilities, death certificates or verbal autopsy interviews with families of deceased women. Because of the relative rarity of maternal deaths, data must be gathered from a very large number of households to obtain a reasonably precise estimate of maternal mortality. This requires many resources and can be logistically difficult, particularly in humanitarian emergencies. Data collected directly in a RAMOS allow direct estimation of proportional mortality among women of reproductive age due to reproductive causes. With information on births and population size, the maternal mortality ratio, maternal mortality rate and lifetime risk of maternal death may also be calculated. Additional methods and tools for maternal mortality have been developed in the past several years, which will merit assessing their feasibility as to usefulness in emergency settings.

Conclusions

In order to produce an accurate point estimate of mortality, prospective death reporting necessitates relatively complete reporting of deaths and a good estimate of the population denominator. These requirements can often not be met in acute humanitarian emergencies. A variety of methods have been developed to measure mortality retrospectively in settings without prospective death surveillance. However, many of the methods require underlying assumptions or produce an estimated mortality rate for time periods in the relatively distant past, making them less suitable for use in humanitarian emergencies. Careful fieldwork, appropriate selection of respondents, and awareness of the limitations and potential sources of bias in those methods best suited for humanitarian emergencies will maximise the accuracy, and hence the usefulness, of the results from such surveys. In addition, it is important to remember that the validity of the results of mortality surveys also depends on all of the factors that must be considered when carrying out any survey, such as the sampling scheme used, careful training and supervision. Finally, studies are needed to validate the methods described against more accurate methods of counting deaths and to compare them to one another.

¹ Cairns, K et al (2009). Cross-sectional survey methods to assess retrospectively mortality in humanitarian emergencies. Disasters, volume 33 (4), pp 503-521



Review of nutrition and mortality indicators for Integrated Phase Classification

Summary of technical review¹



The Integrated Phase Classification (IPC) Technical Working Group and the Standing Committee on Nutrition (SCN) Task Force on Assessment, Monitoring and Evaluation recently commissioned a technical review of mortality and nutrition indicators. The purpose of the review was to ensure that these indicators, in combination with others, help in making a single statement on the food security situation. Malnutrition and mortality indicators have been included in the IPC, along with those of food security, as 'Key Reference Outcome Indicators' since its inception in 2004. Reference levels for each indicator (thresholds) are attributed to each of the five phases of the classification.

Indicators reviewed that are already in the IPC were crude death rate, 0-5 death rate (deaths/10,000/day), low weight-for-height and low height-for-age. Indicators reviewed but not yet included in the IPC were under-five mortality rates (deaths/1000 live births), mid-upper arm circumference (MUAC), underweight and chronic under-nutrition (low body mass index (BMI)). Preliminary findings and recommendations from the review were discussed at a workshop in Rome on 14-15th July 2009.

The main findings and recommendations of the review were as follows:

Acute Malnutrition: Weight-for-height

It is appropriate to continue to use weight-for-height (WH) in all phases of the IPC and to recognise its particular relevance in phases 3-5. Severe acute malnutrition is not recommended as a key reference outcome because of the small numbers and therefore wide confidence intervals (the same argument applies to oedema).

Weight for height reference levels

There is a need for the standardisation of reference levels between different stakeholders and systems based on agreement and consensus beyond the IPC institutions. These reference levels need to reflect more clearly the exponential relationship between malnutrition and mortality, i.e. the increase in prevalence of low WH in each of the IPC phases should reflect the exponential increase in malnutrition that is seen with increases in background mortality and vice versa.

The possibility of using overlapping WH reference levels between phases should also be considered. The actual phase would be decided by considering prevalence of wasting as well as other indicators. Until new reference levels are established, the continued use of the current WH reference levels in combination with an analysis of trends is recommended. The use of relative reference levels or an analysis of trends is recommended for all phases. IPC should include mean WH z score (WHZ) where this information is available and encourage monitoring of means in food security information systems. The IPC should consider using the WHO reference levels for mean WH.

MUAC

The prevalence of low MUAC (<115mm) is appropriate in the emergency phases of the IPC as supporting evidence to indicate mortality risk

in the population and to identify need for feeding programmes. Low MUAC is unlikely to be a good indicator of food security. Prevalence of low MUAC are similar to prevalence of severe acute malnutrition (WHZ<-3) based on the 2006 WHO growth standards. One percent low MUAC is the reference level recommended as supporting evidence to indicate mortality risk in phases 4 and 5.

Guidance for interpretation of acute malnutrition

It is crucial that public health factors, disease incidence and expected seasonal patterns of disease and food insecurity are also taken into account in the interpretation of reference levels (or outcomes). Seasonal calendars describing the usual or expected seasonal changes for different regions within a country should be developed and used to help interpret mortality and malnutrition data.

Monitoring trends in malnutrition by age group is crucially important for an understanding of changes in the food security situations. It is recommended that the IPC encourages the reporting of ratios of older (length 85 cm and above) and younger (length <85cm) children mean and prevalence.

Guidance is needed that explains how as food insecurity evolves and deepens, the underlying causes of malnutrition change and interact with each other. The importance of food insecurity as a cause of malnutrition increases and drives the other two groups of underlying causes.

The IPC should also consider differentiating between different levels of diseases and public health crisis. Population density, crowding and shelter might also be relevant reference outcomes needed to help differentiate public health risks that might exacerbate the contribution of malnutrition to mortality.

Height for age (HA)

The inclusion of HA in the early phases of the IPC is appropriate, particularly in phases 1 and 2, but also phase 3 as recommended by WFP. It is recommended as an indicator of underlying vulnerability, rather than as a key reference outcome since there is no consensus on the latter. Stunting is likely to be of most relevance to the IPC when considered among children between 0 and 24 months.

HA reference levels

Given the recent evidence of its association with food security, there is potential of HA as a reference outcome in phases 1-3. The authors recommend continuing to use the HA reference levels already applied in phases 1 and 2 and introducing the WFP recommended reference level in phase 3. An analysis of the distribution of low HA globally and where available in emergency contexts is urgently needed.

Guidance for interpretation

It is possible that prevalence of low HA may increase while prevalence of low WH remains fairly stable. In this situation, increasing prevalence of HA may be taken as supporting evidence of deteriorating food security.

Weight for age (WA)

There was general consensus at the workshop to use WA in phases 1-3 but not 4 and 5 as an indicator of underlying vulnerability, not a reference outcome. Given recent evidence of its association with different categories of food security among children < 24 months and its availability where there is often a lack of data on wasting, it is worthy of further research.

Reference levels and guidance for interpretation

As with HA, the only available reference levels are those published by WHO (1995) which clearly need reviewing. It is likely to be more helpful to consider deviations from regional, national and local baselines. A deterioration in HA and WA can be used as confirmation of deteriorating food security. This can also be used for monitoring long term trends, measuring impact over time and for advocacy purposes.

Body Mass Index (BMI)

The IPC workshop participants broadly agreed that BMI should be included in all five phases of the IPC with an emphasis on low BMI in the upper phases. For the lower phases, it has the potential to capture the double burden of over- and under nutrition. Therefore it was recommended that low BMI (<18.5 among non pregnant women aged 15-49) are included in all phases using the widely adopted cut-off of <18.5 to estimate prevalence.

Reference levels and guidance for interpretation

The BMI working group at the workshop recommended that the IPC should consider relative reference levels, based on national or more local figures, with a multiplier of 1.5 of baseline a guide to shift to a higher phase. The authors recommend that this should only apply to those baselines that are less than 20%.

Several factors other than nutritional status influence BMI. One of these most important of these is body shape, and these therefore need to be taken into account when interpreting prevalence of low BMI.

Mortality

Crude death rate (CDR) and 0-5 death rates (0-5 DR) should remain indicators within the IPC and are of particular relevance in the emergency phases to detect rapid changes in severity of crisis. Excess mortality, especially if reported by age, should be included if accurate baseline mortality rates are available as they are a good indicator of the impact of an emergency. A threshold is not needed as it involves a direct count. IMR and U5MR are not appropriate for use in the emergency phases as the estimates cover the past 5 years and are centred about 2.5 years in the past. Trends can however be monitored if prospective surveillance systems are present and this should be encouraged by the IPC.

¹ Young, H and Jaspars, S (2009). Review of nutrition and mortality indicators for Integrated Phase Classification. Reference levels and decision-making. Study commissioned by the SCN Task Force on Assessment, Monitoring and Evaluation and the Integrated Phase Classification Global Partners. September 2009.

Reference levels and guidance for interpretation

Reference levels for CDR and 0-5 DR used by the IPC are widely accepted and broadly standardised among the humanitarian community. The authors recommend using >5 per 10,000/day for CDR for phase 5. Alternatively, in situations where baseline mortality is relatively low, using doubling of the baseline CDR to identify an emergency may be applied.

Duration as an indicator

There is an urgent need for the IPC to include duration, or time spent within a particular phase, as part of its analysis.

Further research needs

Reference levels need to be revised based on an analysis of the distribution of estimates globally and more specifically in emergencies for the following indicators:

- Prevalence of global acute malnutrition (GAM), and wasting and mean WH, for children <5 years, and for children above and below 2 years
- Stunting, including disaggregating results for children < 2 years

- Low MUAC (<115 mm)
- BMI of non pregnant women aged 15-49 years (<18.5 BMI)
- Obesity among non pregnant women aged 15-49 years (>30 BMI)

Available databases that could be used for this review include the Nutrition Information in Crisis Situations (NICS) database, the WHO Global Nutrition Database and possibly the Centre for Research on the Epidemiology of Disasters (CRED) database. Previously, there were three approaches for determining reference levels:

- i) arbitrary categories based on existing reference levels adapted to fit the number of scales required
- ii) a grouping of the available prevalence data for stunting and wasting in developing countries pre 1993 from the WHO database
- iii) the NICS categories based on reviews of the malnutrition prevalence data combined with mortality data in humanitarian emergencies, including internally displaced people (IDP) and refugee camps, and acute food insecurity and famine crises between 1992-4

A new review of globally available data in emer-

gencies and more stable contexts is needed. The earlier reviews were undertaken more than 15 years ago, were based on low WH (not GAM) and the data used by the RNIS /NICS covered extreme crises. Since that time, the availability of data has increased, the quality improved, while data are now available for GAM and not only for WHZ < -2.

The application of the new reference levels should be monitored in a number of pilot countries and compared with food security indicators. The proposed changes to the use of stunting and underweight as indirect evidence in the IPC should also be evaluated as part of the above pilots.

Research is needed to establish the association between severity of food insecurity and nutritional indicators, and with mortality. Research is also needed to investigate how these associations differ between older and younger children, seasonally and according to body shape.

All recommendations for changes from the current version of the IPC Reference Table (Technical Manual, IPC Global Partners, 2008) are highlighted in bold in Table 1. Table 2 contains recommendations for supporting or indirect evidence.

Table 1: Recommendations for key reference outcomes

Phase classification	Key reference outcomes	Reference levels
1. Generally food secure	Stunting	<20% (<-2 HAZ)
	Acute malnutrition – low WH and/or oedema	<3% (-2WHZ) Mean WHZ -0.40
	Maternal under-nutrition ³	<10% (<18.5 BMI among non pregnant women aged 15-49y)
2. Moderately/ borderline food secure	Stunting	20-40% (<-2 HAZ), increasing
	Acute malnutrition – low WH and/or oedema	>3% but <10% (<-2WHZ). Mean WHZ -0.40 to 0.69. Usual range, stable
	Maternal under-nutrition	10-19% (<18.5 BMI among non-pregnant women aged 15-49y)
3. Acute food and livelihood crisis	Crude death rate 0.5 death rate	0.5-1/10,000/day 1-2/10,000/day
	Acute malnutrition – low WH and/or oedema	10-15% (<-2 WHZ) Mean WHZ -0.7 - -0.99; > than usual, increasing
	Stunting	> 40% (<-2HAZ)
	Maternal under-nutrition	20-39% (<18.5 BMI among non-pregnant women aged 15-49y)
4. Humanitarian emergency	Crude death rate	>1-5/10,000/day or a doubling of the baseline rate
	0-5 death rate	>2-10/10,000/day
	Acute malnutrition – low WH and/or oedema	>15% (< -2 WHZ) Mean WHZ < 1.00; > than usual, increasing
	Maternal under-nutrition	> 40% (<18.5 BMI among non-pregnant women aged 15-49y)
5. Famine/ humanitarian catastrophe	Crude death rate 0-5 death rate	5/10,000/day 10/10,000/day
	Acute malnutrition-low WH and/or oedema	>30% WHZ <-2

WHZ: weight-for-height z score; HAZ: height-for-age z score; BMI: body mass index

All recommendations for change from the current version of the IPC Reference Table are highlighted in bold.

Table 2: Recommendations for supporting or indirect evidence

Phase classification	Supporting evidence ⁴
1. Generally food secure	Underweight <-2 WAZ Obesity (non-pregnant women aged 15-49y) > 30 BMI
2. Moderately/ borderline food insecure	Underweight <-2 WAZ Obesity (non-pregnant women aged 15-49y) > 30 BMI
3. Acute food and livelihood crisis	Underweight
4. Humanitarian emergency	> 1% MUAC < 11.5cm Excess mortality (i.e. more than baseline)
5. Famine/ humanitarian catastrophe	Excess mortality increasing > 1% MUAC < 11.5cm

WAZ: weight-for-age z score; MUAC: mid upper arm circumference

² Refugee Nutrition Information System, that became NICS in 2004.

³ Maternal under-nutrition reference levels are based on the 1995 WHO Expert Committee, which gives no reference levels for extreme food insecurity, i.e. famine/humanitarian catastrophe phase

⁴ The use of severe acute malnutrition (SAM), if available, could be considered as supporting evidence for phases 3-5

WHO Growth Standards to assess Indonesian children < 2 years

Summary of published research¹

A recent study set out to assess the implications of adopting the WHO Child Growth Standards to classify Indonesian children according to nutrition status. Data were obtained from two cross-sectional surveys in two districts in Indonesia in 1998. Children under two years of age were randomly selected using a two-stage cluster sampling. Z-scores for weight-for-length (WLZ), length-for-age (LAZ) and weight-for-age (WAZ) were calculated based on both the NCHS/WHO references and the WHO Child Growth Standards. Wasting, stunting, and underweight were defined as z-scores less than -2.

Drawing on a sample from a study on complementary feeding in two districts in Indonesia (Belu and

Purworejo), 1,374 children under 2 years (including infants under 6 months of age) were included in the analysis. Of these, 693 (50.4%) were male and 681 (49.6%) were female. Almost all of the children had initiated breastfeeding and were still being breastfed when the data were collected. According to the WHO Child Growth Standards, the prevalence of wasting did not change with age, but the prevalence rates of stunting and underweight rose steadily with age. Although the contribution of wasting to the classification of underweight was relatively constant, the contribution of stunting increased as the children grew. The reason for the decline in LAZ is not easy to explain. Most of the children in the study lived under socioeconomic conditions unfavourable for optimal growth.

The authors concluded that the WHO Child Growth Standards are a better tool for assessing the nutritional status of Indonesian children than the NCHS/WHO references. However, low WAZ is not a suitable indicator for commencing an extra feeding programme, because it reflects stunting instead of wasting. The high prevalence of stunting indicates the need to perform preventive nutritional intervention beginning earlier in life, i.e. in utero.

¹ Julia. M (2009). Adoption of the WHO Child Growth Standards to classify Indonesian children under 2 years of age according to nutrition status: Stronger indication for nutritional intervention. Food and Nutrition Bulletin, vol 30, no 3, pp 254-259

A child being measured during the health survey in Niakhar

Incidence and duration of severe wasting in two African populations

Summary of review¹

A recent literature review did not reveal any publication with proper estimates of incidence and duration of episodes of severe wasting. A recent study has therefore set out to compare two situations of endemic malnutrition among under 5 year old children and to estimate the incidence, duration and case fatality of severe wasting episodes.

The study involved a secondary analysis of longitudinal studies, conducted several years ago, which allowed incidence and duration to be calculated from transition rates. The first site was Niakhar in Senegal, an area under demographic surveillance, where researchers followed a cohort of children in 1983-5. The second site was Bwamanda in the Democratic Republic of Congo (DRC), where a cohort of children was followed from 1989 to 1992. Both studies enrolled about 5000 children, who were followed by routine visits (every 6 months) and systematic anthropometric assessment (every 3 months).

Main findings

Niakhar had less stunting, more wasting and higher death rates than Bwamanda. Differences in cause-specific mortality included more diarrhoeal diseases, more marasmus, but less malaria and severe anaemia in Niakhar. Severe wasting had a higher incidence, a higher prevalence and a more marked age profile in Niakhar. However, despite the differences, the estimated mean durations of episodes of severe wasting, calculated by multi-state life table, were similar in the two studies (7.5 months). Noteworthy were the differences in the prevalence and incidence of severe wasting depending on the anthropometric indicator (weight-for-height Z-score (WHZ) ≤ 3.0 or mid upper-arm circumference (MUAC) $< 110\text{mm}$) and the reference system (National Centre for Health Statistics 1977, Centres for Disease Control and Prevention 2000 or Multicentre Growth Reference Study 2006). Severe wasting in Niakhar and Bwamanda using WHZ was 3.2% and 2.9%, while using MUAC, the prevalence was 1.7% and 4.6% respectively.

The authors suggest that differences between the two sites deserve further investigation and that many factors could be evoked. Diet was different in the two sites, with millet and sorghum being the staple foods in Niakhar and maize and cassava in Bwamanda. The pattern of malaria transmission and access to treatment also varied between the two sites. Another difference was the time period. The Niakhar study conducted before the mass vaccination campaigns of 1986-7. However by 1988, mortality rates from measles, whooping cough and tetanus had been reduced to very low numbers. The study was also conducted before oral rehydration therapy programmes which really took off, which could explain the high mortality from diarrhoea.

Genetic factors seemed also to play a role in the comparison. Sahelians of West Africa are usually taller than Congolese Bantus and in particular tend to have a low sitting-height to standing-height ratio (Cormic index). Their body shape therefore tends to underestimate stunting and overestimate wasting when compared to other indicators of muscular mass.

Finally, the authors consider that since these data were collected, HIV/AIDS has emerged, leading to an increase in the prevalence of severe wasting in many African countries. This relatively new disease is likely to change some of the parameters used in the present study.

The authors overall conclusions was that severe wasting appeared as one of the leading causes of death among under-fives. It had a high incidence (about 2% per child-semester), long duration of episodes and high case fatality rates

¹ Garenne. M et al (2009). Incidence and duration of severe wasting in two African populations. *Public Health Nutrition*, vol 12 (11), pp 1974-1982

Research

Food insecurity amongst AIDS caregivers in Ethiopia

Summary of review¹

A recent study set out to assess the validity and dependability of the Household Food Insecurity Access Scale (HFIAS) among community health volunteers in Addis Ababa, Ethiopia. The HFIAS was deemed by its developers to capture the "universal experience of the access component of household food insecurity across countries and cultures" and to require only minor adaptation to local contexts. For this study, the HFIAS was translated into Amharic and subsequently tested for content and validity. This was followed by a quantitative validation study based on a representative sample ($n=99$) of female community volunteers (HIV/AIDS home-based caregivers). With this group, the HFIAS was administered at three time points over the course of 2008, in the context of the local and global food crisis. The sample was drawn from two local non-governmental organisations. The study site included the neighbourhoods surround the Ministry of Health's ALERT Hospital on the southwest outskirts of Addis Ababa.

By pooling observations across data collection rounds and accounting for intra-individual correlation in repeated measures, the researchers found that the HFIAS performed well according to standards in the field. They also observed slight improvement in reported food insecurity status over time, which seemed paradoxical given the increasing inaccessibility of food over the same time period due to food price inflation and reductions in food aid. Following a general trend of increasing food prices during 2005-7 in Ethiopia, the year 2008 was characterised by record highs during the first 8 months. This was followed by somewhat attenuated prices during the latter part of the year. The researchers attempted to resolve the paradox by considering self-report

related phenomena that arise in the context of longitudinal study designs. First, 'observation bias', in which respondents change their reports according to changing expectations of the observer-respondent relationship or change their behaviour in ways that ameliorate food insecurity after baseline self-reports. Secondly, 'response shift', in which respondents change their reports according to reassessment of internal standards of food insecurity.

A limitation of the study was that the researchers did not assess the distribution of government-subsidised wheat that could have helped to buffer some households from increasing food insecurity.

The authors conclude that the results of the study are important for the validation of food insecurity tools and for the sustainability of community health programmes reliant on volunteerism in sub-Saharan Africa. In particular, as low income volunteer health workers become an increasing part of the African and indeed global health work force, situations that are prone to induce response shifts will become increasingly common. More research is needed to ensure that existing instruments accurately and dependably assess the food security situation of individuals.

Experiences of the author in this research have been posted online at:

<http://www.youtube.com/watch?v=fGxYVvVikB0>

http://www.gs.emory.edu/about/stories.php?entity_id=18

¹ Maes K et al (2009). Food insecurity among volunteer AIDS caregivers in Addis Ababa, Ethiopia was highly prevalent but buffered from the 2008 food crisis. *Journal of Nutrition*, pp 1758-1764. Published online July 29th 2009.



Therapeutic challenges and treatment of hypovolaemic shock in severe malnutrition



Summary of proceedings¹

A recent article by Maitland on therapeutic challenges in the treatment of severe malnutrition focuses on the identification of children with sepsis and on fluid management strategies.

The World Health Organisation (WHO) has developed consensus management guidelines for the treatment of severe malnutrition. These include a stabilisation phase during which life threatening problems are identified and treated, a staged introduction of milk-based nutritional rehabilitation, micronutrient and vitamin supplementation and empirical use of antimicrobial and anti-helminth treatments. It is argued that with strict adherence to these guidelines, the mortality should be <5%. Whilst high case-fatality rates are often attributed to faulty case management, the evidence for this assertion is poor. Other workers have suggested that outcome is largely dependent on other factors, including the frequency of additional life-threatening complications.

At Kilifi District Hospital on the coast of Kenya, severe malnutrition is a common cause of admission. Here, 400-500 paediatric cases are treated annually. The current management approaches the gold standard recommended by the WHO. However, in-hospital mortality remains at approximately 20% and has been stable over time, despite in-service training and expansion of the dedicated nutrition team. In Kilifi hospital, the largest group of cases comprises children with uncomplicated malnutrition. For these children, the management and in-patient survival approaches the standard recommended by the WHO guidelines. However, a substantial group of children present with severe illness and life threatening complications and represent a major challenge to successful management.

A prospective study of children with severe malnutrition at Kilifi hospital has been conducted over the last decade which has identified a number of areas of concern in relation to management. Early mortality is of particular concern, as > 40% of deaths have been found to occur within 72 hours of admission. This finding suggests that triage, early identification and adequate treatment of life threatening complications are inadequate and need more careful scrutiny. In 2005, the Kilifi Severe Malnutrition Research Programme was established in order to systematically evaluate the current WHO management guidelines.

Gastroenteritis and dehydrating diarrhoea

Diarrhoea and dehydration at Kilifi District Hospital are managed in accordance with WHO policy. The results of the 2-year prospective study (June 2005-May 2007) include 667 children with severe malnutrition (10% of all hospital admissions). A total of 325 children (49%) were admitted with a history of diarrhoea, of which seventy-seven (24%) died. This compares unfavourably with 14% of the 342 cases that died which were uncomplicated by diarrhoea. Of note is the poor performance of the WHO danger signs (advanced shock defined as impaired consciousness together with capillary refill > 3s, a

weak pulse volume and a temperature gradient) to identify those children at risk of dying and the limited number that would qualify for intravenous rehydration. Despite severe biochemical derangement and other features of shock, only one of the 325 children with a history of diarrhoea was found to be eligible for intravenous fluid rehydration at admission. Fatal cases were more frequently found to be complicated by clinical evidence of dehydration or impaired perfusion, severe acidosis or electrolyte imbalance and invasive bacterial infection. A further ninety-eight children were found to develop diarrhoea after admission, of which 21% died. It was noted that in both groups, a number of children developed profuse osmotic diarrhoea. The author concluded that under the current WHO guidelines, intravenous fluid resuscitation is reserved for too few cases with signs of advanced shock, when it is probably too late. Thus fluid resuscitation is often associated with high mortality.

The use of the standard WHO oral rehydration solution (ORS) with 90 mmol Na/l for severely malnourished children (ReSoMal) has been cautioned because of its relatively high concentration of Na and low concentration of K. WHO has changed the formulation for ORS for non-malnourished children. Given the safety concerns surrounding ReSoMal, the introduction of a new standard ORS with lower Na content and higher K, and the author's observations that mortality remains high on current management, the author argues that prospective evaluation is warranted to compare ReSoMal against the new standard WHO ORS.

Treatment of hypovolaemic shock: phase 1 and 11 clinical trials

Current WHO guidelines recommend that children with severe malnutrition should not routinely receive intravenous fluids. Fluid resuscitation should be reserved for those with signs of decompensated shock. In this situation, treatment guidelines recommend an initial bolus of half-strength Ringers lactate, half-strength Darrow's solution or 0.45% (w/v) saline followed by whole-blood transfusion if the child fails to improve. The author of the study argues that these recommendations are based on two largely unproven concerns around salt and water overload and incipient heart failure. Limitations in these guidelines are highlighted. These include the fact that hypotonic fluids represent a much greater risk of fluid overload and that the use of blood as a volume expander is physiologically unsound.

The author cites two trials which have been conducted to examine volume expansion in severely malnourished children with shock secondary to diarrhoea or severe sepsis.

In the first phase, a single-arm prospective study examined the safety and efficacy of the current WHO shock treatment protocol in up to twenty children with severe malnutrition. In the second phase, a randomised control trial was conducted to examine the safety and efficacy of different intravenous replacement regimens compared with the standard WHO protocol. The intervention arms were full-strength Ringers lactate in the group with diarrhoea and a three arm trial (WHO treatment vs 5% albumin vs full-

A severely malnourished child attending the Kilifi programme

strength Ringers lactate) in the group with septic shock. In the first phase, recruitment was terminated after six of the seven children enrolled died. Most deaths were a result of uncorrected shock. In the second phase, trial mortality was high (54%). There was a non-significant trend towards a higher mortality in the WHO arm compared with the Ringers lactate arm. In all arms (WHO, Ringers lactate and albumin) the safety of the intervention fluids was demonstrated. It was concluded that fluid resuscitation with an isotonic solution should be re-evaluated prospectively in dose-escalation studies or by end-point directed treatment.

Myocardial function and response to treatment

In severe malnutrition there are limited data on cardiac function in children, with conflicting conclusions. A study in Jamaica concluded on the basis of reduced cardiac output that there was marked impairment of cardiac function. A study on Zairian children indicated that many children have signs of an adaptive hypo-circulatory state and some show frank peripheral circulatory failure comparable with hypovolaemic shock. Neither of these studies examined the response to volume expansion or other therapies.

Echo-cardiographic examinations and Doppler assessment of cardiac output using an ultrasound cardiac monitor have been undertaken. Initial examinations were conducted in children with clinical features of shock just before or after fluid resuscitation stabilisation of the child. Evidence of cardiac failure is not supported by the findings. Markedly reduced cardiac output concurrent with increased systemic vascular resistance was observed. Taken together with the finding of the fluid trial these results point to substantial volume depletion and reduced cardiac output.

What is apparent is that there are many lessons to be learnt across the specialities, from Africa to UK and vice versa. The clinical experience of managing severe malnutrition in Africa is complicated by severe electrolyte perturbations, shock and complex complications of gastroenteritis. These have also been highlighted in the management of difficult, complex gastro-enterological and nutritional problems and the refeeding syndrome.

Maitland concludes that resolving some of the complex and unresolved clinical therapeutic issues of African children with severe malnutrition requires a multi-disciplinary approach that may benefit from including international experts in nutrition, gastroenterology paediatric sepsis and critical care. This approach could be the basis on which to develop a programme of severe malnutrition research to address the fundamental scientific and treatment gaps that result in high in-hospital mortality in children with severe malnutrition in Africa. Valuable lessons may be learned by sharing experiences with specialists managing complex nutritional problems on both sides of the equator.

¹ Maitland, K (2009). Symposium 5: Joint BAPEN and Nutrition Society Symposium on 'Feeding size 0: the science of starvation'. Severe Malnutrition: therapeutic challenges and treatment of hypovolaemic shock. Proceedings of the Nutrition Society (2009), vol 68, pp 274-280



Valid Nutrition, 2009

Impact of local RUTF manufacture on farmers' incomes in Malawi

By Marta Ortiz Nunez



Marta Ortiz Nunez is a recent Masters graduate in International Development. In 2006 she co-founded a Spanish non-governmental organization focusing on development of rural and urban areas of Nicaragua and has worked for a number of other development NGOs.

This work was undertaken as an MSc research project for the International Development Department, University of Birmingham, UK.

The author expresses her gratitude to the people who supported her field study in Malawi. In particular she thanks Valid Nutrition for accommodation and access to their factory, the National Smallholders' Association of Malawi (NASFAM) that enabled access to the farmers' clubs in rural areas, and Dr. John Watson, for his help, support and always encouraging words. Finally, her thanks to the respondents of Mchinji Area Smallholder Farmers Association (MASFA), Malawi.

Field article

This article describes the experience of local production of Ready to Use Therapeutic Food (RUTF) in Malawi by Valid Nutrition with regard to economic impact on local farmers.

Food aid is essential in certain contexts. However, it is widely acknowledged that food aid programmes can have a negative impact on the economies of developing countries. Food aid can create disincentives for local agricultural production¹, depress prices² and act as a disincentive for labour supply. It is therefore vital that food aid programmes take into account the potential damage that they may cause to the local economy³ while exploring mechanisms for benefitting the local population. For example, food aid can be positive if it is locally procured⁴ since local raw materials are easier to procure, store and transport and are less likely to be stolen (less corruption). Also, local farmers are paid for the local ingredients, which has a positive effect upon farmers' income source.

Potential benefits of local RUTF production in Malawi

With the expansion of community based management of acute malnutrition (CMAM), one form of food aid – Ready to Use Therapeutic Food (RUTF) – has increasingly been used. The most common RUTF recipe is made from milk powder, vegetable oil, sugar, peanut paste and powdered vitamins and minerals. It is energy-dense (about 5.5 kcal/g) and provides minerals and vitamins in precise quantities specific to the treatment of severe acute malnutrition.

Experiences to date have found that RUTFs can be safely and easily prepared with a simple industrial infrastructure that allows its local production at small or large scale. It has been argued that encouraging local procurement among suppliers of RUTF can decrease the cost⁵ while creating jobs through local production and benefits to local agricultural economies. Local production shortens supply chains allowing beneficiaries to access RUTF more quickly and cheaply. Furthermore, if local production can reduce costs, then agencies, clinics and non-governmental organisations (NGOs) can purchase and distribute more RUTFs so that a greater number of severely malnourished children can be treated (See Box 1).

Valid Nutrition⁶, which has recently received UNICEF accreditation as a supplier

¹ Oxfam, (2005). Food Aid or Hidden Dumping?, Oxfam briefing paper, Oxfam. Available at http://www.oxfam.org/sites/www.oxfam.org/files/bp71_food_aid.pdf

² FAO, (2006). The State of Food and Agriculture: Food aid for food security? Food and Agriculture Organization of the United Nations: Rome.

³ Clay, E.J., Dhiri, S. and Benson, C., (1996), Joint Evaluation of European Union Programme Food Aid, London: Overseas Development Institute

⁴ Awokuse, T.O. (2006). Assessing the Impact of Food Aid on Recipient Countries: A Survey, Working Papers 06-11, Agricultural and Development Economics Division of the Food and Agriculture Organization of the United Nations (FAO - ESA).

⁵ Henry, C. J. K. and Seyoum, T. A. (2004), *An Alternative Formulation of Ready-To-Use Therapeutic Food (RUTF) for Use in Supplementary Feeding*, Oxford, UK: Valid International. Collins, S. (2004), *Community-based therapeutic care: A new paradigm for selective feeding in nutritional crises*, 48. London: Humanitarian Practice Network. Overseas Development Institute, Network Paper. Available at <http://www.odihpn.org/documents/networkpaper048.pdf>

⁶ Valid Nutrition is an Irish registered charity that produces RUTF products exclusively in developing countries.

of RUTF in Malawi, believes that local production of RUTF provides a "unique opportunity to develop local food manufacturing industry, providing viable markets for a range of locally grown crops"⁷. To further this, they have developed and tested new RUTF recipes, designed to stimulate demand for a variety of crops, such as chickpeas or sesame, which will improve agricultural diversity and reduce vulnerability to changing rainfall patterns. Others involved in RUTF production in Malawi feel one of the reasons that local production of RUTF is attractive is that "locally grown peanuts, oil and sugar can be purchased in the country where they are being used, and this will support the local economy"⁸. Agencies involved in CMAM programming, such as Concern Worldwide, consider increased local production of RUTF to be essential for increasing the availability of the product globally, regionally and nationally⁹. Overall, manufacturing RUTF in developing countries from appropriate locally grown crops effectively harnesses market mechanisms, linking the treatment of malnutrition to the promotion of agricultural diversity, whilst lowering the cost of RUTF and providing local employment.

Research Aim

The overall purpose of the study was to determine whether and how local procurement of raw materials for Valid Nutrition's RUTF production in Malawi benefited local farmers.

The objectives of the study were to:

- Study the economic impact upon local farmers when ingredients needed for development of RUTF are produced locally.
- Assess the necessity of the presence of intermediaries in the relationship between Valid Nutrition and local farmers.
- Examine the mechanisms Valid Nutrition employs to benefit local farmers through the purchase of raw materials.

Study method

The fieldwork for the study involved observations and interviews using questionnaires and focus group discussions (FGDs) with members of the Mchinji Area Smallholder Farmers Association (MASFA). MASFA belongs to the National Smallholder Farmers' Association of Malawi (NASFAM)¹⁰, which is the largest independent, smallholder-owned membership organisation in Malawi. It is organised as a corporation and works through farmers' clubs and endeavours to promote local capacity building and empower local farmers to achieve development through agriculture. NASFAM plays an important role in the local procurement chain since they connect local small farmers with manufacturers such as Valid Nutrition (see Box 2).

⁷ Valid Nutrition (2007), Valid Nutrition Brochure; Available at <http://www.validnutrition.org/>

⁸ Manary, M.J. (2006), "Local production and provision of ready-to-use therapeutic food (RUTF) spread for the treatment of severe childhood malnutrition". Food and Nutrition Bulletin, 27(3), pp: 83-89

⁹ Gatchell, V., Forsythe, V. and Thomas, P-R (2006), "The sustainability of community-based therapeutic care (CTC) in non emergency contexts", Food Nutrition Bulletin, Volume 27, number 3, September 2006 (Supplement – SCN Nutrition and Policy Paper No. 21), pp: 90-98

¹⁰ www.nasfam.org

Box 1: Relationship between local production and affected population

Local production of RUTF can lead to:



Interviews were arranged with 21 farmers from MASFA. The sample of farmers belonged to eight different clubs of 10 to 20 members each. Thirteen of those interviewed were women and eight were men, all aged in their forties. Interviews were also carried out with Valid Nutrition, NASFAM staff and external actors, such as the Ministry of Agriculture and Food Security, UNICEF and WFP.

Findings

Views of NASFAM and Valid Nutrition

NASFAM was officially formed in 1995 and emerged from a USAID funded project aimed at enabling farmers to access the tobacco market. Since then, NASFAM has focused on helping farmers diversify crop production including maize, groundnuts, rice and soya beans. NASFAM is present in 19 out of 29 Malawian districts and chooses work locations based on an assessment of where market failure is most pronounced. They therefore work mainly in southern and central regions of Malawi.

Valid Nutrition is highly aware of the potentially damaging impact of long-term importation of a product like RUTF and that local farmers could benefit significantly from a steady demand for crops like groundnut, which is a major component of RUTF. This is why Valid Nutrition has chosen to work with NASFAM, which aims to support local farmers and local production.

Valid Nutrition hopes to become a stable supplier of RUTF for UNICEF, as well as to export on a larger scale to other African countries. To that end in 2009, they substantially increased the production capacity of their Malawi factory up to 2000MT /year, installed a sachet packaging machine and are currently waiting for UNICEF to visit and re-inspect for certification as an international supplier. Valid Nutrition is also trying to develop new formulae for RUTF with crops such as chickpeas, sesame and soya which are all rich in proteins. This will reduce the quantity of expensive imported milk powder required and stimulate diversity of crop production locally. Controlled trials into several of these recipes are ongoing.

Box 2: How NASFAM works

Between 10 and 20 farmers in a village form a farmer club which then, in turn, joins 10-20 other clubs to form a market action committee (MAC). These committees come together to form a NASFAM Association. There are currently 42 associations with a total membership of 108,000 individuals.

There are two branches of NASFAM. NASFAM Commercial implements activities which include marketing inputs to farmers as well as marketing their produce. NASFAM also tries to guarantee a market by buying left-over crops of member farmers. NASFAM Development is a non-profit entity which receives funds from donors to support development and capacity building.

External agency views

Concern Worldwide and UNICEF stated that local procurement was positive in terms of preventing negative impact of food aid on the market and fostering development. However there were some concerns expressed over inflated prices being paid for local ingredients by some international NGOs and agencies and that this was not sustainable. At the same time, local procurement was certainly leading to lower RUTF prices than those charged by Nutriset France who have higher transport costs. Purchase from local producers and local production of RUTF also meant less delay.

Study limitations

There are a number of limitations to the study, such as the small size sample of farmers and the research being based on the experiences of one local manufacturer, Valid Nutrition (another significant manufacturer in Malawi, Project Peanut Butter, was unable to participate due to time constraints). Validity and reliability of the findings may have been compromised by using an expatriate interviewer which could have meant exaggerated negative reports from association members in order to secure more help. The interviewer had to rely on the translator to interpret responses. Use of a NASFAM translator could have led to a positive bias towards how the association was represented. Unrepresentative participation is a risk with the methodology, where the interests of dominant groups or individuals can dominate interviews/FGDs. For example, during the FGD with farmers, men tried to take control over the discussion.

Conclusions

The study found that Valid Nutrition is successfully producing and marketing RUTFs in Malawi and small farmers have benefited from it through increase in the demand and production of RUTF, accompanied by significant increases in the income and living standards of an increasing number of farmers. The overall impact of local procurement remains limited, since only around 6,000 farmers who are MASFA members, have benefited from this activity.

The study reinforced the value of local manufacturers like Valid Nutrition working with intermediaries like NASFAM in order to access local farmers, and to enable farmers to link to new 'markets'. Without the help of this local intermediary and their role in building local capacities, it would have been difficult for Valid Nutrition to set up the local procurement and production process that now exists in Malawi.

Lack of stability in the market for RUTF is a constraint. In order to increase levels of local procurement and its positive impact on farmers, Valid Nutrition needs to have a stable level of 'customer demand'. Without this, NASFAM is uncertain about the quantity of groundnuts required by Valid Nutrition and without a 'demand guarantee' it is difficult to scale up and develop crop production. To an extent, this dynamic is problematic and reflects partly the nature of the market, wherein demand for RUTF depends on prevalence of malnutrition which is not stable and varies from year to year.

For further information, contact Marta Ortiz Nunez, email: martaortiznunez@gmail.com

¹¹ NASFAM has a laboratory geared up for quality control of Products. For groundnuts, the laboratory assesses aflatoxin contamination as well as presence of debris like stones or wood.

Local purchase of ingredients for RUTF in developing countries?

By Steve Collins



Steve Collins is a medical doctor with a doctorate in nutrition. He has been working in humanitarianism since 1985 and is the originator of the CTC/CMAM model for the management of severe acute malnutrition. Since 1999 he has been working with Valid to develop and roll out this model worldwide. He is the non-executive chairman of Valid Nutrition.

The manufacture of Ready to Use Food (RUTF) in developing countries, using ingredients purchased from local farmers, has always been a central element in the Community-based Therapeutic Care (CTC) model (see ENN special supplement #2 on CTC – 2004)¹. Improving the food security of vulnerable groups, by providing small holder farmers with stable markets for their crops at guaranteed prices, and linking this with the cost effective treatment of undernutrition has great potential to drive development and reduce poverty. The local production of nutritional products in developing countries creates positive economic cycles, increasing the efficiency with which aid funding produces sustainable positive change. By contrast, importing nutritional products manufactured in Europe or America results in the majority of aid funding staying in developed countries, providing employment to 1st world workers and profits to businesses and shareholders in the industrialised world. Worse, the importation of food into developing countries undermines markets for local farmers and food manufacturers, increasing dependence and depressing economic development.

Marta Ortiz Nunez's research on Valid Nutrition's (VN) work to purchase ingredients from small holder farmers in Malawi draws attention to the benefits of this approach and highlights some of the challenges that we face. Despite the positive impact of this programme, we still have a long way to go to maximise the impact of our purchase of local ingredients. Currently Valid Nutrition has an extensive operational R&D programme to further develop our links with small holder farmers and research the impact that this has on their livelihoods and food security. At the time of this research, Valid Nutrition's production capacity in Malawi was approximately 700 MT /year. This relatively small scale limited the benefits of our purchase programme to hundreds rather than thousands of poor farming families. To reach more farmers, and also, vitally, to achieve the necessary economies of scale to bring down the price of RUTF, VN has now tripled the capacity of the Malawi factory to 2000MT/year, installing larger mixing and pumping machinery,

a closed production line and a state-of-the-art sachet packaging machine. However, to sustain these higher production volumes in a small country such as Malawi requires either the ability to export RUTF to neighbouring countries or an extension of the use of Ready to Use Foods into other areas such as supplementary and complementary feeding. Whilst there is huge potential for the appropriate use of Ready to Use Supplementary and Complementary (RUSF & RUCF) products to treat and prevent malnutrition, marketing of these products needs to wait for a sound evidence base. At present Valid and our research partners have several ongoing randomised controlled trials (RCTs) looking at the impact of RUSF and RUCF. If these prove to be successful, we will start to manufacture and sell these products.

Until this evidence exists, sustainable production of RUTF in Malawi is dependent upon export into countries such as Zambia, who currently import RUTF from Europe. For this to happen, a system of independent quality certification for RUF manufacturers is required. At present, no such independent mechanism exists, creating a major obstacle to sustainable local production. UNICEF has attempted to fill this vacuum with their own certification procedure and in the absence of other independent mechanism, most agencies and donors have adopted UNICEF certification as their standard. This is problematic, as with limited certification capacity, UNICEF focus on their own strategic needs rather than on a broader strategy of opening up the RUTF market to fair competition. The result is that RUTF suppliers in countries that are not a UNICEF priority are effectively prevented from entering wider markets. For developing country food manufacturers to compete on an even playing field with producers from the industrialised world, such issues must be addressed, and an independent and transparent certification system is now urgently required. Without this, the market will continue to be dominated by expensive imported products and the development benefits from producing quality nutritional products in developing countries will be lost.

¹ <http://www.ennonline.net/resources/652>

Full MAMI report now available



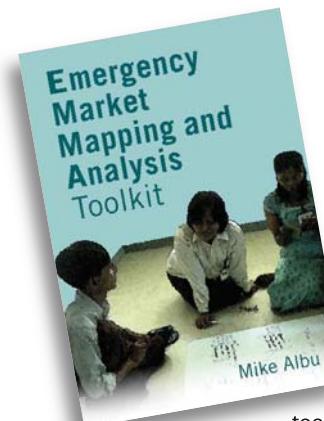
The full report of the Management of Acute Malnutrition in Infants<6 months (MAMI) Project – MAMI Project. Technical Review: Current evidence, policies, practices & programme outcomes – is now available electronically or on CD.

The MAMI Project was a collaborative effort between ENN, University College London Centre for International Health and Development (CIHD) London and Action Contre la Faim, funded by the UNICEF-led IASC Nutrition Cluster.

The aim of the MAMI Project was to investigate the management of acutely malnourished infants under six months of age (infants <6m) in emergency programmes, in order to improve practice by contributing to evidence-based, better practice guidelines.

Download the full report, including by chapter, and the summary report at:
<http://www.ennonline.net/research/mami>

To request a CD copy, contact the ENN, email: office@ennonline.net, tel: +44 (0)1865 324996



EMMA toolkit now available

The Emergency Market Mapping and Analysis toolkit (EMMA) is now available.

The toolkit is a guidance manual to assist front-line staff to do rapid assessments of market systems in the first few weeks of a crisis. Its purpose is to improve early response planning so that resources are used effectively, and so that opportunities are not missed to bolster future recovery in the local economy.

EMMA is designed for generalists, as well as specialist staff working in the food security, shelter, water and sanitation sectors. Ten practical steps help to understand the important market aspects of an emergency situation, and communicate this knowledge promptly and effectively to decision-makers. EMMA assumes limited previous experience of economic or market analysis.

Hard copy can be ordered via Oxfam Publications and Practical Action Publications websites:
<http://publications.oxfam.org.uk/oxfam/display.asp?K=e2010021209180368>
<http://www.practicalactionpublishing.org/publishing/emma>

Soft copy can be downloaded from the Oxfam publications website (above) or the Oxfam web page:
http://www.oxfam.org.uk/resources/learning/humanitarian/food_security

To join the online discussion group (D Group) for EMMA, visit www.dgroups.org/dfid/emma

DFID launches Nutrition Strategy

The Department for International Development (DFID) UK has just launched its new Nutrition Strategy (March 2010). This 20 page document sets out a range of immediate and longer-term measures to reach pregnant women and children under the age of two years in countries with the highest burden of undernutrition. Described as the "critical first 1,000 days from conception", this period is considered the key window in which malnutrition has to be tackled.

DFID will invest in direct interventions known to achieve high impact at low cost, e.g. breastfeeding support, micronutrient supplementation, as well as indirect interventions which tackle underlying causes. Specific attention will be paid to gender equality. The strategy is founded on core guiding principles and has four strategic objectives:

- **Mobilising and coordinating the international response.** For example, in 2010 DFID will support the development of a Global Action Plan on nutrition to be launched at the MDG Review Summit in September.
- **Reaching 12 million children through programmes in partner countries.** Efforts will be focussed on Bangladesh, Ethiopia, India, Nepal, Nigeria and Zimbabwe that together account for half of the world's undernourished children under five.
- **Investing in multiple sectors to deliver improved nutrition.** For example that support for social protection, agriculture, health, water and sanitation, governance and education also delivers on nutrition.
- **Building evidence and demonstrating results.** DFID will invest in research and evaluation programmes to enable impact measurement of work and tackle critical gaps in knowledge, including how to tackle the underlying causes of undernutrition.

The framework for action is described according to 5 objectives:

Objective 1: Building international support, co-ordination and coherence for action on nutrition globally

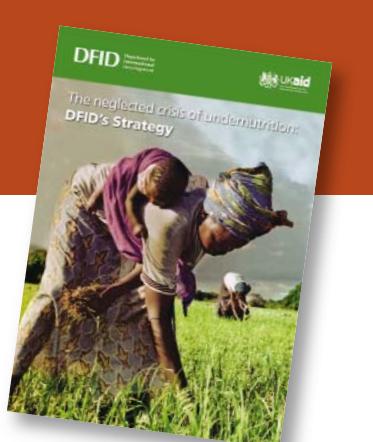
Objective 2: Identifying partners, building support and scaling up programmes in partner countries

Objective 3: Ensuring our investments in multiple sectors deliver improved nutrition

Objective 4: Building evidence, demonstrating results

Objective 5: Delivering the strategy

Described under Objective 3, support to emergencies will include investment in increasing capacity for nutrition in countries prone to emergencies. DFID commit to allocating at least 50% of all new bilateral aid to fragile and conflict affected states and investing 10% of humanitarian response funding in helping to prepare for future crises.



DFID will continue to invest in strengthening the evidence base for humanitarian action, improving coherence in needs assessment initiatives and improving integration of information to benefit consistency and quality. Support to UNICEF to implement the Nutrition Information Project for the Horn of Africa will continue. DFID will also support efforts to include nutritional measurements in food security information systems where they exist, including feeding this information into the Integrated Food Security Phase Classification. DFID will promote improved methods for measuring and monitoring nutritional outcomes, through support to NGOs on evidence and needs assessment during humanitarian response. DFID will support to UNICEF as nutrition cluster lead and an effective channel for good quality information.

DFID will work with the European Commission (DG ECHO) to ensure that, in emergencies, direct and indirect responses to acute undernutrition are prioritised, and that more nutrition needs are met. DFID will support humanitarian actors to prevent acute undernutrition and achieve Sphere minimum standards for programme coverage. DFID will continue to support WFP to strengthen the nutritional impact of its food assistance and help UNICEF and the nutrition cluster to fill any critical gaps in the nutrition response, such as infant and young child feeding support for women and young children.

Because chronic undernutrition is often very high preceding an emergency, response to the acute situation must maximise impacts on stunting. DFID will seek to make certain that approaches for tackling the chronic problem are strengthened as a result of the humanitarian response through building better connections with longer term development work.

DFID will monitor the implementation of this strategy on an annual basis and boost the organisation's own capacity to deliver it.

For more information and to access the Nutrition Strategy, visit:

<http://www.dfid.gov.uk/nutrition>

DFID Department for International Development

¹ Dibari, F and Tondeur, M (2010). What is the bioavailability of micronutrients from RUTFs in children affected by SAM. Brainstorming workshop Report. 18th January 2010.

Update on en-net discussions



By Tamsin Walters,
en-net Moderator

This is a summary of some of the 'hot' discussion topics on the online forum, en-net, www.en-net.org.uk since the last issue of Field Exchange.

Over the 3 months November 2009 to January 2010, 12 questions have been posted on en-net, eliciting 50 responses. Eight of those questions were in the Assessment thematic area. Popular topics were accurate measurement and interpretation of MUAC and issues of survey/study design, with a particular emphasis on effective sampling procedures to provide meaningful results.

Questions on appropriateness of different survey methodologies to support various objectives were explored. These included possibilities for analysis and use of data from surveys over large geographical areas with multiple livelihood zones, e.g. stratified approaches such as DHS/MICS (UNICEF) approach. The temptation with this type of survey to make comparisons between districts/livelihood zones within the survey may lead to false conclusions and incorrect assumptions as sample sizes are often too small in each stratum to provide a representative estimate, unless accurately estimated at the outset. The objectives of a survey are of utmost importance when considering the design. It is all too common for practitioners to overload survey questionnaires to try and capture as much information as possible. This increases the likelihood of a reduction in the quality and reliability of the data, as surveys become lengthy and time-consuming for both interviewee and survey team. Many of the 'additional' variables collected in surveys are little used afterwards. In addition, it is often difficult to comment usefully on causality of malnutrition using contextual survey data. Whilst Forum Moderators attempted to get an input from UNICEF on the MICS approach, unfortunately none has yet been forthcoming.

Changes to the guidance for measuring mid-upper arm circumference (MUAC) and the proposed abandonment of the '10 steps' approach were raised. The discussion highlighted the challenges and complexities inherent in a seemingly simple measurement and its interpretation. Discrepancies in measurements between community referral staff and those admitting children for programmes can result in rejected referrals, affecting both coverage and community participation. Historically some of the ten steps, such as using the left arm, were adopted from experience measuring MUAC in adults and have since been thought less essential for children. WHO investigations found no evidence of improvements in precision/reproducibility where measurers were using the 10 steps approach in comparison with a quick, rough estimation of the mid-point of the upper arm. However it appears that the importance of the 10 steps was not formally assessed prior to the agreement to abandon them. The same measurers tend to assess pregnant and lactating women for programme entry as well as children. It would therefore seem advisable to use one method for both groups if feasible and to ensure that the method which provides the most accurate measurements is supported. Thorough training and supervision remains an essential ongoing requirement for programmes using MUAC. Appropriate width and materials for bands, as well as the use of plain versus coloured straps and the development of pressurised straps are all areas of continued research and development.

en-net now has approximately 300 subscribers, 29 of whom joined between November 2009 and the end of January 2010. Over this 3 month period, the site received a total of 2,216 visitors (although a bounce rate of 61% suggests that 864 were 'genuine' visitors), averaging 2:35 minutes browsing time per person and notching up 7,263 page views.

In March, a new area to en-net was added for 'Discussions' to enable people to raise issues that are broader than, or do not fit neatly within, specific thematic areas. We hope this will encourage some interesting debates on topics which span the humanitarian agenda, with a focus on nutrition in context as a component of the broader endeavour.

Contribute to the en-net questions/discussions by visiting www.en-net.org.uk or click on the link on the ENN home web-page.

Informal workshop on bioavailability of micronutrients in RUTF

Summary of workshop report¹

Ready to use therapeutic foods (RUTFs) and ready to use supplementary foods (RUSFs) are two types of ready to use food (RUF) or more specifically, examples of lipid-based nutrient supplements (LNS). They are critical in the community-based treatment of severe and moderate acute malnutrition (SAM & MAM) and are currently largely used in feeding programmes. Since 2008, therapeutic feeding programmes worldwide have employed 8000 tons of RUTFs, with a trend of demand rapidly increasing.

Important aspects regarding the bioavailability of micronutrients in these products are not fully known and need more research. RUTFs and RUSFs require a specific micronutrient profile to enable rehabilitation of acutely malnourished children, however the absorption of the micronutrients from such products is not clearly understood. Most available evidence on bioavailability of micronutrients is based on supplementation interventions, which differ from RUTF interventions in two aspects. First, supplementation studies are based on drops or tablets, which are non food matrixes. Secondly, studies are conducted using non SAM (or non-MAM) subjects, however absorption and metabolic systems of the malnourished are generally compromised. Furthermore, no evidence is available on the effect of enhancers or inhibiting factors (i.e. anti-nutritional factors) on the bioavailability of the micronutrients from these kinds of products, which contain relatively high levels of phytate. Bioavailability studies are costly and undertaking research in the settings where SAM occurs is often challenging. Nevertheless, generating evidence on these aspects is important as it may lead to improvements of the impact of these therapeutic products, as well as to a better understanding of micronutrient absorption mechanisms in acutely malnourished children.

In January 2010, an informal workshop was organised by Valid International and the UCL Centre for International Health and Development (CIHD) focused solely on the questions related to the bioavailability of micronutrients from RUTF in SAM children. University and private sector researchers, together with nutrition practitioners interested in the rehabilitation from malnutrition, met in London, UK for a half-day of brainstorming activities about the bioavailability of micronutrients when using energy-dense food matrixes (currently called RUTF, RUSF or LNS). During the workshop, ideas were exchanged on how to measure and increase micronutrients bioavailability in RUTF, to treat SAM in children. The main questions raised, basis of discussions and suggestions/inputs for possible follow-up research ideas are presented below.

Research questions 1: Which changes could be made to the formulation of RUTF to improve bioavailability of micronutrients?

RUTF is composed of pre-processed food-based ingredients, mixed with a chemical premix of

vitamins and minerals. More cereal and pulse-based formulations, as alternatives to peanut-based ones, are expected in the near future. The chemical forms of the vitamins and minerals in available premixes differ. Understanding the bioavailability of micronutrients in RUTF requires collecting evidence on food-based ingredients, as well as the specific chemical forms and dosages of added vitamins and minerals.

A number of activities and research questions were identified:

- Test different food-based ingredients of the RUTF with lower contents of anti-nutritional factors.
- Update food composition databases related to micronutrients, which are currently often incomplete (e.g. too few micronutrients listed, methods for analysis not specified, chemical forms not declared).
- Identify chemical forms and doses of vitamins and minerals which are sufficiently bioavailable in children with SAM. Key aspects to consider are:
 - i) cost of different chemical forms,
 - ii) encapsulation vs. non-encapsulation,
 - iii) minimum, safe, efficacious dosage when using more bio-available forms (e.g. for iron: use of EDTA; use of small particle size iron (Lohmann), nano form – under development by Azko-Nobel company, or micronized form (SunActive™)).

Question 2: What are the physiological-related factors influencing the bioavailability of micronutrients in SAM subjects?

It is not clear how SAM affects the ability to absorb and utilise micronutrients available from RUTF. Current knowledge on the metabolism of absorption and utilisation of micronutrients among both healthy children and children with micronutrient deficiencies may not apply to children with SAM. Phytic acid is among the main anti-nutritional factors influencing the bioavailability of a few micronutrients in RUTF (e.g. iron, zinc). A new form of phytase enzyme has been successfully tested in healthy adults.

Activities and research questions identified:

- Test RUTF with added phytase:
 - (i) address ethical issues (and regulatory issues) in conducting research on phytase in children with SAM, (ii) select phytase-liquid vs. powder form (developed by DSM), (iii) consider stability/activity of the enzyme in the specific matrix of RUTFs, (iv) address the specific gastric environment in SAM (i.e. higher pH) which might impede the phytase activity.
- Research on phytase could potentially generate interest in using other kinds of digestion-activated enzymes, such as amylase and tannase.
- Identify maximum tolerable dosages of micronutrients before they become hazardous (e.g. free iron left in the gut when using iron sulphate).

Question 3: Which micronutrients should the research focus on?

The rehabilitation from SAM is achieved only if ALL the micronutrients required are not only present and bio-available, but also, for some of them, when combined according to pre-determined ratios between them. However, the complexity and the cost of measuring the bioavailability of micronutrients limit the choice for research to a few nutrients.

Given this, the group agreed to focus the research on the micronutrients which are required to be in specific ratios with others, since these coincide also with the most crucial ones: Ca, Cu, Fe, K, Mn, Mg, Ph, Se, Zn, vitamin E (and vitamin A eventually).

Study designs and research context

The workshop participants had experience in measuring bioavailability on a limited number of micronutrients (namely iron, zinc, vitamin A and iodine). Participants proposed a few study designs outlined below, which need to be expanded and reviewed by bioavailability experts. For example, it was noted that stable isotopic studies on iron can be realistically undertaken under field settings (e.g. refugee camps) as cold chain transport is not critical (therefore no need for liquid nitrogen), and sophisticated lab equipment can be used elsewhere for blood sample processing and analysis. On the other hand, the participants did not know about the challenges related to studying other types of micronutrients bioavailability (e.g. isotope balance).

Two trial designs were proposed:

Phase 1 study in healthy young children (cross-over, bioavailability study) to test (a) impact of phytase on bioavailability of micronutrients and/or (b) to compare the bioavailability of micronutrients from different food formulations of RUTF. Points for consideration were:

- The use of stable isotopic studies.
- The need to ensure to feed RUTF in advance of any trial to the child, so that child gets used to its taste.
- Question as to whether such a trial could be conducted in children with SAM, given the challenges of rapidly changing health status and regurgitation.
- How to best integrate isotopic labels into RUTFs.

Phase 2 study in SAM children to test efficacy of best formulation(s) identified in phase 1 measuring micronutrient status and recovery from SAM.

Next steps

Participants expressed interest in taking these research topics forward and shared possible ideas and funding sources to do this.

For more information, contact: Filippo Dubari email: filippo@validinternational.org or Mélody Tondeur, email: m.tondeur@ich.ucl.ac.uk

¹ Dibari. F and Tondeur. M (2010). What is the bioavailability of micronutrients form RUTFs in children affected by SAM. Brainstorming workshop Report. 18th January 2010.

Baseline Report: Africa Community Resilience Project

The Feinstein International Centre has recently released the first of three reports under the Livelihoods Change over Time research programme. *The Baseline Report: Africa Community Resilience Project* shares research and programme experiences from Tsaeda Amba Woreda, Eastern Tigray, Ethiopia.

The Africa Community Resilience Project (ACRP) was designed by World Vision International, in line with the Hyogo Framework for Action, as a blueprint to creating resilient communities. The project is research-based and will build capacity for improving resilience through disaster risk management programming and mainstreaming. Tufts University was engaged to conduct the research and programmatic learning. This report provides information on baseline conditions at the household level and at kebele¹ level on the institutions responsible for Disaster Preparedness (i.e. that manage risk at the local level). It also provides an assessment of risks and hazards as perceived by local communities and their leaders. The report concludes with some recommendations to ACRP managers.

The full report can be downloaded from: <https://wikis.uit.tufts.edu>

¹ A kebele is the smallest administrative unit of Ethiopia.



Initiatives to improve training on nutrition in emergencies

A new Emergency Nutrition Network (ENN) initiative to improve the capacity to respond to nutritional emergencies by strengthening professional training has recently received funding from the US Office for Disaster Assistance (OFDA). The two year initiative encompasses two projects; one implemented by the Centre for International Health and Development (CIHD) and one by the partnership, NutritionWorks. OFDA has also provided funding to the ENN for the update of a key tool, the Harmonised Training Package (HTP), which is being used in the development of these training initiatives.

CIHD is collaborating with universities and institutes in Asia, East Africa and the Middle East to run professional training courses in emergency nutrition. The intensive short courses are based on the HTP, the development of which was funded and coordinated by the Global Nutrition Cluster (GNC) and managed by NutritionWorks, and combine theory with practical group exercises and problem solving. Course modules will be led by experts in the field of emergency nutrition. Each course will culminate with an emergency simulation to help participants apply their knowledge and to understand the challenges of working in emergency settings. The courses are suitable for a wide range of professionals, including nutritionists who are interested in working in the emergency sector, and individuals working in health, food security and livelihoods who want to learn how to prevent and treat malnutrition in emergencies.

NutritionWorks is developing pre and in-service training in nutrition in emergencies with the aim of reaching 'front line' national staff. The project is being piloted in Kenya and in one country in Asia (to be determined). Nutrition in emergency modules based on the HTP will be introduced into university and college courses for district and regional nutritionists, nurses and home economists. Lecturers will attend a two week 'Training of Lecturers' course to update their technical knowledge and teaching skills, and to develop appropriate curricula for their institution. Links between academic and operational agencies will be fostered to increase opportunities for practical student placements and for course fieldwork.

NutritionWorks is also overseeing the production of Version 2 of the HTP, in collaboration with the Capacity Development Working Group of the GNC, and guided by an ENN/NW editorial committee. Over half of the 21 HTP Modules will be updated in 2010 to reflect new developments in the sector, new guidance and policies as well as to strengthen the content and make it more useful for practitioners, trainers and managers at country, regional and the global level.

More information about the training initiatives can be found at <http://www.ennonline.net/network/nietn> or follow progress on Twitter (<http://twitter.com/NIEtraining>) or via Facebook to get the latest updates. For more information about the dates, prices and locations of the professional short courses, please contact: NIEtraining@gmail.com.

The HTP can be found at http://www.unscn.org/en/hosted_websites/gnc_htp/modul.php. For more information on the HTP update contact Carmel Dolan, email: cdolan@aol.com

Real-time learning and evaluation on Haiti

To facilitate and promote real-time learning and evaluation throughout the response and into recovery, ALNAP have developed a Haiti Learning and Accountability Portal. This is a single site where it is possible to share details of ongoing and planned learning and accountability activities.

Visit the portal at: <http://www.alnap.org/current/Haitilearningportal.aspx>

To add anything to the portal, email details to: Josh Harris, email: j.harris@alnap.org

For those planning Real Time Evaluations (RTEs) of the Haiti response, the ALNAP RTE Guide is a useful resource. As a pilot version, feedback on its use is welcome.

Download the guide from <http://www.alnap.org/resources/guides/evaluation/rte.aspx>

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Humanitarian Horizons: Practitioners' Guide to the Future

The Humanitarian Horizons project is a futures capacity-building initiative intended to assist the humanitarian

sector to prepare for the complexities of the future. It operates by enabling organizations to enhance their anticipatory and adaptive capacities.

The project is implemented jointly by the Feinstein International Centre of Tufts University and the Humanitarian Futures Programme of King's College, London and was launched in 2008. The project report, Humanitarian Horizons: Practitioners' Guide to the Future, has recently been produced (Jan 2010).

At the outset of the project, four reports were commissioned on what the future might look like, focusing respectively on climate change, globalisation, demographics, and changes in the humanitarian system. An Inter-Agency Working Group (IWG) – comprising Catholic Relief Services, the International Rescue Committee, Mercy Corps, Oxfam America, World Vision Australia, World Vision

Canada, and World Vision International - collaborated to reflect on these reports, and this analysis is presented.

In examining possible future scenarios and their consequences for humanitarian agencies, three central themes emerge. They are:

- The emergence of a "new humanitarianism" that will be part of neither the humanitarian nor development systems.
- The continued growth of information, communication, and technology tools will transform the way in which the world does business.
- Strategic leadership will be central to humanitarian action in an increasingly uncertain world.

The authors consider the guide as just one tool to encourage creative thinking and more experimentation with new practice. It should stimulate debate about agency futures and the futures of the communities they serve, working with them to develop new ways of providing assistance and protection.

The report and the commissioned papers are available to download at <https://wikis.uit.tufts.edu>



A mother and young child in the Gaza Strip

Omarra Darmi, Gaza Strip, 2009

Assessing the intervention on infant feeding in Gaza 2008

By Susan Thurstans and Vicky Sibson



Susan Thurstans has been part of the emergency response team for nutrition with Save the Children UK since January 2009 and previously worked for ACF for 6 years. She is also the focal point for nutrition on the current revision of Sphere.



Victoria Sibson has been the emergency nutrition adviser for Save the Children UK since April 2007, with a focus on treatment of acute malnutrition and infant and young child feeding in emergencies.

Thanks to all staff who participated in the survey particularly the tireless support of Mahasen Abu Hassan and Rania Muhamna in the design and implementation of the survey and the distance support from Ribka Amsula. Thanks also to Kirk Dearden and Mary Lung'aho for their support during the planning and analysis of the survey



Field Article

The two field articles that follow share different experiences of working in Gaza during the 2008/09 conflict. Both deal with the area of infant and young child feeding especially. It is important to note that the Save the Children assessment is not a critique of the programme described by NECCCRW; both agencies operated in different areas and were submitted independently to Field Exchange. Also, while the Save the Children programme was part of an emergency response, the NECCCRW programme happened to coincide –rather than directly respond to – the emergency.

The production of these articles has opened up constructive and considerable discussion between both sets of authors and with the ENN editorial team. We invite the Field Exchange readership to share experiences and observations around these articles on the online forum, en-net, where a discussion thread has been set up in the 'Infant and young child feeding interventions' area (eds)

On the 27th of December 2008, Israel launched a three week military operation in the Gaza Strip (referred to as Gaza here on)¹ during which 1,417 Palestinians were killed, including 313 children and 116 women². Over 5,380 people were injured, 1,872 of whom were children. The severe bombing and incursions caused devastating damage. During the military operation, over 15,000 homes were totally or partially destroyed, as well as schools, kindergartens, hospitals and emergency service stations. An estimated 26,000 people lost their homes and a further 75,000 people were left displaced or living in difficult conditions³.

The effects of the crisis were exacerbated by the blockade imposed by Israel since the 2006 elections. Since June 2006 (and prior to this military operation), the context of Gaza was characterised by increasing restrictions on movement of people, means of transport, building materials, medical supplies and equipment and other goods into and out of Gaza. The economic situation had already been on a downward trend since the second intifada⁴ in 2000. Water and sanitation conditions are chronically poor. Prior to the military operation, 80% of the water supplied in Gaza did not meet WHO standards for drinking.

The crisis also presented a unique conflict situation; during the military operation the population of Gaza was not allowed to flee from the military attack zones which covered the whole of the Gaza strip. Furthermore, the crisis does not follow the usual crisis 'relief – early recovery – development' cycle as the ongoing blockade restricts recovery efforts.

Health and nutritional situation pre-crisis

Political instability, economic deterioration, destruction of infrastructure and lack of

resources are factors negatively affecting the health and nutritional status of the Gazan population. The nutrition situation among children prior to the recent hostilities was characterised by rising stunting levels (13.2% in 2006), a high rate of low birth weight (7% in 2006) and 'alert level' micronutrient deficiency rates (iron deficiency anaemia >40% and vitamin A deficiency >20% in certain age groups and a rickets prevalence of 4.1% in 6-36 months olds)⁵.

The blockade has led to severe deterioration from a population with a health status typical of a middle income country to stagnated life expectancy. The infant mortality rate in Gaza is 25.3/1000 for 2004-2005⁶, with little decline since the 1990s. Between 1995 and 2005, Gaza has seen the smallest reduction in mortality in children under 5 years compared with surrounding Arab countries.

Before the current crisis, 74% of people in Gaza were living below the poverty line of US\$3-15 per person per day in 2007⁷. The ongoing blockade on Gaza impacts greatly on access to food and livelihoods for the population, in particular those relying on farming and fishing. Due to poverty and the siege, both the quality and quantity of food intake has been reduced. Over half (56%) of households are food insecure and following the military offensive, 88% of the population were registered to receive food aid from either UNRWA (United Nations Relief and Works Agency for Palestine Refugees in the Near East) or the World Food Programme (WFP).⁸

IYCF concerns in the Gaza humanitarian response

The vital role of optimal infant and young child feeding in the nutrition and survival of children is well recognised, particularly so in emergencies. Protection and support of optimal IYCF was a key concern of Save the

¹ The Gaza Strip is a coastal area of land along the Mediterranean Sea bordered by Egypt and Israel, about 41 km long, and between 6 and 12 km wide, with a total area of 360 square km. It is home to about 1.5 million Palestinians. The area is recognized internationally as part of the occupied Palestinian territories.

² PCHR (2009) Confirmed figures reveal the true extent of the destruction inflicted upon the Gaza Strip, Palestinian Centre for Human Rights, Ramallah

³ Palestinian Authority (2009) The Palestinian national early recovery and reconstruction plan for Gaza 2009-1010, launched by the Palestinian national Authority at the international conference in support of the Palestinian economy for the reconstruction of Gaza in Sharm El-Sheikh, Egypt, 2 March 2009

⁴ Refers to the second Palestinian uprising, a period of intensified Palestinian-Israeli violence, which began in late September 2000

⁵ Rahim, H, Wick, L, Sahar Hassan-Bitar L, Chekir H, Watt, G, Khawaja M (2009) Maternal and child health in the occupied Palestinian territory, Lancet 2009; 373: 967-77

⁶ Save the Children UK, child rights fact sheet, October 2007

⁷ Giacaman R, Khatib R, Shabaneh L, Ramlawi A, Sabri B, Sabatinelli G, Khawaja M, Laurance T, (2009), Health status and health services in the occupied Palestinian territory, Health in the occupied Palestinian territory, Lancet 373:837-49

⁸ UNRWA factsheet

Children in the Gaza emergency response, especially given the prevailing poor feeding practices pre-crisis. While most infants were breastfed (97%), less than 25% of women exclusively breastfed for six months⁹ and early introduction of liquids such as teas, water, herbs, infant formula, and complementary foods was common. Furthermore, anecdotal evidence and reports during and following the 2008 hostilities suggested that large influxes of donated breastmilk substitutes (BMS) to Gaza were exacerbating the situation. The lack of appropriate complementary foods for children 6-24 months was also a cause for concern, as a result of increasing poverty due to the blockade and reduced dietary diversity. While the food needs of the population were mostly met according to WFP and UNRWA (as reported to the Food and Nutrition Cluster on February 3rd), suitable nutrient and energy dense foods for small children were not thought to be widely available.

Assessment

Save the Children and its three existing local partners (Ard El Insan, Palestinian Medical Relief Services and the Union of Health Workers Committee) undertook an assessment to examine current IYCF practices, nutritional status and morbidity, key elements of the overall humanitarian response, and the impact of this response.

Objectives

The main objectives of the assessment were:

- To obtain quantitative data on IYCF practices
- To obtain an understanding of current IYCF practices, beliefs, barriers and challenges
- To determine the prevalence of anaemia in children 0-23.9 months and their mothers
- To determine the prevalence of morbidity (diarrhoea, fever, and cough) in children 0-23.9 months of age.
- To look at the impact of the conflict on infant and young child feeding and the humanitarian response to this.

A secondary objective was to pilot the use 'Infant and Young Child Feeding Practices: A Step-by-Step Guide to Measuring and Using IYCF Data'¹⁰ manual under development at the time by Care USA. Specific considerations in this regard are not reported here but are available from the authors.

Methodology

The assessment collected data on IYCF practices as an independent survey. Systematic random sampling was adopted in 12 communities with a total population of 66,400 (about 4% of the total population). The majority were still classified as refugees since their displacement during the 1948 Arab-Israeli war.

Sampling

The sampling procedure and size were guided by the 'Infant and Young Child Feeding Practices: A Step-by-Step Guide to Measuring and Using IYCF Data' manual. The sample was calculated based on the 0-23.9 month age group, using the software prevalence sample size calculations with finite population correction¹¹. The population of children aged from 0-23.9 months was calculated with information from municipalities and partner non-governmental organisations (NGOs) active in those areas, considering that this age range represents 8% of the population.

Estimates were made on the percentage of mothers practicing each of 10 main IYCF 'behaviours' under assessment. The 10 variables used were based on the WHO 2008 agreed eight core indicators and two additional optional indicators for assessing infant and young child feeding. An estimated 5,312 children in the population were aged 0-23.9 months. Factoring in a 10% dropout/refusal rate, the sample size required was a total of 994 children 0-23 months of age¹².

A group of 377 infants and mothers were sampled for anaemia (using haemacue). Anthropometric data (not presented here) were also collected by Ard El Insan through exhaustive screening of all children under 5 years in 3 neighbourhoods (Al Attara, Al Moqrega and Beit Hanoun), in April and May 2008. This built on routine surveillance.

The data were entered into ENA/SMART for anthropometric data analysis. Infant and young child feeding core indicators were analysed in excel following the IYCF manual. Other analysis was done using Stata® and EPI info.

Survey teams

IYCF data were collected by a team of 12 enumerators divided into six teams. Each team was supervised by Save the Children staff through regular field visits. The same enumerators conducted focus group discussions in the areas for which they were responsible, again with supervision from the Save the Children health team. A total of 15 focus group discussions were held in 12 neighbourhoods with a total of 146 participants. All enumerators participated in four days of training.

Results

A total of 998 questionnaires were completed and 965 children were included in this analysis. Overall, 49% (n=473) of the sample were male and 51% female (n=492). 73.8% of respondents were refugees and 25.8% non-refugees. Haemoglobin levels were taken for 318 children and 337 mothers. This was slightly short of the estimated required sample for mothers due to logistical challenges¹³.

IYCF practices

Nearly two-thirds of children under 2 years (64%) initiated breastfeeding within the recommended one hour of birth. The exclusive breastfeeding rate (2.7%) – using 24 hour recall method – was very low and less than pre-crisis rate of 25% reported in 2007 (see Table 1). Only 40% of infants were breastfed at 1 year of age. One third (35.6%) of infants were bottle fed. By 6 months, nearly half (48%) of infants had already been introduced to solid foods.

During and after the conflict, nearly half (49.3%, n=254) of mothers reported reduced frequency of breastfeeding 5.1% (n=26) of mothers stopped breastfeeding and 2.1% (n=11) of mothers restarted breastfeeding. The remaining mothers (43.6%, n=237) reported no change in breastfeeding practice. The main reasons for stopping or reducing breastfeeding were mothers' perception that their own diet was insufficient (89.6%) and/or that they were unable to produce any or enough milk as a result of breast problems, stress or fear (99%) (see Table 2).

Regarding complementary feeding, half of mothers (50.9%, n=406) reported giving their child less variety of foods during or since the conflict, 15.6% (n=124) of mothers reported feeding children less and 12.2% (n=97) reported increased complementary feeding. The remaining 21.3% (n=170) of mothers reported no change. Nearly three-quarters of children under 2 years surveyed reported meeting the minimum acceptable diet (see Table 1, Indicator 7).

The assessment investigated what commodities related to infant and young child feeding mothers had received as part of the humanitarian response. Over one quarter of mothers (27.6%, n=265) received infant formula during or immediately after the conflict, including mothers who were breastfeeding. Nearly half of mothers (47.6%, n=453) received other breast milk substitutes and 5.3% (n=50) of mothers received baby bottles.

⁹ Data for Palestine Central Bureau for Statistics (PCBS), 2007

¹⁰ Infant and young child feeding practices. Collecting and Using Data: A Step-by-Step Guide. Care USA, Jan 2010.

¹¹ <http://sampsiz.sourceforge.net/iface/index.html#prev>

¹² The indicator that drove sample size was exclusive breastfeeding. The sample therefore required 226 children 0-5 months of age, 226 children 6-11 months of age, 226 children 12-17 months of age and 226 children 18-23 months of age.

¹³ Based on 58% prevalence in this population size, a sample size of 370 would be required to achieve 95% confidence for mothers. A sample of 287 is required to gain 95% confidence for this level of anaemia amongst children meaning the sample size was sufficient.

¹⁴ Because calculation of this indicator according to the international guidelines produced misleading results in light of the extreme prevalence of anaemia, the estimation has been omitted

Table 1: Results for standard indicators measured on IYCF practices

Indicators	Total number	Sample size	Percent (CI)
1 Timely initiation of breastfeeding (within 1 hour)	619	965	64.1% (CI 95% 61.0-67.2)
2 Exclusive breastfeeding	7	268	2.7% (CI 95% 0.07-0.45)
3 Introduction of solid, semi-solid or soft foods	99	119	83.1% (CI 95% 70.7-88.3)
4 Continued breastfeeding at one year	50	95	40.3% (CI 95% 31.5-49.1)
5 Minimum dietary diversity	542	697	77.7% (CI 95% 74.7-80.9)
6 Minimum meal frequency	567	697	81.3% (CI 95% 78.4-84.2)
7 Minimum acceptable diet	515	697	73.8% (CI 95% 70.6-77.2)
8 Consumption of iron-rich or iron-fortified foods	697	697	N/A ¹⁴
9 Children ever breastfed	944	965	97.8%
10 Bottle feeding	344	965	35.6% (CI 95% 35.6-38.7)

Table 2: Reasons given by mothers for stopping or reducing breastfeeding

Response	% (n)
Own diet was insufficient	89.6% (251)
Too busy to breastfeed	8.2% (23)
Unable to produce any or enough milk as a result of breast problems, stress or fear	99.0% (276)
There was availability of breastmilk substitutes	3.2% (9)
No suitable place to breastfeed	5.7% (16)
Other (e.g. due to pregnancy)	4.6% (13)

Note: Mothers could give more than one response

Morbidity

The incidence of diarrhoea was high amongst the children surveyed; 45.7% reported diarrhoea in the previous two weeks. According to UNRWA data, the time of data collection has a higher diarrhoea incidence than other seasons. After correcting for seasonal variation, this percentage drops to 38.2%. In terms of other morbidity, fever (39.5% n=381) and cough (24.6% n=237) were amongst the most common.

The prevalence of anaemia was 36.8% (n=124) in women and 73% (95%CI 68.1-77.8) in children under 2 years (n=232).

There was no significant correlation between bottle use, receipt of infant formula or diarrhoea in the children 0-23.9 months ($p=0.179$).

Antenatal care

While all women surveyed had access to antenatal care, there were very low levels of postnatal follow up (6.7% follow up within 3 days of delivery), which is consistent with prevalent practices. Discharge within two hours of delivery is common among maternity services (much less than the WHO recommended 12 hours). Low birth weight rate (<2500g) was 8.7%.

The humanitarian response on IFE

The humanitarian community has a responsibility to protect, promote and support IYCF in emergencies. This is reflected in Sphere Standard indicators and detailed in the provisions of the Operational Guidance on IFE, that includes early needs assessment, basic interventions (targeted shelter, water, food, security), avoidance and management of donations of BMS, bottles and teats, controlled use of BMS when indicated as a last resort, and skilled IYCF counselling and support, that includes breastfeeding and complementary feeding.

In the Gaza situation, poor and risky IYCF practices were common pre-conflict. It is hard to say whether the conflict situation had an impact on feeding practices, given the deteriorating situation that already existed through the blockade. The assessment suggests that these practices probably deteriorated since the blockade, with very low exclusive breastfeeding rates and over half of mothers reporting stopping or reducing breastfeeding. Mothers did not report BMS availability as a reason for breastfeeding decline, this may reflect that such products were in common use pre-crisis. Rather, the reasons given were 'breast problems', lack of food, stress and fear. The decline in breastfeeding practices may therefore partly reflect failure of the humanitarian effort to intervene in other ways – such as basic food provision to mothers and skilled support to address stress in breastfeeding mothers, and warranted in these circumstances.

As stated, appropriate management of breast milk substitutes in emergencies is part of the protection and support of infant and young child feeding in an emergency¹⁵. In Gaza, the distribution of BMS was the dominant IYCF intervention. Provision was often in general distributions, not based on needs assessment and not accompanied by additional supports or monitoring. The uncontrolled distribution of breastmilk substitutes, especially where breastfeeding mothers are included in the target group, in all likelihood reinforced prevailing poor feeding practices. Distribution of breastmilk substitutes without additional support that addresses water source, fuel, preparation and child monitoring, exposes both breastfed

and non-breastfed infants to increased risks, especially given the prevailing poor water and sanitation condition in Gaza. While the incidence of diarrhoea was high in young children, no specific reasons were identified.

The concerns that complementary feeding needs were not being met during the emergency response were not substantiated in the assessment. Although mothers reported giving less food variety to their children, surveyed children did meet minimum food standards. Household food was provided by many agencies and though not specifically targeted at complementary food needs, appears to have been adequate for such a purpose. Despite widespread coverage of iron supplementation, non compliance with iron syrup was common and levels of both maternal and child anaemia were very high.

There was a general lack of knowledge amongst local partners and some international NGOs of the provisions of key policy guidance on IFE. This contributed to the uncontrolled distribution of breastmilk substitutes during and immediately after the December 08/January 09 military operation, and a lack of appropriate response in handling them. Though IYCF was identified as an issue during the emergency, the absence of expertise or commitment to follow through on this resulted in it not being pursued as a priority. Lack of policy guidance awareness most likely contributed to a failure to deliver a more comprehensive and informed package of protection and support on IFE. Even when IYCF issues were identified during the emergency these were not prioritised.



A mobile clinic run by Palestinian Medical relief Services supported by Save the Children

A key challenge in the emergency response was how to practically implement the provisions of policy guidance and standards in a population in which infant formula is widely used and certain feeding practices well established.

A number of actions were identified by Save the Children that could be taken to improve the coordination and nature of the emergency response to the situation in Gaza:

- Clarify leadership on infant and young child feeding in the current and ongoing response and terms of reference for this role. This role should include advocating and supporting implementation of all the provisions of the Operational Guidance on IFE by humanitarian actors, monitoring and reporting of any violations of the Code, and dealing with untargeted distribution of breast milk substitutes.
- Collaborative development of an emergency preparedness and response plan across sectors and between local, national and international partners. These should look to integrate the provisions of the International Code of the Marketing of Breast Milk Substitutes and the Operational Guidance on IFE.
- Cross-sectoral collaboration on IFE, involving health/nutrition cluster to lead on IFE as lead sectors, and with water, sanitation and hygiene (WASH), shelter and logistics participation.

Specific actions to address concerns highlighted in the assessment include:

- Prioritisation of a more detailed assessment into the causes of childhood diarrhoea, combined with effective prevention and treatment. This could build upon on-going WASH cluster studies at household level.
- Pilots of new approaches to prevent and treat anaemia at both facility and community level are needed. One option is use of multiple micronutrient powders for home fortification as part of comprehensive complementary feeding interventions. Special attention should be paid to the 6-24 month old group who are not targeted by many nutrition based interventions in Gaza. Given the chronic nutrition problems in Gaza, iron status is not the only concern and more in-depth micronutrient assessment should be considered to investigate further other micronutrient deficiencies in Gaza.
- Donor advocacy for longer term programming that allows root causes and behaviours associated with poor IYCF practices to be addressed. Newborn and child survival is a priority focus,

Continued short term funding in the Gaza Strip is not conducive to the required behaviour change, planning and resource inputs needed at all levels. Critically, participatory development of a comprehensive IYCF policy and strategy that considers the implementation of international policy guidance on IFE in the context of Gaza and involving local, national and international partners is needed. Appointment of a national coordinator with appropriate authority would greatly facilitate leading multi-sectoral stakeholders to develop and deliver such a strategy.

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¹⁵ Save the Children UK (2008). Fast tracking improvements to infant feeding in emergencies.



NECCCRW staff with the mobile kit used on household visits for nutritional screening and anaemia assessment

Experiences in addressing malnutrition and anaemia in Gaza

By Dr Bassam Abu Hamad and Erik Johnson



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Special acknowledgements are extended to the Near East Council of Churches for their commitment, dedication and sincere efforts to help the Palestinian people, especially women and children. The Management Board of the organization and its Executive Manager played a vital leadership role in making the life of many Palestinians much better. Special thanks to Mr Constantine S. Dabbagh, the Executive Secretary/manager of the NECCCRW, Dr. Salim Al Abadlah, the Medical Coordinator of the NECCCRW and to the project teams and the administrative support teams for their great efforts and sincere commitment. Finally thanks to the support of DanChurch Aid, especially Mads Schack Lindegaard, Regional Representative DCA Palestine, and the support of the Danish people through DANIDA.

Household food security in the Gaza Strip has deteriorated significantly since the inception of the Israeli blockade in June 2007, with extremely severe restrictions on the entry of goods and the virtual halt of movements of Gazan people in and out of the territory¹. Acute malnutrition rates amongst children under 5 years are low, but the rate of chronic malnutrition has risen over the past few years, reaching 14 percent stunting of the population in the area of Shajia, Eastern Gaza.²

The Near East Council of Churches Committee for Refugee Work (NECCCRW)/DSPR (Department of Service to Palestine Refugees) has been successfully providing maternal and child health care to populations in the Gaza Strip for the last 42 years. A key component of service delivery in NECCCRW's clinics includes a 'well baby' programme, which has long included the screening and referral of moderately and acutely malnourished children. In the past, moderately malnourished children were treated through a combination of nutritional counselling, micronutrient supplements, and intense follow up, with satisfactory results. Rarely identified cases of severely malnourished children were referred for in-patient care.

Following the commencement of the economic blockade of Gaza, NECCCRW staff witnessed two changes; an increase in moderate child malnutrition, and the inability of its prevailing treatment protocol to address the moderate malnutrition in the face of lack of household food availability. In the project area, 80% of households live under the poverty line (2 USD per person per day), with a full 70% living under the absolute poverty line of 1 USD per person per day. The staff of NECCCRW and its partner organisation, DanChurchAid, have also witnessed a direct impact of the deteriorating food security on the time required for malnourished patients to revert to normal weight for height curves. Recovery was taking an unacceptably long 12 to 14 months.

Throughout the Gaza Strip, stunting rates due to chronic malnutrition have been increasing. Data show that chronic malnutrition increased from 8.3% in 2000 to 13.2% in 2006³. It can be speculated that given the current state of food security in Gaza, stunting has risen further since the inception of the blockade. In NECCCRW's operational area, the prevalence of stunting is 14%. In December 2008, the effects of the ongoing crisis were exacerbated by the Israeli launch of a three week military operation in Gaza (Operation Cast Lead).

Given the chronic deterioration in childhood nutrition, a project was designed by NECCCRW to adjust the existing treatment to the worsening environment. This article describes a programme to respond specifically to acute malnutrition and anaemia amongst children under five years in the eastern area of the Gaza Strip. The programme coincided with but was not a direct response to the 2008/09 conflict.

The authors consider the programme unique in its approach of comprehensive household screening and referral, integrated health care management for children under five, and sophisticated management of patient data. The methodology developed by this programme may be relevant for other agencies implementing nutrition programmes in urban

environments during protracted complex political emergencies. It may have particular relevance for agencies implementing nutrition and feeding programmes in the Gaza Strip, where household food insecurity is expected to continue to deteriorate.⁴

Project overview

The project was implemented in Shijaia area, which is served by the Shijaia clinic located in the east of Gaza City. The area contains around 80,000 inhabitants and is regarded as vulnerable. The project started on April 1st 2008 and was planned for one year initially. Project activities were suspended during the war on Gaza, when the clinic was demolished. Activities resumed after approx 2 months and were continued until 31 July 2009. The care of outstanding enrolled cases was integrated into the regular operations of the Shijaia clinic.

The project aim was to improve the health and nutrition status of targeted mothers and children under 5 years in the project area during the programming period. Target indicators for the intervention included ensuring that at least 95 percent of children identified as malnourished receive supplementary feeding (or are referred to other agencies in the case of those with severe malnutrition), and decreasing the percentage of malnourished children presenting to the health centre is by 30% from a baseline of 10.6 % in children under 5 years.⁵

The project operated in one of NECCCRW's four clinics. The NECCCRW staff continued to identify malnourished children in the clinic's 'well baby' programme as per the prevailing methodology of nutritional counselling, micronutrient supplementation and follow-up. This new programme had three significant new features:

- Household screening and diagnosis/referral
- Supplementary feeding through the supply of infant formula to malnourished children
- Development of a new database to enhance the management of patient data and follow up

A flow chart of the workplan to manage malnutrition is shown in Figure 1.

Key programme features

Comprehensive household screening and diagnosis

This element of the programme aimed to increase coverage and participation in the 'well baby' programme. However, the staff feared that inviting all mothers of children under 5 years to a series of community 'weigh-ins' might not succeed in engaging the most marginalised families. Therefore they planned to visit every one of the 13,799 households in their catchment area, with a total population of 82,464 residents.⁶ Six community workers visited the houses in pairs (each team composed of two workers). Each team visited around 20 houses every day. Coverage proved high, since not a single household was missed.

The household visits had additional benefits. These visits afforded an opportunity for the clinic staff to engage in one-on-one dialogue with the mothers about their children's nutri-

¹ NECC final project report, July 2009

² As footnote 1.

³ UN Food and Agriculture organization and World Food Programme. Food Security and Vulnerability Analysis Report, occupied Palestinian territory, December 2009

⁴ As footnote 3.

⁵ DanChurchAid. NECC/DCA application to Danida, 2008

Figure 1: Flow chart of project workplan to manage malnutrition

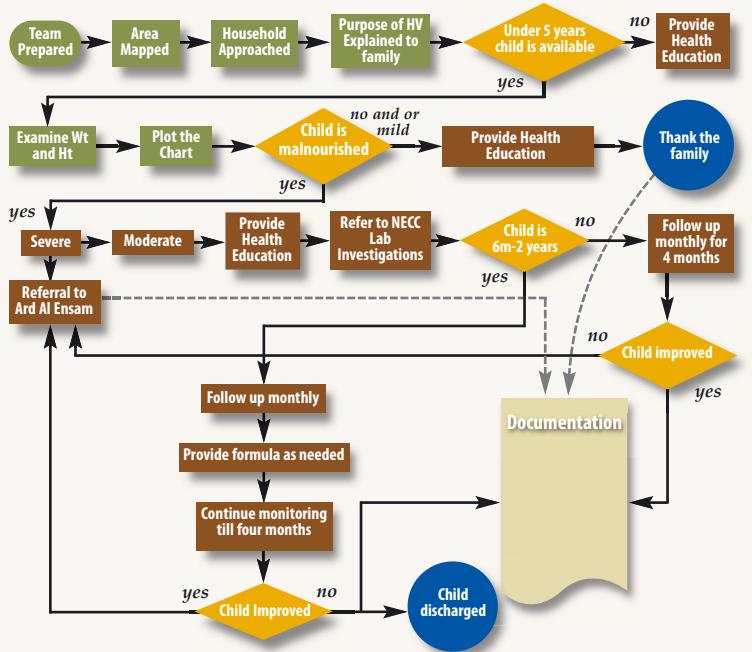


Table 2: Time for recovery (days) for malnourished cases for the entire project period (1 April 2008 – 31 July 2009) and for the post conflict (1 March – 31 July 2009 period only)

Variable	Mean (days)		Median (days)		SD (days)	
	Project period	After the war	Project period	After the war	Project period	After the war
Wasting	83	45	55	35	79	35
Underweight	79	41	55	40	70	26
Stunting	102	61	68	61	93	34

for two periods: the project period which covers the entire project life including the suspension period (2-3 months) and the period after the war starting from March 1st (when there was no service disruption). The suspended service increased the average length of stay recorded and the median time for recovery. The 'post war' period therefore gives a better indication of recovery time.

Breastfeeding status was not assessed in children enrolled in the supplementary feeding programme. Information on breastfeeding status was available at from the NECCCRW's clinic-based database found that the prevalence of exclusive breastfeeding at Shijaiia clinic amongst children aged under 6 months was 45%, more than double the prevalence at the national level. Among children less than 2 years old, 55% were breastfed in combination with other foods. At UNRWA clinics, the NECCCRW supervising Public Health Specialist supervised a study on weaning practice in the summer of 2009 which showed that the median cut-off for breastfeeding in all of the Gaza Strip was 14 months.¹⁰

Anaemia and micronutrient deficiencies

Anaemia is highly prevalent amongst under 5 year olds across the region. In a study conducted in 2006, 57% of children aged 6 – 36 months of aged were found to be anaemic¹³, well above the 40% threshold considered as a severe public health situation according to WHO standards¹⁴. Of the 14,796 children screened by the NECCCRW programme, 5,795 (43.3%) were identified as anaemic, 56.5% suffered from mild anaemia, with the remainder suffering from moderate anaemia.

Anaemia in Gaza is generally attributed to the lack of iron sources in the diet and exacerbated by the high presence of nitrate in the

groundwater, which can lead to methemoglobinemia¹⁵. Following Operation Cast Lead in 2008 – 2009, the ability to treat sewage and prevent seepage of nitrates into the ground water has significantly deteriorated. This has led to speculation that a higher level of nitrates in the groundwater has resulted in some areas.

Figure 2 outlines the project work plan to treat anaemia. Anaemia is treated according to the Palestinian protocol through providing iron supplementation of 6 mg per kg body weight for three months followed by prophylactic dose (3 mg per kg body weight) for additional three months after the haemoglobin reaches 11 mg/kg body weight. Children with anaemia are examined for the existence of other conditions, such as infections and bleeding, and treated accordingly. During iron supplementation, haemoglobin levels are assessed at least twice to monitor the progress. For non-responsive cases, multivitamins are provided, including vitamin A and D. Due to lack of its availability in Gaza and its high cost, Vitamin A is not given routinely.

Around 70% of anaemic children recovered and returned to normal within 2 months of starting treatment. These figures climbed to 80% after 3 to 4 months in the programme. Those children who had not recovered after 3-4 months continued under treatment after the end of the project. Currently, most of these children have now recovered.

Nutritional, health, and hygiene counselling
A key feature behind the success of the programme has been the degree of follow up with patients and the close engagement with them by NECCCRW staff in their child's health and growth progress. The programme started with introductory meetings with community leaders and community members to gain their commitment, ownership, and support.

Health education was provided during home visits to every caregiver, followed by targeted focused sessions to caregivers of anaemic and malnourished children. Health education sessions were also provided to community based organizations while individual counselling sessions were provided for specific cases - mostly for non responsive cases. The key messages of the counselling were healthy nutrition, hygiene and sanitation, as well as breastfeeding, feeding practices, and how to ensure an iron-rich diet.

In addition, two health awareness brochures were developed for mothers, one on anaemia and one on malnutrition and 15,000 copies were printed and distributed via home visits.

Database for managing patient data

The project developed a database to capture the following information:

- Demographic data
- Socioeconomic data
- Anthropometric data, which are automatically converted to z scores
- Haemoglobin levels
- Data pertaining to confounders, such as enrolment in other programmes
- Computerized automated appointment system
- Health education related data
- Type of medication and treatment modalities
- Built in quality control measures for outlier values

The newly developed data based served many functions, including automatically generating charts to show the progress of cases according to z score. The system also automatically generated appointments, organized the work through 'smart enquiries,' and provided reminders for health providers about the measures to be taken according to the treatment protocol. Other facilities included automatically generating patients' prescriptions, organizing patient flow, showing workload, planning and staffing level needs, requesting medications and supplies, follow up of field work and showing overall impacts in a timely manner. No forms or paper work are used at all – data is inputted directly by staff.

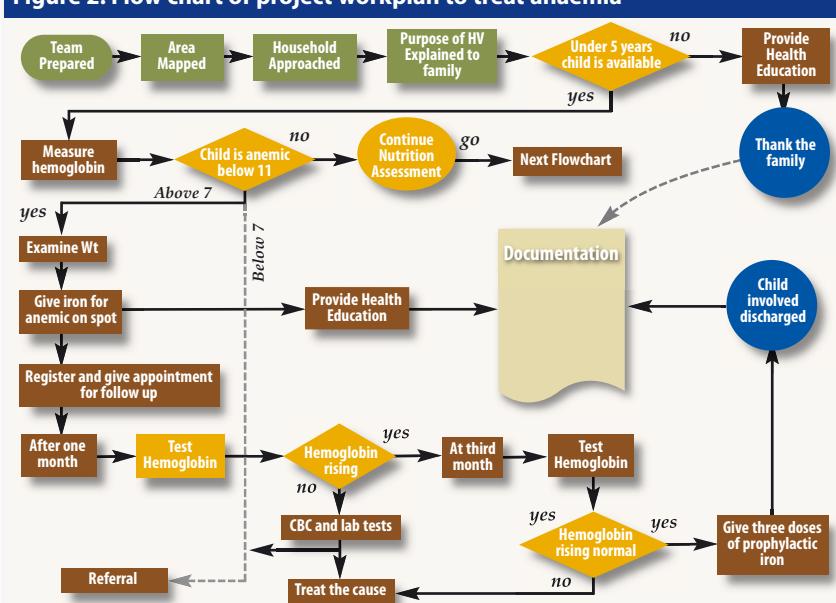
The database also shows the measures taken to follow up defaulters. Every day, staff are provided with the names, addresses, and contact information of those who didn't present for follow up. The results of efforts to address defaulters are presented, as well as reasons for their non attendance. Outcomes of measures to get defaulters to return to the programme are presented and response comparisons are made between those who remain in the programme and those that default.

¹³ DanChurchAid. Emergency Humanitarian Nutrition and Health Response for Vulnerable Children in Shijaiia Area – Gaza Strip. 2009

¹⁴ UN Food and Agriculture organization and World Food Programme, Food Security and Vulnerability Analysis Report, occupied Palestinian territory. December 2009

¹⁵ This is a blood disorder caused by abnormally high level of methemoglobin, a form of haemoglobin that does not bind to oxygen.

Figure 2: Flow chart of project workplan to treat anaemia



Measuring length at the clinic





NECCCRW, Gaza Strip, 2009

Measuring weight at the clinic

Presentation of household screening data

Of the 82,464 persons in the catchment area, 14,976 were children under 5 years (18.2%). Through household screening, 1,307 children (8.7%) were identified as malnourished (wasting/underweight/stunted¹⁶). Underweight accounted for 2.3% and wasting for 1.1% (n=159) of children under five years. The prevalence of stunting in the under five population was 7.7% (n=1160). A total of 263 children (1.7%) were identified as severely wasted/underweight/stunted.

These malnourished children were more likely from large families, not refugees, and from economically disadvantaged families. (Refugees typically receive food distribution from UNRWA, the UN Relief and Works Agency). Other studies have found that stunting is closely associated with low levels of maternal education with the highest stunting rates found amongst families where the mother has had no education¹⁷.

More than 80% of children who were underweight or wasted improved and/or returned to their target weight after 3 to 4 months since their enrolment in the programme. This is a dramatic improvement over earlier performances. Thirty three percent of stunted children recovered from this acute episode and/or improved after 3 to 4 months of enrolment in the programme, a figure which climbed to 40 percent with more time spent in the programme.

The recent escalation of conflict in Gaza led to interruption of treatment plans and to increased numbers of defaulters. There were clear variations in defaulting patterns across the different areas. More defaulters were reported among children from areas far away from the NECCCRW clinics. No gender related variations were noticed among defaulters. Defaulters identified towards the end of the project period, when follow-up was no longer possible, constituted a higher proportion than those identified early in the programme and from more accessible areas. Reasons for not coming are explained below.

Challenges, areas for improvement and next steps

- Operation Cast Lead: Destruction of the Maternal – Child Health Clinic by Israeli Missiles**

The major challenge during the last programme period was the total destruction of the NECCCRW clinic by Israeli missiles. The clinic was targeted by the Israeli air force which fired missiles during a night time operation.

Field Article

Therefore none of the clinic staff were present. However, the event led to complete disruption of programme activities, loss of valuable equipment, and contributed to the psychological trauma already experienced by clinic staff and patients as a result of the war. This resulted in a cessation of treatment for 2 months, and the loss of some important baseline public health data regarding levels of diarrhoea, parasitic infections, and skin diseases. Some key target indicators for the project could not be calculated due to loss of records. A new clinic building was subsequently identified and renovated following the war, and activities resumed.

- Analysis of defaulters**

Approximately 70% of defaulters were re-enrolled in the programme following telephone contact or home visits by project staffs. Only 4% of children who defaulted did not return. The most frequently reported reasons for not coming included forgetting the appointments, family issues, geographical distance of the clinic, sickness of the mother, follow up with other health care providers, waiting time, crowdedness of the clinic, and children's distaste for the iron supplements. Furthermore, as it takes time to recover from chronic malnutrition some families felt discouraged and so discontinued treatment. Also, as stunting affects the poorest and marginalized sections of the population who usually live relatively far away from the clinic, accessibility and transportation were noted as significant issues.

- A psychosocial component to malnutrition**

Malnutrition has acknowledged and well documented psychological dimensions, and in Gaza, the effects of the recent war on the mental health of young children and their families were particularly significant. Whilst the primary cause of malnutrition amongst Gazan children is still believed to be household food insecurity, the next phase of the programme will look at the psychosocial status of the children together with DCA partner, Youth Education Centre (YEC).

- Coordination, including better linkage with therapeutic feeding programmes**

Provision of health care in the occupied Palestinian territories is extremely fragmented, with a number of different agencies providing a patchwork of services that covers the territory. Through its activities, NECCCRW was able to positively identify families entitled to assistance from the Ministry of Social Affairs based on socio-economic criteria. This assistance may help to prevent future cases of malnutrition.

NECCCRW spends significant energy in coordinating with other actors, including the Ministry of Health and Health Cluster in Gaza. They found that the national protocol for treating malnutrition is generally effective, and that proper implementation of the protocol can lead to positive outcomes.

Severely malnourished children identified through the NECCCRW programme screening are in this case referred to Ard El Ensan specialised nutrition centre, which provides in patient care. Whilst the collaboration with Ard El Ensan has been excellent, the fact that there are two different organisations – with two different sets of data management protocols, teams, and follow-up methodologies – has proved a challenge with respect to ensuring

that patients discharged from in patient care continue to maintain their normal weight/height growth curve, and do not relapse.

- Increasing the geographic coverage to all of NECCCRW's clinics**

Currently, the project only operates in one of NECCCRW's three clinics. The next project phase aims to extend the geographical coverage of the programme to all three of NECCCRW's clinics in Gaza.

- Collaboration with the Emergency Nutrition Network (ENN) to ensure that the database includes relevant elements of the SFP Minimum Reporting Package**

The project has followed the developments with respect to improving reporting on emergency SFP programmes¹⁸ and the subsequent efforts by ENN and others to develop a minimum reporting package. ENN and NECCCRW staff will be collaborating later this year to determine if there are elements of the newly developed MRP that have not yet been captured by the NECCCRW database.

Conclusions

The three key features which led to the positive outcomes of this programme – household screening and diagnosis, a comprehensive treatment approach including preventive child health care, and a computerised database to reduce paperwork and enable staff to proactively respond to changes in the patient's condition - are likely to be most relevant to programmes operating in complex political emergencies in urban or peri-urban environments.

Neither the prospects for household food security or the political and security outlook are promising in the Gaza Strip. The severity of the already dismal situation is masked by the fact that 71% of households already receive regular humanitarian assistance, mostly with food¹⁹. If the economic barricade of the Gaza Strip continues, or further deteriorates due to another war, further restrictions on the lifeline of humanitarian food assistance to Gazan households are likely to result in more severe deteriorations of household food security, and concomitant increases in child malnutrition.

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¹⁶ Weight-for-height <-2 z score; weight-for-age <-2 z score; height-for-age<-2 z score, respectively.

¹⁷ Palestinian National Authority, Palestinian Central Bureau of Statistics, December 2007 – Palestinian Health Survey, 2006 Final Report.

¹⁸ Navarro-Carollo, C., Mason, F., Shoham, J. Measuring the Effectiveness of Supplementary Feeding Programmes, Network Paper 63, Overseas Development Institute, September 2008

¹⁹ UN Food and Agriculture Organisation and World Food Programme. Food Security and Vulnerability Analysis Report, occupied Palestinian territory, December 2009



NECCCRW, Gaza Strip, 2009

Learning about keyhole gardens

Africa Forum 2009

An experience in adult learning

This article describes how the principles of adult learning were used to deliver a highly participative and experiential conference, to better prepare each participant to tackle the challenges of HIV, food insecurity and malnutrition in their own context.

Africa Forum 2009 (AF09) brought together humanitarian and development practitioners to present and discuss 'Sharing Integrated Solutions to HIV and Food and Nutrition Insecurity'. This was, however, by no means an ordinary conference. AF09 can be more truly described as a learning experience, which actively engaged each participant's own, self-defined learning processes. The ultimate goal was to improve participants' ability to design and implement integrated HIV, food security and nutrition (FNS) programmes for those infected and affected by HIV and AIDS.

Africa Forum 2009 was organised by Project Concern International (PCI), in collaboration with a host of non-governmental organisation (NGO) and private sector partners (see list at end of article), and was held June 21 to 26, 2009 on the shores of Lake Malawi. Previously, approximately 170 Africans from 18 sub-Saharan African countries travelled to Malawi to advance the goals of the first Africa Forum in 2006¹ which had taken place in Zambia. Like its predecessor, AF09 aimed to achieve what many conferences fail to even identify as a goal. As a practitioner-led conference, it sought to generate 'shared learning' from within the vast portfolio of expertise and experience of the participants themselves. Applying this unique style of participant-led, interactive learning meant that its participants gained practical, applied skills and knowledge, used and practiced at AF09. This meant they could then apply them to their own HIV and FNS interventions upon return to their countries. Here are some of the ways that this was achieved.

Box 1: Johnson Barongo's story

Johnson Barongo is a 17 year-old man from Tanzania who lost both his mother and father to AIDS. Johnson learned early on that he had contracted the virus from his mother and at first he had difficulty accepting the news. His stepmother gave him love and encouragement and helped him become well-informed and empowered about how to live positively. Today, Johnson is healthy, happy and has a lot of friends who know his HIV status.



By Kara Greenblott



Kara Greenblott lived and worked in Africa and Southeast Asia for 11 years managing a diverse range of humanitarian programmes. She has a Masters degree in Economic and Political Development, and certificates in public health and livelihoods. Since returning to the U.S. four years ago, she has been co-owner and consultant for Nzinga International, a consulting firm working in the areas of HIV, food and nutrition security, livelihoods, orphans and vulnerable children and social protection.

Gwenelyn O'Donnell was responsible for supervising and editing the drafting of this article. She is the Director of Project Concern International (PCI)'s Washington DC office and Technical Officer for Food & Nutrition Security. Gwenelyn has more than ten years of experience working in development in the areas of HIV, food security, nutrition, livelihoods, maternal & child health and child survival. She holds Masters degrees in Public Health and International Economics/Latin American Studies.

emotionally-charged talk by a HIV-positive individual who shared their own experience, strength and hope. Hearing their personal stories served as a daily reminder of the personal nature of our work as practitioners, and kept participants grounded in the realities of living with HIV and AIDS. These 'morning motivational' also set the tone for each day's work. They reminded participants that a key priority agreed at the previous AF06 was to ensure that decision-making about integrated HIV and FNS programming be guided by the voices of those most affected. "Nothing About Us Without Us", the buzz words of the South African movement of people living with HIV (PLHIV), became the rallying cry for AF06. Interestingly, AF09 participants cited these personal testimonies as among their most powerful experiences at the conference (See Box 1 for one example).

Music sends a message

Music has been referred to as 'storytelling to a tune'. Like telling a story, the use of popular music to educate and advocate for change has long been part of African culture. AF09 celebrated this tradition by hosting a 'musical keynote' to open the event with the awe-inspiring talent of Zimbabwean musician Oliver Mutukudzi. Known as 'Tuku' to his fans, his songs courageously tackle a variety of HIV-related themes, including rape, death, and being faithful to your partner. Recording since the mid-1970's, Tuku is a legend by virtue of his longevity (he is still performing at 57 when most of his contemporaries have died of AIDS), but also because he is a prolific singer/songwriter (more than 40 albums), a gifted guitarist and to date, best selling artist of all time in Zimbabwe (See Box 2).

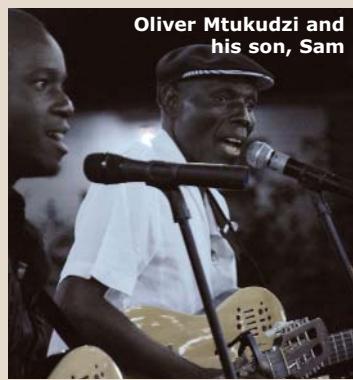
¹ The theme for AF06 was 'An Integrated Response to the Dual Epidemics of HIV/AIDS and Food Insecurity'

² Codifiable knowledge is easily transferable information.

³ Tacit knowledge (as opposed to formal or explicit knowledge) is knowledge that is difficult to transfer to another person by means of writing it down or verbalizing it.

Box 2: Lyrics from 'MABASA' by Tuku

Oliver Mutukudzi's 'MABASA' is a highly inspired song mourning the devastating effects of AIDS. Without directly referring to the disease, the song has enough imagery to paint the bleak picture: "Tears run dry. We mourn quietly. Death has now lost meaning (because of its frequency). Funerals no longer have the necessary dignity. Everyone around us is dying. Who will sympathize with whom since each one of us has death in their homesteads daily? Who will mourn whom? Who will bury whom? Who will feed whom since the breadwinners are all dying?"



Project Concern International, Malawi, 2009



Evaluation

The permaculture expert and her team coached the venue staff on cultivating and maintaining the garden, and if they chose, showed them how to replicate it at home. This initiative, entitled 'We Are What We Eat', began several months prior to the conference, and provided micronutrient dense food choices such as herbal teas, fruits, vegetables, spices, legumes, nuts, herbs, dairy and other such foods listed in the guide, 'Food for People Living with HIV'⁴. The staff were also taught food preparation methods that conserve nutrients such as steaming, preparing raw food, baking, and avoiding over-cooked (e.g. excessive boiling) and fried foods.

As is standard with permaculture gardens, all types of fertilizers and chemicals to treat plants were avoided, and natural insect repellents (e.g.'Tithonia'⁵) were used. Seeds and seedlings were planted in pumpkin shells to help nurture them, using biodegradable toilet paper rollers for support rather than polythene or other types of tubes. Soil in a permaculture garden does not require tilling, and can be 'prepared' for seeds with compost made from local manure.

Members from the community nearby the venue came out to observe the set-up of the garden. Many initially laughed at the permaculture gardeners, (joking that the compost heaps looked like "earth tomb stones"), but later the same individuals admired and inquired about the vegetables and fruits produced in the garden. The garden was also featured as one of the conference 'site visits' so that all participants had the opportunity for a tour, and to see where their meals were coming from.

Touch and taste

Adult learners absorb new information more readily when they experience that information with multiple senses. In keeping with the spirit of demonstration and hands-on learning, a 'Taste and Touch' session was also organised to introduce local dishes and nutritious foods for PLHIV from various African countries. The session featured recipes from eight different African countries (i.e. Ethiopia, Ghana, Kenya, Malawi, Rwanda, South Africa, Zambia, and Zimbabwe), and ranged from natural teas and biscuits, to easy to ingest soya-sorghum rich meals. Facilitators shared the recipes and preparation methods during the session, and participants received a recipe booklet⁶ containing all of the recipes from that session, as well as select tea breaks and lunches specifically prepared for AF09 participants throughout the week.

Skill-building sessions

For adults, learning is an active and voluntary process. Involvement in topic selection and the opportunity to practice what is learned are crucial to assimilating, testing, accepting and internalizing new knowledge and/or skills. These ideas were put into practice in the form of skills-building workshops on HIV and FNS programming.

Fifteen skills-building workshops, lasting approximately three hours each, took place over the course of the five-day conference. They were interactive, 'hands on' and practical, with topics ranging from constructing a key-hole garden, and designing monitoring and evaluation (M&E) activities for food and nutrition activities to growing, preparing and processing healthy and nutritious foods for PLHIV.

The criteria for offering a session were straightforward:

- It must be relevant to the overall purpose / subject of AF09 and the needs of its participants.

- It must have a hands-on, operational focus / design (vs. theoretical).
- It should include opportunities for actual skills building (i.e. for practicing the new skill).
- The knowledge and skills presented must be replicable (i.e. participants should be able to take it home, adapt it and use it in their own setting).
- It must be logically feasible and clearly organised.
- It must be completed in the time allotted (i.e. a maximum three hours).

To the extent possible, skills-building sessions took place in communities neighbouring the venue, and involved the members of those communities. This meant that initiatives would be more likely to be sustained beyond the life of the conference. The keyhole and multi-level sack gardens, for example, were developed at a local school, while the fuel-saving stove was constructed (and demonstrated) at a community centre.

Debates on controversial themes

Drama and humour have ways of helping us to personally relate and to remember new ideas and concepts especially where these generate a strong emotional response.

With this in mind, three debates were organized on current controversies around HIV and FNS programming in the global community. The debates were structured like a boxing match, with the adversaries moderated by a talented, though provocative, referee, and with the goal of challenging the assumptions (and conclusions) of participants.

The first debate pitted the generally accepted use of ready-to-use therapeutic foods (RUTFs) (which has increased dramatically in the context of AIDS-related, severe and moderate acute malnutrition), against the longer-term solution of promoting durable, self-sustaining solutions through a greater focus on urban and rural homestead gardening for healthier diets. The second debate focused on the tension between cash and voucher-based safety nets, and traditional food assistance delivery. And the third challenged the appropriateness and feasibility of social protection in resource-constrained, developing countries.

The debaters took extreme positions and provoked one another to defend their stance. The passionate positioning – both tactical and strategic – of the debaters engaged the audience, who voted for the winning debater with voluminous cheering and laughter. Though all debaters were 'acting' the part, they noted that in the days that followed their debates, conference participants repeatedly approached them to re-engage them in the debate, and to try to convince them of the opposing argument.

Panel discussions

Panel discussions were a key feature at AF09. There were six throughout the week, and they were designed to help the audience explore key issues in HIV and FNS programming across a variety of programmes, models and countries. Having various perspectives represented in a

⁴ Food for people living with HIV. Network of African People Living with HIV (NAP+). Luanne Epstein 1995. Published by Hope Productions, Cape Town. Developed originally with a grant from UNDP for a Regional project on HIV and Development, Dakar Senegal. Reproduced by JSI-STAFH Project (Support to AIDS and Family Health) for NAPHAM, The National Association for people living with HIV in Malawi, Lilongwe 1997

⁵ An orange flower also known as tree marigold, Mexican tournesol, Mexican sunflower or Nitobe chrysanthemum (*Tithonia diversifolia*)

⁶ The recipe booklet can be downloaded at <http://www.projectconcern.org/site/DocServer?docID=1941>

panel format, the moderator's job was to tease out cross-cutting challenges, lessons learned and recommendations for improved programming. The style was informal – a 'talk-show' format – and audience participation, in the form of comments and questions for the panelists, was a crucial aspect of the exercise. Like the debates of the morning plenaries, provocative/challenging contributions were encouraged, and discussions between panelists (and audience members) often became heated.

Site visits

Site visits represented the essence of experiential learning (i.e. learning from direct experience). This was about seeing, touching and feeling integrated HIV and FNS interventions in action, and interviewing project staff and beneficiaries to learn, first hand, about their challenges and secrets to success. Site visit facilitators were encouraged to create lively and interactive outings, where participants would come away with new ideas, along with guidance on how to put them to use. Some of the interventions visited included a youth vocational training project (tailoring, metal smithing, and furniture making), aquaculture (fish farming) for HIV-affected families, and income generating activities for PLHIV and orphans and vulnerable children.

One example of how learning acquired during one of the site visits (aquaculture/fish farming) was put into practice after AF09 appears in Box 3. Malawi Defence Force capitalizes on skill building in fish pond creation.

Coaching/mentoring on presentation skills

For many of the participants, AF09 offered an opportunity to speak at an international conference for the first time in their careers. As part of its commitment to building capacity, the AF09 organizing committee worked with those with presentation/facilitation roles who requested mentors, providing one-on-one support and guidance on presentation style, content, and delivery. Active coaching began by phone and email months before AF09, and culminated in a personal 'coaching and prep' day the Saturday before the event.

All panelists, moderators, site visit facilitators, presenters, debaters, morning motivators and others with key presentation/facilitation roles arrived 1-2 days early to work with their mentors and practice their parts. In many cases, coaching continued throughout the week to maximize the self-confidence and presentation/debating skills of each participant.

Box 4: Guidelines for panel discussions

1. The content should be operational in focus (i.e. practical/usable rather than theoretical), reflecting the 'voice of experience'.
2. The content should profile best practices, innovative approaches or solutions, and where possible, provide evidence that profiled interventions actually work.
3. The mix of panelists should provide content that is complementary in nature, in order to provide the 'big picture'. Panelists can 'play off' each other through the content they present, even disagree at points, but overall must facilitate and encourage discussion.
4. Audience involvement should be actively sought, not only through questions and answers but through any other creative means! Work with your coach for ideas.

Box 3: Malawi Defense Force capitalizes on skill building in fish pond creation



Project Concern International, Malawi, 2009

The Malawi Defense Force's (MDF's) Lt. Davie Jones Gondwe was supported by Project Concern International (PCI) Malawi to attend AF09. Selected by his commander at Cobbe Barracks, Lt. Gondwe represented the Umodzi HIV Support Group and their successes in communal gardening and aquaculture. At AF09 Lt. Gondwe reported that the gardens at Cobbe Barracks in Zomba produce sufficient quantities of fruit and vegetables to enhance the food security status of families in the network, while also supporting the salaries of three civilian gardeners and a fourth person to maintain a fish pond. There had been structural problems with the fish pond, however, resulting in the loss of water and fish.

Gondwe is now using skills acquired at AF09 to provide technical assistance for the rejuvenation of the pond and pond maintenance. Gondwe has also worked with Cobbe's Umodzi Support Group to develop a second fish pond, with construction of that pond financed by contributions from the network's membership of PLHIV, with the expectation that they will reap the benefits of imminent fish harvests.

Gondwe was recently recruited by the MDF's HIV Programme Coordinator to showcase the successes of the Cobbe support network to other barracks in the MDF system, sharing lessons learned from his participation at AF09. Two other units have also requested his help and the MDF has agreed to fund Gondwe's travel to these and other units to provide technical support and capacity building towards replicating this effort.

Given that didactic or instructive styled presentations are generally ineffective for adult learners, lectures and excessive use of power point slides were avoided at all costs. Presenters (moderators, panelists, etc...) were given specific guidelines and coaching on how to best utilize power point as a support to 'their story' (if they chose to use it at all) (see Box 4).

Though each panelist had a brief opportunity to provide programmatic context in the form of a presentation, the focus was primarily on interaction with the audience and creating an active learning environment.

M&E – learning trees and listening posts

Individual differences among adult learners increase with age and experience, and adults have a deep need to be self-directing, i.e. to identify and opt-in to learning activities that most appeal to their individual learning styles. While site visits were ideal for some participants (in terms of absorbing and experiencing new concepts and information), others preferred more conventional models, such as the panel discussions and debates. AF09 offered a diverse portfolio of learning opportunities so that each and every participant could find an approach that resonated best with their own learning style.

Box 5: Sponsors of AF09

There were a total of 17 financial sponsors of AF09 who contributed in total more than US\$298,000. The majority of these organisations also contributed their time and expertise to the organising of the event. AF09 sponsors included: Catholic Relief Services (CRS); Concern Worldwide; Farmers World; Friends of WFP; German Technical Cooperation (GTZ); Global Alliance for Improved Nutrition (GAIN); International Centre for Tropical Agriculture (CIAT); Irish Aid; Land O'Lakes; PATH IYCN Project; PCI; Save the Children; Small Foundation; Technical Centre for Agricultural and Rural Co-operation (CTA); Gem Foundation; World Food Programme (WFP); and World Initiative for Soy in Human Health (WISHH). Those organisations that provided in-kind support to AF09 included: USAID, FANTA-2, UNICEF, Sunbird Hotels/Resorts, and Zain Telcom Network. Air Malawi and Kenya Airlines also provided discount flight tickets for AF09 participants.

Project Concern International, Malawi, 2009



Vouchers and fairs as emergency response in DRC



Masisi Centre fair

Summary of evaluation¹

In late 2008, escalated fighting among rebels and the Congolese Armed Forces (FARCD) provoked renewed and widespread displacement in North Kivu province, Democratic Republic of Congo (DRC). In response to the unfolding crisis, Concern Worldwide implemented an Emergency Assistance Project to newly displaced and host families in Masisi territory funded by the Disasters Emergency Committee (DEC) and Irish Aid.

Concern's nine-month emergency project sought to contribute to the livelihood security of displaced and host families in Masisi territory by increasing household access to food, non-food items (NFIs) and water. Concern aimed to identify and assess the needs of 10,000 vulnerable and newly displaced households,² meet emergency NFI needs, improve water access for households in Rubaya, and provide livelihood support for four months for the poorest beneficiaries. A primary activity of the project was creating 'fairs' where beneficiaries could use vouchers to purchase non-food items (e.g. kitchen utensils, pagnes³), seeds and tools from vendors, as well as to pay school fees. Concern opted to use fairs and vouchers rather than distributing NFI kits, to provide beneficiaries flexibility and choice.

An independent evaluation was conducted in August 2009 to assess the extent to which the project achieved its objectives, with particular emphasis on the appropriateness of the voucher activities.

Key findings

The evaluation found that fairs were an appropriate and effective response to the needs created by displacement and return. Assessments accurately identified priorities among households in the intervention area, which laid most emphasis on the replacement of basic household goods lost when they fled. The basic conditions were in place for implementing fairs – traders could supply critical items, authorities supported the intervention and beneficiaries felt that the fairs would be an appropriate way to meet needs and would not put them at risk.

Concern organised fairs with the following basic parameters:

- Beneficiaries had \$35 worth of vouchers (in Francs Congolais) and also received two blankets and soap from Concern.
- Traders were pre-selected from intervention areas (as opposed to Goma city) in order to contribute to the local economy.
- Articles to sell (kitchen articles, pagnes, haricot/pea seeds, machetes, hoes, head-scarves) were pre-selected based on focus group discussions (FGDs) with women.

- Prices of articles were fixed based on market research and negotiations with traders.
- Primary school fees could be paid to head-masters.

The fairs provided beneficiaries with access to key goods and services in a way that enabled them to make choices according to their own priorities. Most beneficiaries were highly satisfied with the process. The majority preferred the fairs to receiving pre-packaged NFI kits, cash or vouchers to use in the local markets because the fairs enabled them to pay school fees, provided them with choice and were safer than receiving cash or vouchers to use in the local market.

The option of paying school fees was an especially popular aspect of the intervention. One-fifth of beneficiaries used vouchers to pay school fees and 27% of those beneficiaries paid for more than one child or trimester. For parents with children in primary school, school fees were priority expenditure that they were having trouble meeting because fighting and displacement had interrupted their livelihoods. The payment of school fees enabled children to continue their studies uninterrupted, as they were often sent home from school when parents failed to pay. The inclusion of school fees tipped many recipients towards preferring fairs compared with receiving in-kind assistance.

Addressing certain issues would have further increased the effectiveness of the fairs. In spite of substantial sensitisation efforts using community members, a small number of beneficiaries simply did not grasp the process. In rare cases, they exchanged all of their vouchers for only one or two items. The prices of certain goods in the fairs were higher than market prices. The selection of articles should have been wider and should have included used clothing, which was in high demand by beneficiaries. There were some cases of articles running out at certain times. The lack of small voucher denominations reduced flexibility because beneficiaries could not pay for articles with precise amounts and traders did not provide change in the form of cash or vouchers. Beneficiaries therefore had to purchase multiple items with one trader or receive change in the form of soap or salt.

In terms of efficiency and cost effectiveness, using vouchers required more planning and was slightly more expensive compared with in-kind distributions, but had the benefit of providing more choice to recipients and supporting local traders. Sensitisation with beneficiaries and traders, combined with the creation of fairs that served around 700 households per day, took more time than the well-established approach of procuring and distributing NFI kits (up to 1,000

Evaluation

households per distribution day). The fair approach was marginally more expensive since use of local traders meant it was not possible to benefit from savings inherent in bulk purchasing through competitive procurement processes. However, working with local traders directed profits to businesses in the intervention areas as opposed to those in Goma or outside of DRC. There is also widespread recognition among non-governmental organisations (NGOs) that beneficiaries often sell certain NFI kit items to meet other priorities; the use of vouchers probably discouraged this resale by providing choice and the option of paying school fees.

In targeting the assistance, Concern used a participatory exercise where a committee of community members ranked displaced and returnee households (some of which were hosting displaced households) into categories of 'poor', 'very poor' or 'poorest of the poor'. Concern then targeted assistance to the latter two categories. The result was high levels of understanding, satisfaction and inclusion in Rubaya and Bihamwe, where upwards of 95% of households were targeted and limited inclusion/exclusion errors were reported. Given that the assistance provided did not vary between the bottom two wealth categories, the targeting process could have been simplified by establishing one set of criteria for inclusion rather than ranking households into three wealth groups. In Matanda, where the 'poorest of the poor' were targeted because remaining resources could serve less than half of the population, the process was complicated by a lack of transparent information on the targeting criteria and the inherent difficulties of targeting assistance to only a portion of the population amid similar levels of need.

Because of a one-month project suspension following an attack on a Concern base, Concern decided not to implement the livelihoods support component of the project through a monthly cash or voucher transfer. For the water activities, FGDs and key informant interviews confirmed that water access was a problem in Rubaya, as taps were open only for two hours each day. Following Concern's linking of a spring with an existing tank, water access increased significantly. Leaders and focus groups reported that



Bwira Sancha and her daughter from Luibo, Masisi Territory, with a cash voucher

¹ Baily, S (2009). An independent evaluation of Concern Worldwide's emergency response in North Kivu, Democratic Republic of Congo. Responding to displacement with vouchers and fairs. Humanitarian Policy Group, Overseas Development Institute, London September 2009. Download report at: <http://www.odi.org.uk/resources/download/4195.pdf>

² The number of beneficiaries was subsequently reduced from 10,000 to an estimated 8,000 as other non-DEC funding initially allocated could not be carried forward beyond 31 December 2008.

³ A piece of material used by women as clothing or tailored to make clothing.

some taps were breaking because of the stronger water pressure in the tank.

Main conclusions and recommendations

The overarching objective of the project was to contribute to livelihood security of displaced and host household families through increased access to food, NFIs and water. While it is difficult to determine impacts on livelihood security, access to NFIs, agricultural inputs, school fees and water contributed to livelihoods by meeting important basic needs, supporting agricultural livelihoods for those with access to land and reducing household expenditure. There were certainly very positive livelihood impacts for the 17 traders who participated in fairs, who made profits that far exceeded their normal activities. Increasing the value of the voucher would have further augmented support to livelihoods, but at the evident cost of reaching fewer beneficiaries.

Providing choice to recipients was a clear advantage of the fairs compared with more traditional forms of emergency assistance where assistance commodities are distributed. Bringing in more traders would have made choice wider and more consistent. Humanitarian agencies and donors should take note of Concern's inclusion of school fees in this project. In this setting, it was a safe and appropriate way to support education and livelihoods by reducing household expenditure.

High prices of articles in the fairs were far and away the largest complaint of beneficiaries. Prices were higher than 'normal' market prices because of a combination of three factors: certain items were of a different quality to those in the local market, traders did not always provide change to beneficiaries at the fairs, and despite Concern's efforts to set prices at or below market level, prices were not accurate for all items. Taking measures to ensure lower prices in fairs would increase both efficiency and effectiveness.

The emphasis on participation throughout the project had a number of positive benefits. The thorough sensitisation process using community members resulted in a general high level of understanding among beneficiaries. To respond to the rare but important exceptions of beneficiaries who did not understand the process, Concern could have instructed sensitisation committee members and local leaders to identify people who might have trouble understanding the process and encourage people to bring a 'helper'.

Staff showed noteworthy skill and flexibility in quickly adopting a voucher approach, which was new to everyone involved. Concern's successful implementation of fairs shows that organisations do not need 'cash and voucher experts', but rather talented staff who can use their emergency assessment and project management skills to incorporate cash-based responses in their interventions. Having training sessions and centralised resources on cash-based responses readily available to key staff would facilitate this process, as would exchanges with organisations conducting similar interventions. The lessons from this intervention should serve as source of learning within and outside of Concern, including with agencies in the DRC engaged in similar voucher responses.

SQUEAC in routine monitoring of CMAM programme coverage in Ethiopia

By Lilly Schofield, Selome Gizaw Lalcha and Terefe Getachew



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The authors would like to thank the Woreda Health Offices and Health Centre Staff and all Health Extension Workers and Community Volunteers who took part in the survey, as well as the mothers and caregivers who participated as respondents.

The development of community-based management of acute malnutrition (CMAM) was a significant advance in the treatment of severe acute malnutrition and associated child mortality. One of its primary innovations was the decentralization of services closer to beneficiary homes by treating children through out-patient therapeutic programmes (OTPs) rather than as inpatients. This translated into the potential for significantly higher coverage because travel time for beneficiaries was shortened and community mobilization improved¹. However, in order to achieve this potential, regular monitoring of coverage levels and barriers to coverage are needed so that community outreach and mobilization strategies can be adapted accordingly.

The challenges of monitoring programme coverage

Measuring coverage of CMAM programmes presents special challenges when compared with other health services. Even during acute food emergencies, severe acute malnutrition (SAM) only afflicts a small percentage of the total under 5 population. Therefore, a random sample of all children under 5 is unlikely to include enough SAM children to estimate CMAM coverage with any precision. Secondly, traditional survey methods that rely on sampling proportional to population size may bias coverage estimates upwards, as areas of high population are more likely to be close to main roads and health centres (HCs)². In response to these challenges, an alternative survey method based on area sampling was developed for assessment of CMAM coverage. This method, called Centric Systematic Area sampling (CSAS), overcomes the biases described above. However it remains a resource and time intensive methodology, typically requiring 12 to 18 enumerators for 7 to 10 days of data collection and significant logistical support. It is therefore a poor tool for routine monitoring of coverage, as only the most well resourced programmes can afford to conduct regular CSAS surveys.

The challenge of monitoring coverage becomes more acute when an integrated CMAM programme is considered. While many

of the early CMAM programmes were implemented by non-governmental organisations (NGOs) in emergency settings, more and more countries are beginning to integrate the treatment of SAM into basic preventative and curative health services offered through Ministry of Health (MoH) facilities³. These programmes possess a high potential for sustainability, but are also resource constrained both in terms of staff and finances. The result is that in most integrated CMAM programmes, coverage is never assessed and so the proportion of SAM children being missed is never known. This also means the community mobilization cannot be evaluated and improved.

Valid International and partners recently developed a new methodology (SQUEAC) aimed at integrated CMAM programmes that is less resource intensive and requires only basic technical skills. This methodology is based on a combination of qualitative and quantitative data collection to triangulate information about coverage and barriers to access. This information is then confirmed through small area surveys that used Lot Quality Assurance Sampling (LQAS)⁴ techniques to confirm or refute initial hypotheses about adequacy of coverage.

Pilot of new methodology in Ethiopia

Ethiopia has long been at the forefront of developments in CMAM. One of the first places where CMAM programmes were initially trialled and the approach developed,^{5,6} Ethiopia

¹ Collins S, Dent N, Binns P, Bahwere P, Sadler K, Hallam A. Management of severe acute malnutrition in children. Lancet 2006; Dec 2; 368(9551): 1992-2000.

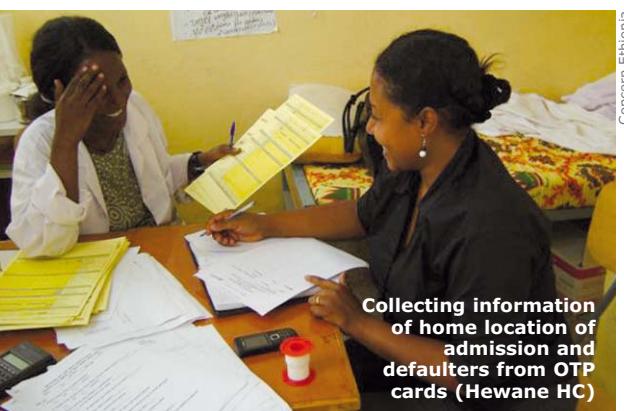
² Myatt M, Feleke T, Sadler K, Collins S. A field trial of a survey method for estimating the coverage and selective feeding programmes. Bull World Health Organ 2005 Jan; 83(1): 20-6.

³ Gatchell V, Forsythe V, Thomas PR. The sustainability of community-based therapeutic care (CTC) in non-emergency contexts Food Nutr Bull 2006 Sep 27; 27(3):S90-S98.

⁴ Myatt M. SQUEAC: Low resource method to evaluate access and coverage of programmes. Field Exchange 2008 Jun; 33: 3-5

⁵ Collins S, Sadler K. Outpatient care for severely malnourished children in emergency relief programmes; a retrospective cohort study. Lancet 2002 Dec 7; 360: 11770-11773.

⁶ Chaiken M, Deconinck H, Degefe T. The promise of a community-based approach to managing severe malnutrition: A case study from Ethiopia. Food Nutr Bull 2006 Jun 27;27(2): 95-104.



is currently working to integrate CMAM into primary health care facilities around the country. As of the beginning of 2008, CMAM services were offered in tertiary health facilities in four regions of the country. Given the scale of integrated CMAM in Ethiopia, there is an immediate need to identify ways of monitoring coverage on a regular basis that can be carried out by the MoH with limited or no external support.

This article describes a pilot test of SQUEAC in one region in Ethiopia to determine the feasibility and functionality of SQUEAC as a tool for use by the MoH to regularly monitor coverage of integrated CMAM services.

The SQUEAC pilot was undertaken in 23 health centres (HCs) across 8 woredas (districts) in Tigray Region, Ethiopia in November, 2008. A second round of SQUEAC surveys were conducted in the same HCs in July, 2009.

Study area

Tigray region is the Northern most region of Ethiopia bordering Eritrea on the East, Sudan on the West and Afar and Amhara regions to the South. A mountainous region, the primary livelihoods are subsistence agriculture, animal husbandry and wage labour. There is also significant reliance on safety nets and food aid among the poorer segments of the population⁷.

CMAM activities in Tigray Region began in June 2007 with initial training and support provided by Concern Ethiopia. The programme was launched in nine HCs in eight woredas throughout the region. This was soon expanded to 10 more HCs in 10 additional woredas. In 2009, the regional health bureau (RHB) began further decentralization through a programme of on-the-job training. At the time of the first round coverage assessment, OTPs were functional in 81 HCs in 38 woredas across the region.

Pilot Methodology

The SQUEAC assessment was based on a two stage sampling method. In the first stage, routine programme data such as admissions, recovery rate, defaults, etc, were used to identify a region of each HC catchment area that was likely to

have low coverage. This data was also used to generate a list of reasons why coverage may be low in this area.

In the second stage, a small area sample in the suspected low coverage area served to confirm or refute the original hypothesis that coverage was low. Low coverage was defined as below the appropriate SPHERE standard for selective feeding programmes (50% for rural areas, 70% for urban areas and 90% for camps). Teams also collected qualitative information⁸ from key informants on perceptions of the programme, malnutrition and reasons for non attendance to further triangulate data.

During the first round of SQUEAC, a cascade-training model was used. MoH staff from all participating HCs as well as representatives from the woreda health offices received a two-day training on the theory and practice of SQUEAC. HC staff then trained Health Extension Workers (HEWs) and Community volunteers (CVs) from their catchment area in data collection for the small area surveys. During the second round a one-day refresher orientation was given to MoH staff from town administrations, woreda health offices and HCs.

Selection of woredas/Health Centres for pilot

All woredas with >50% of their area falling within the catchement of a HC offering OTP services were included in the pilot. Within these woredas, all HCs offering CMAM and who had received support from Concern's National CMAM programme participated in the assessment.

Sampling for small area surveys

Once the suspected area of low coverage was identified during the first stage of SQUEAC, a random sample was taken from the villages in that area for the small area sample. Estimates of malnutrition prevalence and average village size were used to calculate the number of villages to sample in order to find a minimum of 10 SAM cases⁹. Experience from the first round showed that due to large village sizes in Tigray, sub-villages (a smaller population unit whose boundaries are locally known, but often are not listed in government records) were a more useful sampling unit. Sub-villages were therefore used as the sampling unit in all HCs during the second round.

Within village sampling was done in one of two ways in the first round; active and adaptive case finding¹⁰ or house-to house screening of all children 6 to 59 months in selected villages/sub-villages. Based on first round experience, it was decided that house-to-house screening was the most effective method. HEWs and CVs were already familiar with this technique from immunisation campaigns and could complete a village/sub-village in a reasonable timeframe. House-to-house was therefore used by all teams in the second round.

SAM was defined according to programme admission criteria as a child whose mid upper arm circumference (MUAC) was less than 11 cm and/or the presence of bilateral pitting oedema.

Data collection

Individual HCs were in charge of organizing their teams for data collection. On each team, a HEW was in charge of leading the team and recording all data on the data collection forms. The CVs on the team were responsible for MUAC measurement and oedema assessment.

For all SAM cases found that were not currently attending OTP, a questionnaire was administered to the caretaker to determine the reasons for non-attendance. All uncovered cases were also referred to the nearest OTP for treatment.

Data analysis

Data analysis was conducted using a simple compilation sheet that summed the information gathered from all villages within a HC catchment area. The total number of SAM cases found in all villages surveyed and the total number of covered cases was tallied. The achieved sample size (the number of SAM cases actually found in the survey) was then used to calculate a decision value for the survey. The following rule of thumb formula was used to calculate the decision value:

$$D = [N \times p] / 100$$

where p was the target coverage proportion (for example 50% in rural areas).

If the number of covered SAM cases was greater than the decision value, then coverage in the area surveyed was classified as above the target. If the total number of covered cases was less than or equal to the decision value, then coverage was classified as below the target. Defaulted cases and relapsed cases were considered uncovered because they were not attending OTP at the time of the survey.

Results from qualitative data collection (focus groups and semi-structured interviews) were summarised by main points. These points were compared to the results of the structured questionnaires collected during the small area surveys. The information from both the qualitative data collection and the small area questionnaires were used to identify barriers to coverage. Action points to address these barriers were then outlined by health centre staff.

Evaluation of the pilot

To assess the success of the pilot and the usefulness of the methodology for MoH use in Tigray region, a series of debriefings were held to capture lessons learned. First, the staff at several HCs were interviewed about their experience and opinions of the SQUEAC methodology and process. Secondly, a debriefing was held with Concern staff who supervised the survey and lastly, a debriefing was held with representatives from the federal and regional MoH and Concern nutrition staff to present results and brainstorm about next steps. A follow-up debriefing was held after completion of the second round with Concern staff who oversaw implementation of the second round.

The pilot test was largely successful with all 23 participating HCs able to obtain information about CMAM coverage and barriers to services during the first round and 22 HCs in the second round.

Implementation

Implementation of the entire SQUEAC assessment took six days in the first round and five days in the second round, including training but excluding travel days. Fieldwork for small area surveys and qualitative data collection took two days within each health centre area. During the first round, a large number of data collectors were

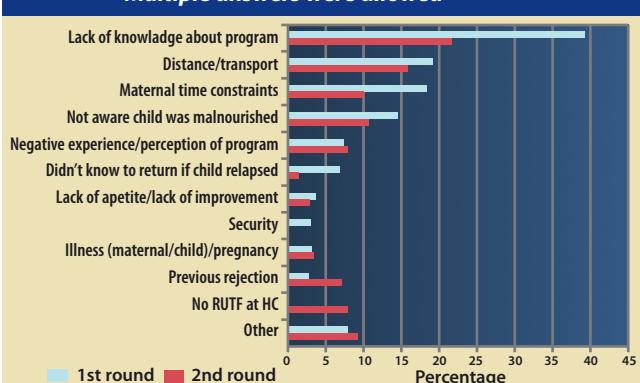
⁷ Tigray Region Livelihoods Profiles: Regional Overview. Livelihood Integration Unit. DPPA, January 2008.

⁸ Though ideally qualitative data collection happens before areas are chosen for small area surveys, because of the impending EOS screening and other schedule constraints, qualitative data collection and small area surveys were conducted simultaneously.

⁹ Personal communication with M. Myatt

¹⁰ See footnote 2.

Figure 2: Reasons for non-coverage, first (N=227) and second round (N=138)
Multiple answers were allowed



used to minimize data collection time. However it became clear that these high numbers were not required for efficient data collection. Therefore numbers were reduced significantly in the second round (see Figure 1), with no significant negative impact on data collection time or quality.

Outcomes

In the 23 HC catchments surveyed in the first round, all except one were below their target coverage level (50% for rural areas and 70% for one town administration) (Table 1). In the second round, three additional HCs had increased their coverage to above their target level.

The main reasons for non-coverage were largely the same in both rounds and are presented in Figure 2. In both rounds, lack of awareness of the CMAM programme was the primary barrier to coverage, followed closely by distance and lack of awareness about the signs and symptoms of malnutrition. While awareness of CMAM and of malnutrition requires further improvement, there is evidence that the action steps implemented by the ministry following the first round had a positive impact. The percentage of mothers with severely malnourished children surveyed who did not know about the programme decreased from 39.2% to 21.7% in the second round. Similarly, the percentage of caregivers who did not think their child was malnourished decreased from 14.5% in the first round to 10.9% in the second round (Figure 2).

Uptake by MoH actors/Sustainability

There was a high level of interest and investment by the MoH staff, particularly at a regional and woreda level. The identification of barriers to coverage and implementation of action steps to address these barriers was prompt. Before commencement of the second round, Concern held discussion with the woreda health offices about decreasing the financial and logistic support in the second round and eliminating financial support in the third round. There was a high level of ownership of the process at the woreda level, though HC staff still expressed a

need for external support to complete any future assessments.

There was a low rate of staff turnover in the seven months between the first and second rounds, facilitating a rapid refresher for HC staff in the second round. Unfortunately, low staff turnover is not the norm for Ethiopia. Increased inputs in the form of refresher training may be required before successive rounds of SQUEAC, if it is used in other areas of the country.

Discussion

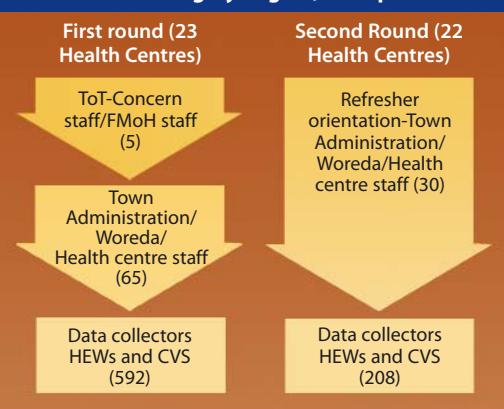
The methodology was well understood by the MoH and was successfully implemented in a short period of time. SQUEAC assessments required much less time and resources than the traditional CSAS method. As evidenced by the positive changes seen in coverage in several of the surveyed areas, the assessment also provides information on barriers to access and coverage that can be translated into effective remedial actions.

Challenges

A challenge that emerged in the second round was when an area sample found no severely malnourished children. Because the methodology identifies a relatively small area for sampling, focusing time and resources on suspected areas of low coverage carries the risk, particularly in areas where SAM prevalence is low, that no children eligible for OTP will be found. If no children are identified, then coverage cannot be classified as above or below the target. One possible solution to this would be to select back-up villages in areas where the SAM prevalence is low. If the first sample did not find any SAM cases, then sampling could continue through the replacement villages. While this would require more time for data collection it would ensure that coverage could be classified.

While the methodology worked well in rural areas, it was less robust in the urban context. Three of the 23 HCs included in this pilot were town administrations, which cover a very small

Figure 1: Cascade training model and numbers trained during first and second round SQUEAC assessments in eight Woredas across Tigray Region, Ethiopia



geographic area but have high population densities relative to the rural areas. The urban centres also tended to have lower malnutrition rates, which had implications for sample size. Because of this, identifying a sub-area of low coverage within the town administrations was not meaningful. In the three towns included, the entire town was taken as the sampling frame. Even when the entire town was taken as a sampling frame, identifying meaningful sampling units was difficult. Divisions within towns were largely administrative and did not correspond to population groupings, mixing both business districts and homes. Trend analysis and beneficiary home mapping were also more difficult to interpret in towns as only a handful of cases attending OTP at the town HCs came from the town itself. The majority of attendees came from outside the catchment area of the HC.

This pilot also highlighted that given the health workers limited experience with qualitative data methods such as focus groups and key informant interviews, a key component that was missed during the first round assessment was adequate training and guidance on conducting the qualitative part of the assessment. This was addressed in the second round by developing a short worksheet. This worksheet helped ensure uniformity of qualitative data collection and helped enumerators plan the qualitative work.

Even with these challenges, the assessments provided clear indications of where the community mobilisation systems were breaking down. Based on this, health staff were able to define immediate actions steps to improve coverage.

Conclusions

This methodology has the potential to become a useful tool for routine management and monitoring of CMAM activities by the MoH. There was a high level of ownership at the woreda level and HC staff were able to carry out the assessments and utilise the resulting information to address barriers to coverage.

While resource requirements for these assessments were minimal compared to alternative coverage survey methods, some costs remain. Whether these costs can be successfully incorporated into MoH budgets and a regular schedule of coverage assessments maintained without external support remains to be seen. However, this pilot clearly demonstrates that providing simple, easy to use tools for programme assessment that can be implemented with limited resources and external support is key to improving the quality of integrated CMAM programmes.

For more information, contact: Lilly Schofield, lilly.schofield@gmail.com

Table 1: Results from first and second round SQUEAC coverage assessments on 23 health centres across Tigray Region, Ethiopia

Health centre	First round - November 2008				Second round-July 2009			
	# cases	# covered	Decision value	Coverage	# cases	# covered	Decision Value	Coverage
E/Bahre	22	6	11	<50%	16	4	8	<50%
Abi Adi	9	1	4	<50%	7	2	3	<50%
Wukro Mariam	19	2	9	<50%	11	2	5	<50%
Chila	9	0	4	<50%	7	2	3	<50%
Mayasmi	20	1	10	<50%	18	2	9	<50%
Hayelom	9	0	4	<50%	19	1	9	<50%
E/Homus	28	6	14	<50%	2	1	1	<50%
Wukro town	4	0	2	<70%	3	1	1	<70%
Dinglet	13	2	6	<50%	0	0	-	<50%
Zala	26	7	13	<50%	12	1	6	<50%
Sobeya	16	4	8	<50%	18	3	9	<50%
Fatsi	15	0	7	<50%	18	3	9	<50%
Zalambessa	4	0	2	<50%	5	4	2	>50%
Frewni	14	1	7	<50%	5	2	2	<50%
Abi Kebeles	22	9	11	<50%	NA	NA	NA	<50%
Denglat	11	0	5	<50%	6	2	3	<50%
Mehoni	5	4	2	>50%	5	3	2	>50%
Kukuftu	4	2	2	<50%	8	5	4	>50%
Hreko	7	1	3	<50%	4	2	2	<50%
Korem	8	3	5	<70%	0	0	-	<70%
Hiwane	7	1	3	<50%	7	0	3	<50%
Adi Godum	3	1	1	<50%	6	4	3	>50%
Ado Keyeh	4	1	2	<50%	5	0	2	<50%

NA= data collection postponed due to schedule conflict with training for community based-nutrition

Agency Profile

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Website:	www.unhcr.org/nutrition
High Commissioner for Refugees:	António Guterres
No. of HQ staff:	740
No of staff worldwide:	5910



By Jeremy Shoham, ENN

The ENN interviewed Caroline Wilkinson from UNHCR's Nutrition and Food Security unit in the Public Health and HIV section. Although UNHCR appeared in an early Field Exchange agency profile section many years ago, so much has moved on in the organisation since then that it was time for a revisit.

Caroline spent many years of her career as nutrition advisor for Action Contre la Faim in Paris and has only recently moved to UNHCR. She started the interview by explaining recent changes with respect to how nutrition and other technical units operate within the organisation. The various units are now much more integrated so that nutrition, health, reproductive health, HIV, water, sanitation and hygiene (WASH), food security, Health Information System, malaria, and epidemic preparedness all work more closely together. There is only one nutritionist within the Public Health and HIV Section in headquarters. However there is also a regional nutrition and food security coordinator overseeing the programmes in the Horn of Africa, as well as several nutritionists working in country programmes.

Caroline explained how UNHCR's core nutrition approach aims to build integrated programmes that tackle the causes of malnutrition, i.e. working on prevention as well as treatment. This approach emerged over the past decade and to some extent, was triggered by the major micronutrient outbreaks seen in a number of refugee camps in the nineties which provoked considerable outcry. UNHCR, together with partners, routinely conduct nutrition surveys to understand the extent and nature of nutritional problems and then plan accordingly.

Recent surveys have shown how much micronutrient deficiency still exists amongst refugee children and women. This has led to the anaemia strategy, which started in 2008. The name of the strategy is slightly misleading in that although anaemia is identified as a huge problem, the UNHCR response to high levels of anaemia is meant to also tackle other micronutrient deficiencies, which may not be so measurable or obvious. The levels of anaemia found in UNHCR surveys in 2009 are truly alarming. Almost all surveys found levels of anaemia over 20% in children under five years, while 60% of surveys have found anaemia levels in excess of 40%. Since 2008, tackling anaemia and micronutrient deficiencies in UNHCR programmes has been one of the High Commissioner's priorities.

The anaemia strategy aims to reduce the global burden of anaemia in refugee populations. This will be done through reinforcing the capacity of health structures to diagnose and treat anaemia and other micronutrient deficiencies appropriately, controlling the prevalence of diseases that affect anaemia status (e.g. malaria, diarrhoeal diseases and worm infestation), improving access to fresh nutrient rich foods through small scale agricultural activities and

improving the dietary quality, specifically for the youngest children, through effective infant and young child feeding (IYCF) programmes. These are to be combined with the use of products aimed at improving the nutritional intake of specific target groups.

UNHCR and partners have introduced micronutrient powders into the programmes in Bangladesh, Nepal and Kenya and have shown very positive effects in Bangladesh and Nepal, where anaemia in children has declined by 40% and 20% respectively. The powder is added to the World Food Programme (WFP) general ration.

UNHCR are working concurrently with Lipid Based Nutrient Supplements (LNS). In Bangladesh they are providing Plumpy'Doz during the peak hungry season for a five month period to 6-36 month old children. Nutributter will soon be used in Algeria, Dadaab and Djibouti. As can be seen, UNHCR do not use a standardised product and they are working closely with the Centre for International Child Health, London on guidance around product choice given the specific nutrition context, as well as developing tools for improved monitoring and evaluation.

In addition, UNHCR have been working on a robust yet simple methodology for acceptability testing before introduction of new products, piloting tests in Djibouti and Algeria, with Yemen and Ethiopia soon to follow.

The products are just part of the anaemia strategy, which also aims to improve dietary quality through activities like supporting income generation activities, small scale agriculture and expanding coverage of IYCF programmes. The strategy has so far been rolled out in seven countries in 2009, with the hope of rolling out in a further four countries in 2010.

So what has happened to all those major micronutrient outbreak deficiencies seen in the eighties and nineties, e.g. scurvy, pellagra and beriberi? Although surveys suggest that sub-clinical deficiencies are still widespread, Caroline felt that better access to fortified foods has undoubtedly made a big difference. UNHCR and WFP have been working closely on improving the fortification of general rations and blended foods in refugee situations for a number of years. At the same time, UNHCR are still responsible for complementary foods to the general ration in their memorandum of understanding with WFP, which means provision of fresh food items and condiments. Caroline feels that this is something UNHCR don't do very well, due principally to logistical and economic constraints.

UNHCR's IYCF activities are implemented well in some countries and less well in others. In the Dadaab camps in Kenya, UNHCR and CARE have created hundreds of community support groups and managed to significantly increase rates of exclusive breastfeeding. There are also possible links between camp gardens and IYCF, which should help to increase dietary diversity for younger children. For example, they have introduced 'baby gardens' that target families with young children to improve access to fruit and vegetables. Fresh food vouchers are also being targeted towards younger children in Kenya. UNHCR are trying to strengthen growth monitoring promotion, as well as working closely with the malaria section to combat anaemia through rolling out treated bed net coverage, systematic spraying and

use of rapid diagnostic tests. The nutrition unit works closely with the WASH unit.

Although UNHCR are measuring the effectiveness of their anaemia strategy and programmes by looking at rates of anaemia (because it is relatively easy to measure in the field compared to other kinds of micronutrient deficiencies), the indicator is used as a proxy for overall improvement or deterioration in micronutrient status.

Another core element of UNHCR's nutrition work is addressing high levels of global acute malnutrition (GAM) still found in many camps and urban populations, e.g. Bangladesh, Chad and East Sudan. A typical response is to set up selective feeding programmes and UNHCR is striving to improve their quality. UNHCR is also supporting transition to the use of the 2006 WHO growth standards and the use of mid-upper arm circumference (MUAC) as an independent admission criterion, as well as providing community based management of acute malnutrition (CMAM) services in all operations where these are required. Quality of selective feeding programmes is a real issue, especially since UNHCR work with a diverse range of partners, many of which are not specialised in nutrition as such and may not follow internationally agreed protocols. The majority of partners are local NGOs who work with long-term refugee populations.

Another challenge for UNHCR is that their programme case load is increasingly made up of urban based populations. Provision of services in these urban settings is not straightforward and it can be very difficult to identify target vulnerable groups in these contexts. Furthermore, it is important to work with, and through, the national government system in situations where the local population also have considerable needs. A critical policy for UNHCR in urban areas is to work together to strengthen the existing government services rather than to set up parallel services.

In urban contexts it is often not appropriate to implement a general food distribution specifically for refugees, mainly because it is so hard to target and very impractical. There are also issues of equity, e.g. it is inappropriate to exclude an equally needy local population. UNHCR are therefore finding that a greater number of their programmes provide food assistance through vouchers based on vulnerability rather than entitlement on the basis of refugee status alone.

In light of all this work, three key medium term goals for the nutrition unit in UNHCR are to increase the quality of nutrition programmes (prevention and treatment of malnutrition and micronutrient deficiencies), increasing the understanding of the impact of LNS and other products on anaemia and GAM, and to develop a workable strategy for urban-based populations.

In answer to a question about bigger-picture challenges for UNHCR's nutrition work, Caroline ventured the following; "UNHCR is a house full of lawyers whose main mandate relates to refugee protection. Nutrition is therefore only a small part of what UNHCR does. Furthermore, compared to other actors like UNICEF and WFP, UNHCR is a relatively small player in the nutrition world. At the same time, there are a lot of refugee-specific issues to deal with so that international protocols and strategies may not always fit easily with how UNHCR has to operate. For example, refugees often have very limited access to a diversified diet. As a result, UNHCR may have to do some things differently or think longer-term". Although Caroline didn't 'dot the i's or cross the t's', I inferred from this comment that nutrition constantly has to fight its corner within UNHCR and that this task is not made easier by the fact that nutrition strategies and approaches within the organisation cannot simply be lifted 'off the peg' but have to be tailored to the unique contexts within which UNHCR work. In short, implementing a nutrition strategy within UNHCR is always going to be challenging. The ENN can only wish UNHCR every luck and success in this endeavour.

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.

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Correction

The link to the SCN website in the news piece, HTP technical update: we need your views, in Field Exchange issue 37, p 23, was incorrect. The correct link is: http://www.unscn.org/en/hosted_websites/gnc_htp/modul.php



One of our longest serving members of staff in the UK, Rupert Gill, left ENN at the beginning of March. Rupert joined the ENN when the office moved from Dublin to Oxford in 2004. As well as managing the ENN office, he stepped into numerous roles to help 'run the show', from finance to IT development to project management. Rupert has always been an incredibly generous and supportive colleague and friend. He has contributed intellect and creativity to ENN endeavours while also shaping the culture of the ENN. As he moves onto fresh challenges, we wish him well in whatever new ventures he undertakes.

Field Exchange

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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.

The Team

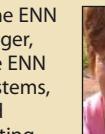
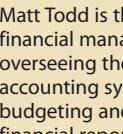


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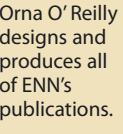
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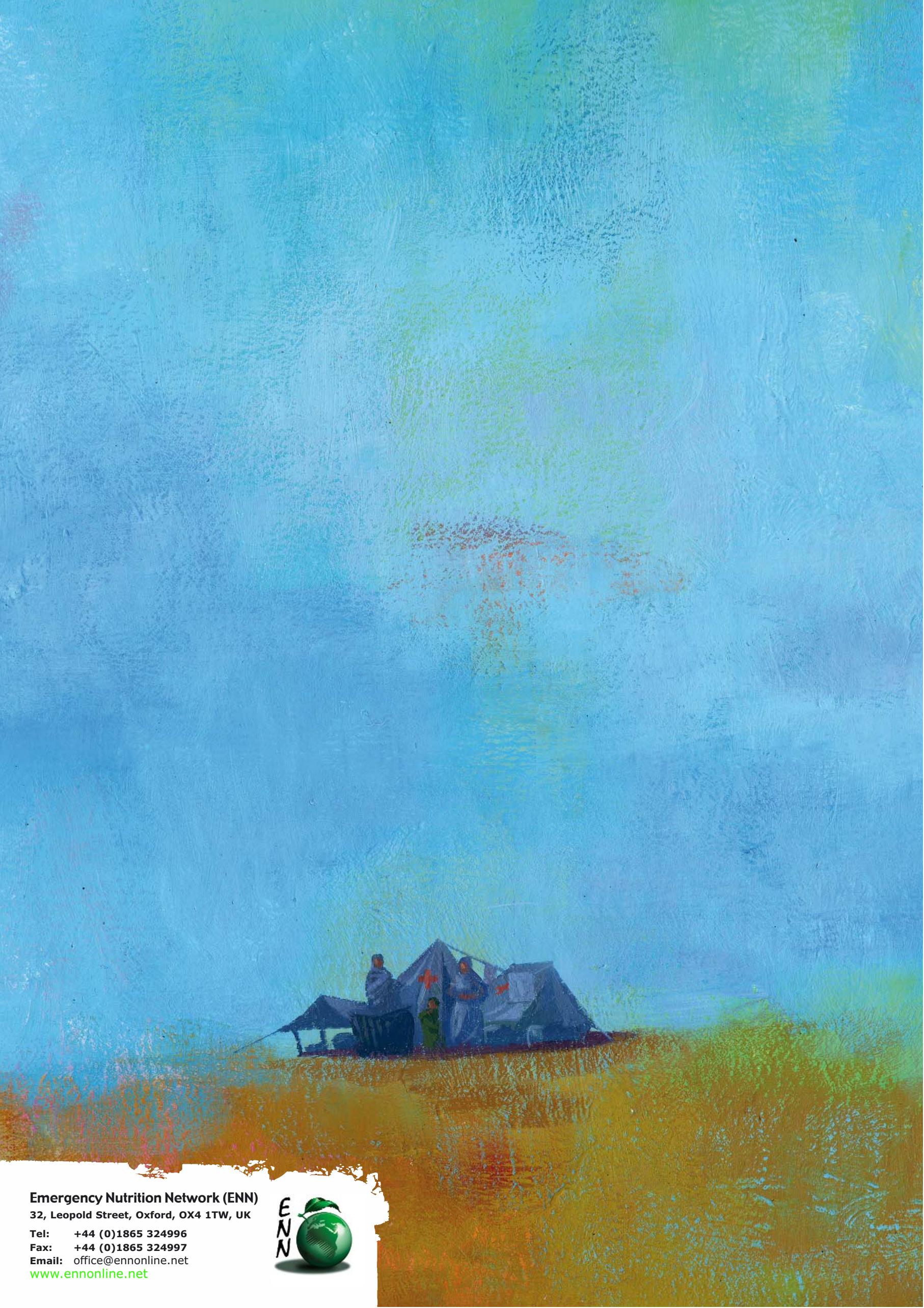
Orna O'Reilly designs and produces all of ENN's publications.

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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) 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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