• Micro-gardening in Uganda
• GIS in nutrition surveys
• Iron deficiency in Argentina
• CBT in Myanmar
From the Editor

O
ver the years, Field Exchange has had its fair share of criticism to which the editorial team have always tried to respond positively. More often than not, we publish critical views in the letters section. It’s probably true to say that the ENN are in some way reared by critical emails and letters as it shows that readers care enough about the publication to write in. In this issue of Field Exchange, we publish a number of letters (see letters section) which we have actively solicited in response to criticisms (published in FEx 23 and 24). These concern a purported bias by Field Exchange to publish articles on ‘high technology foods’ like RUTF, as well as a potential conflict of interest for the ENN in accepting funding from private sector companies involved in production of foods like RUTF. Further input and views from our readers on these issues would be most welcome.

The issue of appropriateness of technical and western derived solutions to developing country problems is an interesting one. In FEx 26, we have three field articles which describe programmes or approaches involving some form of technology. The technologies range from the very ‘high tech’, i.e. use of Geographic Information Systems (GIS), to very ‘low tech’, i.e. micro-gardening. The GIS article by Filippo Dibari, Andrew Seale and Paolo Paron provides detailed guidance on how to apply GIS analysis to conventional nutritional survey data sets, as well as the benefits, resource needs and constraints of this tool. The article on micro-gardening, provided by ACF-USA, describes an IDP programme in Gulu, northern Uganda, involving micro-gardening in bags using locally available materials and low maintenance systems. This form of production, which is especially useful in cramped conditions, appears to have been highly effective in promoting food security and increasing consumption of vegetables amongst a highly food insecure population. A third field article, also written by ACH staff, describes the experience of using a portable photometer to measure red blood cell haemoglobin levels in children affected by flooding in the city of Santa Fe, Argentina. The authors argue that the device provides a valuable means of complementing anthropometric data with information on anaemia - a frequently hidden problem.

In response to another criticism of Field Exchange - about the ‘eurocentric’ nature of Field Exchange photographs (Renzaho, A, Issue 24, p28) - the ENN commissioned a small-scale review of past pictures. The piece, written by Dorrie Chetty, a senior lecturer in sociology at Westminster University, explores issues of representation using a cross-section of Field Exchange photographs and certainly provides a food for thought.

There are several other highlights of this issue’s research section. A review by the HPG in ODI on dependency, is that there is a risk of creating emergencies, or for reducing support in protracted dependency amongst donor agencies for not intervening in crises, or for reducing support in protracted crises. Another example of ideology prevailing over common sense?

Important infant feeding issues are flagged in a recent paper published in the BMJ. The research investigated infant feeding practices in relation to hospitalisation and death in infants under six months of age, in India, Ghana and Peru. While there was no significant difference in death rate between exclusively and predominately breastfed infants, those who were not breastfed were over ten times more likely to die than predominately breastfed infants. Partially breastfed infants had an almost two and a half times greater risk of death. As well as demonstrating how critically important it is to consider the risk of not breastfeeding, especially in emergencies, the authors highlight how closer assessment of infant feeding practices could help identify where to target resources in order to maximise impact of intervention. In reality, the humanitarian community rarely adopt such a considered approach to supporting infants in emergencies. Assessment of infant morbidity, mortality and infant feeding practice in emergencies is, at best, inconsistent and, more typically, absent. The valuable collation of nutritional survey material by the UN SCN, published in ‘Nutrition Information in Crisis Situations’ (NICS), does not systematically collect infant feeding data, or endorse an approach for monitoring the well-being of infants. Including some simple, standard indicators on infant feeding practices could help prevent the well-being of infants. Including some simple, standard indicators on infant feeding practices could help prevent the well-being of infants. Including some simple, standard indicators on infant feeding practices could help prevent the well-being of infants. Including some simple, standard indicators on infant feeding practices could help prevent the well-being of infants.

Finally, on a completely different matter, the ENN are calling for input on the selection of trustees, in light of the decision to apply for registration as a charity in the UK (see news piece on p18 for details).

We sincerely hope that you enjoy this issue of Field Exchange.

Jeremy Shoham and Marie McGrath

Any contributions, ideas or topics for future issues of Field Exchange? Contact the editorial team on email: office@ennonline.net
Farming in Bags
Micro Gardening in Northern Uganda

By Holly Welcome Radice, Action Against Hunger-USA

Holly Welcome Radice has worked as a food security officer for AAH-USA in Liberia, Uganda, and as programme co-ordinator in Ethiopia.

The author would like to acknowledge the valuable contributions to this article of Pamela Atim, Victor Onenchan, and Thomas Ojara, and the support of Devrim Velly, AAH-USA and Lisa Ernoul, ACF.

The Acholi region of Northern Uganda (Kitgum, Pader and Gulu districts) has been affected by rebel activities since 1986. An estimated 100,000 people have been killed and 20,000 abducted during this near twenty year period of crisis. Since 1996, the population has been displaced and currently over 90% or over 1.3 million people are internally displaced (IDPs) in the three districts. Due to the constant crisis and erratic security situation, access to food, income, and productive assets for the population has become increasingly difficult over the years. In particular, access to land is very limited due to security constraints and related displacement. Assistance from non-governmental organisations (NGOs) and access to the population has continually been complicated by the erratic security in the district. The population is chronically food insecure, heavily dependent on food aid, face periodic lootings and attacks, and is plagued by the effects of poor access to basic infrastructures (e.g. safe drinking water and hygiene facilities).

Work of Action Against Hunger—USA

Action Against Hunger-USA (AAH-USA) has been active in Gulu district since 1997, mostly working in nutrition and water and sanitation (WAT/SAN). The majority of the population, estimated at 515,000 people (UNOCHA), are internally displaced and living in camps throughout the district.

Food security assessments were completed by AAH-USA in Gulu district in 1999 and 2003. As a result of recommendations made following the 2003 assessment, AAH-USA began a pilot micro-gardening project in two Gulu district IDP camps in 2004. The project aimed to tackle household food insecurity through achieving the following aims:

- Decreasing exposure to insecurity by reducing travel times (i.e. to gardens instead of fields)
- Decreasing time spent on gardening duties (e.g. weeding)
- Increasing livelihood and foods security options for households through sales of home produce, by offering planting work for the landless and redundant (including during the dry season), and producing more vegetables for their own consumption.

Project implementation

The project used the basic ideas of urban agriculture and rooftop farming – containerised planting, using locally available materials, and low maintenance systems in small spaces. The planting method promoted involved polyethylene grain sacks, which are abundant in the camps and not costly. Materials used included loam soil, rocks and a banana stem. The banana stems were placed in the sacks and filled with rocks. Loam soil was placed around the stem. When the sack was filled with soil, the banana stem was removed leaving a core area of rocks, which served as a watering area. Planting was carried out around the bag (sides) and on top of it. Some households that had small parcels of land near their compounds also planted using traditional gardening methods. Beneficiaries of the programme were recipient households of the AAH-USA supplementary feeding centres (SFCs) in Opit and Amuru camps. A total of 940 households participated in the programme.

Micro-gardening activities comprised training, distribution, and monitoring. Each camp had a demonstration garden near the SFC that was tended by a gardener and hosted the training sessions. Training days coincided with the days the caretakers picked up rations at the SFC. Groups of up to 40 women (almost all SFC caretakers are women) participated in the training in micro-garden construction, maintenance, and vegetable harvesting. At the end of the training, each household received a 100kg grain sack, seeds (carrots and a choice of spinach (dodo) or cowpeas (bo), and an instruction sheet written in the local language, Luo. Each household was supposed to plant one garden. The project was kept small-scale in order to gauge the interest and appropriateness of the activity before rolling it out.

Gardens were constructed near the beneficiaries’ household. Soil and rocks were brought from nearby areas and the majority of gardens were built in 2-3 days. Fences made of local materials (e.g. thorny bushes, bamboo) were con-
structed to protect the gardens. Maintenance took up on average just over 2 hours per week. This included watering, transplanting, fencing, and weeding. AAH-USA food security staff made weekly visits to the field to monitor the gardens and help troubleshoot for the households.

It is probably fair to say that the initial perception of the micro-gardening was that the project was “strange” and even “a childish thing to be doing”. The Acholi, who are the ethnic group in Gulu district, are used to gardening vegetables in a small area and, in some IDP camps, there is enough room to have a small garden alongside the house. However, gardening in a sack had never been seen before. Despite this, the beneficiaries, who were almost exclusively women, were eager to try the new activity. Many husbands and neighbours looked on in curiosity. Carrots were also new to most people, as it is not a traditional Acholi crop.

Success of ‘farming in bags’

The results of the micro-gardening project were assessed through weekly monitoring of the gardens’ progress and discussions with the beneficiaries, observations, and a formal evaluation. Overall, micro-gardening was well received. Almost all households who received the garden kit planted a garden. Over 85% of households claimed they were satisfied with the project and 94% wanted to continue with the activity for more seasons. The main reasons given for wanting to participate in micro-gardening included liking the project idea, having no ‘other’ land to plant, and being able to provide vegetables for their children. Even neighbours where impressed, with some 80% of those interviewed expressing positive views about the concept of the micro-garden.

A number of advantages were identified with respect to micro-gardening. The proximity of the micro-garden to the compound and the ease of maintenance were mentioned most frequently. Theft of crops was also reportedly discouraged because the micro-gardens can be constantly monitored. One unexpected advantage highlighted was that the micro-gardens decorate the home.

A few disadvantages of micro-gardens were also identified. The most significant ones were problems related to watering the garden (gardeners required, on average, two litres per day in the dry season) and protecting it from destruction by children and animals. Watering was a particular problem in Amuru camp where water availability was very limited.

The relevance of the project was also demonstrated by the fact that half of the households had not been planting vegetables in the previous season before receiving the seeds from AAH-USA. In addition, vegetable consumption is generally low. Most households only ate vegetables 1-3 times a week. The major reason given for this low consumption were cost and land being too far away, i.e. difficult to cultivate and keep in the home for daily use.

Fifty-five percent of micro-gardens that were observed were well maintained. However, there was a great contrast between the camps. The gardens in Opit were in better condition than those in Amuru. This was related mainly to the water scarcity in Amuru, where watering was carried out sparingly resulting in poorer crop performances.

At the time of the evaluation, 37% of the households had eaten 6 meals or more from their gardens, with an average of six people taking part in these meals. It should be noted that at this point, carrots had only just begun to be harvested. As these were the most bulky crop, the final number of meals will be considerably higher. Carrots were a big hit. Some parents stated that the children really enjoyed them and ate with more verve when there were carrots in the meal. AAH-USA conducted training with the beneficiaries on preparation and cooking of carrots. The crowd reaction was excellent with a lot of participation, complete with ululations.

None of the households sold the vegetables produced in the micro gardens, but 75% indicated that if the programme expanded, they would like to sell, as well as eat, the vegetables.

Conclusions

The experience of micro-gardening in Gulu district points to a potentially interesting means of addressing household food insecurity. Though the project is not a new idea and has been implemented in other displaced settings, there had been no such projects in Gulu district before this one. Although the current micro-garden project faced challenges, many of these could be addressed by improving the gardening methods, better targeting and monitoring.

An important attribute of the micro-garden is that it has offered a new idea to the IDP population. After almost 10 years of displacement and very restricted movement, the IDPs in Gulu district are largely demoralised and lack impetus for innovation. While planting in bags was first viewed as childish by many, people are now really interested. Also, the new vegetables may add a lot more interest to household cuisine.

AAH-USA plan to continue the project, improve it and increase the number of beneficiaries. The pilot project highlighted the need to increase the size of the gardens for greater impact, but at the same time making sure not to overburden households.

Emphasis will be placed on increasing production in order to promote consumption and sale. In order to do this there will be more detailed analysis of the types of planting methods promoted, in order to maximise output in return for minimal input. Other recommendations include;

- Improve targeting and follow-up: for example, better sensitisation and awareness, ‘home visitor’ staff for monitoring, and systematic monitoring.
- Improve programme inputs: for example, increasing the variety and quantity of seeds, the selection of seeds and the number of bags cultivated per household.
- Improve methods: for example, increasing the variety of methods (intensive farming, container methods), solving problems for seed propagation, achieving greater flexibility (use of bags versus land), planting for the rainy season, and adding climbing crops.
- Increase frequency and variety of training: for example, running several trainings over the year on gardening, and including more training on food preparation and hygiene.
- Capacity building of staff on micro-gardening: for example, more resources being channelled into micro-gardening methods (literature, web sites, in country training).

For further information, contact Devrig Velley, Food Security Coordinator, AAH-USA, email: dv@ahh-usa.org
Study of the Risk Factors for the Development of Nutritional Oedema in North Kivu, DRC

By Mark Myatt and Frances Mason

Mark Myatt is a consultant epidemiologist and senior research fellow at the Division of Epidemiology, Institute of Ophthalmology, University College London. His areas of expertise include infectious disease, nutrition, and survey design. He is currently working in Somalia.

Frances Mason is currently working part time as emergency nutrition advisor for Save the Children UK. Previously she spent three years as a consultant, following seven years with ACF – mainly as head of the nutrition and food security unit in Action Against Hunger UK.

This article is based on findings of a report written by Mark Myatt which, in turn, is based on the findings of research undertaken by Save the Children UK in DRC.

Table 1 Independent associations with nutritional oedema in children aged 6–24 months

<table>
<thead>
<tr>
<th>Positive association with nutritional oedema (i.e. an increased risk)</th>
<th>adjusted odds ration (95% confidence interval)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Food Item</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>soya beans</td>
<td>7.40 (1.63, 33.68)</td>
<td>0.0015</td>
</tr>
<tr>
<td>sweetened or flavoured water, tea, infusion, or other liquids (including soups and broth)</td>
<td>12.88 (2.65, 62.62)</td>
<td>0.0000</td>
</tr>
<tr>
<td><strong>Disease</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fever</td>
<td>2.53 (1.22, 5.24)</td>
<td>0.0081</td>
</tr>
<tr>
<td>intestinal parasites</td>
<td>2.18 (1.03, 4.93)</td>
<td>0.0205</td>
</tr>
<tr>
<td>respiratory problems</td>
<td>2.80 (1.04, 8.67)</td>
<td>0.0318</td>
</tr>
<tr>
<td>diarrhoea</td>
<td>4.08 (2.19, 8.15)</td>
<td>0.0000</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If mother is currently pregnant</td>
<td>4.50 (2.24, 10.01)</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Negative association with nutritional oedema (i.e. decreased risk of or protection against)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Food stuffs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>maize</td>
<td>0.53 (0.28, 0.99)</td>
<td>0.0222</td>
</tr>
<tr>
<td>other cereals</td>
<td>0.02 (0.01, 0.33)</td>
<td>0.0004</td>
</tr>
<tr>
<td>banana/plantain</td>
<td>0.09 (0.02, 0.36)</td>
<td>0.0000</td>
</tr>
<tr>
<td>avocado</td>
<td>0.25 (0.08, 0.78)</td>
<td>0.0072</td>
</tr>
<tr>
<td>sweet potatoes</td>
<td>0.06 (0.01, 0.42)</td>
<td>0.0002</td>
</tr>
<tr>
<td>any foods made with oil/butter/ghee</td>
<td>0.19 (0.05, 0.68)</td>
<td>0.0025</td>
</tr>
<tr>
<td>any food made with sugar/honey</td>
<td>0.43 (0.20, 0.87)</td>
<td>0.0083</td>
</tr>
<tr>
<td>haricot beans</td>
<td>0.03 (0.00, 0.24)</td>
<td>0.0000</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>having been breastfed in the previous 24 hours</td>
<td>0.16 (0.05, 0.50)</td>
<td>0.0000</td>
</tr>
<tr>
<td>having been weaned in the previous 120 days</td>
<td>0.16 (0.03, 0.88)</td>
<td>0.0071</td>
</tr>
<tr>
<td>Infant and child feeding index (ICFI) based on no. of food groups reported in previous 7 days</td>
<td>0.73 (0.60, 0.90)</td>
<td>0.0008</td>
</tr>
<tr>
<td>Increasing variety (no. of individual food items reported consumed) in the previous 7 days</td>
<td>0.79 (0.70, 0.90)</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

1 In May 2005, SCUK undertook a nutrition assessment in which 2.8% severe acute malnutrition was found (95% CI 0.8%-4.6%) of which 1.9% was kwashiorkor and 0.1% was marasmus-kwashiorkor.


In response to increasing concerns about this high prevalence of nutritional oedema, Save the Children UK undertook a case-control study of the risk factors for the development of nutritional oedema in North Kivu, in the north eastern part of DRC. The study was carried out in the Masisi Territoire which comprises of displaced Congolese, returnees and Rwandan refugees (many of whom live in villages in eastern Masisi).

**Method**

Data were collected on diet, breastfeeding (for children aged 24 months or below only), and disease. The study dataset consisted of 243 cases of nutritional oedema paired with 243 matched (i.e. 1:1 matched) controls, aged 6-65 months. A sub-set of the data, children aged 24 months or below (118 cases of nutritional oedema paired with 118 matched (i.e. 1:1 matched) controls), included data on breast-feeding which was analysed separately. Data analysis using appropriate methods (i.e. paired t-tests, Mantel-Haenszel methods, and conditional logistic regression) was carried out, controlling for sex, age and socio-economic status.

Dietary data were collected on whether certain listed groups of food items were consumed within either the previous 24 hours or the previous seven days. Data were re-coded so that reported consumption in the previous 7 days (as recorded) included reported consumption in the previous 24 hours. Associations between the listed food items (and indices based upon the reported consumption of the listed food items) and nutritional oedema are presented as pairwise associations between the reported consumption of a given food item and case or control status. This does not control for potential confounding effects in the data. Hence multiple conditional logistic regression (using the cLOGISTIC programme, an Episero add-in programme1) was subsequently used, presenting the results as adjusted odds ratios, their 95% confidence intervals, and the p-value for the maximum likelihood ratio test statistic. Only those variables with significant pairwise associations (i.e. p < 0.05) were included in the conditional logistic regression model. Non-significant variables were removed from the model using backwards stepwise elimination. The remaining significant associations are termed independent associations.

**Main findings**

The case-control study found positive associations...
Ations (i.e. increased risk) between nutritional oedema and the consumption of soya beans and sweetenedcess or flavoured water, tea, infused, or other liquids (including soups and broth). These latter fluids are often used for hunger abatement, providing children with a short-lived energy boost, replacing more nutritious meals and to ‘supplement’ breast-milk in non-weaned infants. Reported consumption of sweetened or flavoured water, tea or infusion, or other liquids (including soups and broth) in the previous seven days was independently associated with case or control status in children aged 6-24 months or below.

An increased risk also existed where the mother of the oedematous child was currently pregnant, hence cutting short the period of breast-feeding and potentially the time for childcare practices. These latter fluids are often used for hunger abatement, providing children with a short-lived energy boost, replacing more nutritious meals and to ‘supplement’ breast-milk in non-weaned infants. Reported consumption of sweetened or flavoured water, tea or infusion, or other liquids (including soups and broth) in the previous seven days was independently associated with case or control status in children aged 6-24 months or below.

During the past two years, Masisi has witnessed several upwardward trends in terms of family diversification, access to health care and support to carers/mothers to ensure that they can afford to take care of their young children. Other recommendations include:

- Better immunisation, vaccination and promotion of seeking early treatment.
- Diarrhoea control through hygiene promotion, protecting water sources and providing effective treatment with oral rehydration solution (ORS), and implementing measures to improve water availability, accessibiility and utilisation.
- Water is more accessible in the mountainous region of North Kivu where most families travel long distances for water (taking up to 25% of their time in the day). Many of these households have no adequate storage which may further contribute to limited availability of clean water, resulting in cases of diarrhoea, worms and other intestinal diseases.

The study found a negative association (i.e. decreased risk of or protection against) of nutritional oedema and the consumption of a varied diet. This particularly included consuming maize, other cereals, bananas/plants, potatoes, Soya beans, oil/butter/ghee and sugar or honey. Good infant and child feeding practices were also found to be protective, particularly breast-feeding.

In younger children, cases were more likely to be reported as having had a common childhood disease (e.g. diarrhoea, fever, ARI) before the onset of oedema (or, for controls, one month prior to data being collected) than controls. In all children, cases were also more likely to have had intestinal parasites (a condition that may be more severe in older children) or to have suffered from other (unspecified) disease, and to have been weaned for a longer period than controls. The data is, therefore, consistent with earlier weaning in cases than controls, and possibly a shorter duration if the child had suffered a recent episode of disease (fever, intestinal parasites, respiratory problems and diarrhoea).

The positive association between illness and kwashiorkor suggests that kwashiorkor is part of a broader public health problem. Studies have shown that households - unable to purchase necessary items to ensure health care and a sanitary environment. In all children, cases were also more likely to have had intestinal parasites (a condition that may be more severe in older children) or to have suffered from other (unspecified) disease, and to have been weaned for a longer period than controls. The data is, therefore, consistent with earlier weaning in cases than controls, and possibly a shorter duration if the child had suffered a recent episode of disease (fever, intestinal parasites, respiratory problems and diarrhoea).

The main problems faced by the population include limited access to land (a fundamental cause of inter-ethnic conflict as, over the past few decades, poorer households have been forced off their land by the large landowners), crop disease and ash from the eruption of the volcano Nyamulagira (both of which have particularly affected the production of potatoes and sorghum). A lack of access to the pre-war markets in Kinshasa and Western Congo has significantly reduced the prices of agricultural products since the supply is greater than demand. The area, therefore, is more cash-poor than food-poor. This particularly affects the poorer households who are reliant on their own harvested production and are unable to buy more diverse foods in the market. A lack of cash may also reduce access to health care - hence increasing the risk of disease - and may force the child’s carer to find labour, thus further reducing time for child care and household food production. Time is already limited, particularly in the mountainous regions of North Kivu where most families travel long distances for water (taking up to 25% of their time in the day). Many of these households have no adequate storage which may further contribute to limited availability of clean water, resulting in cases of diarrhoea, worms and other intestinal diseases.

For many years, kwashiorkor has been believed to be attributable, at least in part, to a deficiency in anti-oxidant nutrients9, resulting in high oxidative stress, primarily as a result of infection. The production of anti-oxidant enzymes that can protect the body from the harmful effects of this oxidative stress depends on the presence of sufficient trace elements, such as selenium and zinc in the diet. Soya beans, which in the study are found to increase the risk of nutritional oedema, are high in phytic acid which, in turn, can block the uptake of essential minerals, including zinc. Only a long period of fermentation will significantly reduce the phytate content of soya beans. Soya is currently under promotion in Masisi and is used to make flour for porridge and soya milk used in tea, particularly by the poorer households who do not have access to cow’s milk. Hence, the positive association between consumption of soya beans and nutritional oedema may be an indicator of household food insecurity, as well as the potential antioxidant deficiency.

Soya is also a component of the fortified flour (corn-soy blend) given to malnourished children in feeding programmes. Anti-oxidant nutrients are strongly maintained in breast milk, which may also contribute to the protective nature of good infant feeding practices, demonstrated by the negative association with nutritional oedema. However, recent research has concluded that anti-oxidants such as vitamin E, selenium, cysteine and riboflavin does not prevent the onset of kwashiorkor. This study notes that previous research had entailed comparisons of biochemical variables in small groups of severely ill, malnourished children in hospital settings. This new research was a prospective trial investigating the role of antioxidants in the aetiology of kwashiorkor – hence indicating that antioxidant depletion may be a consequence rather than a cause of kwashiorkor.

Future interventions should take into consideration the need of the poorer households for a greater period of time and to ensure that there are sufficient resources for healthcare even further than previous years. The study found a negative association (i.e. decreased risk of or protection against) of nutritional oedema and the consumption of a varied diet. This particularly included consuming maize, other cereals, bananas/plants, potatoes, Irish potato, oil/butter/ghee and sugar or honey. Good infant and child feeding practices were also found to be protective, particularly breast-feeding.

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For many years, kwashiorkor has been believed to be attributable, at least in part, to a deficiency in anti-oxidant nutrients9, resulting in high oxidative stress, primarily as a result of infection. The production of anti-oxidant enzymes that can protect the body from the harmful effects of this oxidative stress depends on the presence of sufficient trace elements, such as selenium and zinc in the diet. Soya beans, which in the study are found to increase the risk of nutritional oedema, are high in phytic acid which, in turn, can block the uptake of essential minerals, including zinc. Only a long period of fermentation will significantly reduce the phytate content of soya beans. Soya is currently under promotion in Masisi and is used to make flour for porridge and soya milk used in tea, particularly by the poorer households who do not have access to cow’s milk. Hence, the positive association between consumption of soya beans and nutritional oedema may be an indicator of household food insecurity, as well as the potential antioxidant deficiency.

Soya is also a component of the fortified flour (corn-soy blend) given to malnourished children in feeding programmes. Anti-oxidant nutrients are strongly maintained in breast milk, which may also contribute to the protective nature of good infant feeding practices, demonstrated by the negative association with nutritional oedema. However, recent research has concluded that anti-oxidants such as vitamin E, selenium, cysteine and riboflavin does not prevent the onset of kwashiorkor. This study notes that previous research had entailed comparisons of biochemical variables in small groups of severely ill, malnourished children in hospital settings. This new research was a prospective trial investigating the role of antioxidants in the aetiology of kwashiorkor – hence indicating that antioxidant depletion may be a consequence rather than a cause of kwashiorkor.

During the past two years, Masisi has witnessed an upsurge of humanitarian interven-tions. Programmes focused on the restoration process and in particular, infra-structure rehabilitation (i.e. building roads, health centres, schools, etc.) and the provision of basic materials to some of these structures (essential drugs, soya beans, etc.). Several agencies have recently initiated live-stock activities. Some agencies have supported households to grow soya beans. While this remains a good source of nutrients (particularly protein), it is essential that this be cooked well to reduce the phytate content.
Intervention Study on Cases Presenting Precursor Signs of Kwashiorkor

By Dominique Brunet and Frances Mason

Dominique Brunet is currently working as a nutritionist with SC UK. She has 10 years of experience with SC UK, ACF and Oxfam.

This article is based on a report written by Dominique Brunet which was, in turn, based on the findings of research undertaken by Save the Children UK in DRC.

A further study was undertaken by SC UK1 based on two hypotheses:

Hypothesis 1: It is possible to develop reliable admission criteria for children at risk of developing oedematous malnutrition.

Hypothesis 2: The admission of these children at risk into a supplementary feeding programme (SFP) will prevent the development of oedematous malnutrition.

One hundred children from the health zone of Goma (North Kivu province) aged 15 – 96 months, showing precursor signs of kwashiorkor (bloated face, discoloured and/or uncurred hair and oedema without signs of induration), were admitted into two SFPs for four weeks. These SFPs were sited close to a TFC, hence allowing all cases who developed kwashiorkor during the study to be immediately referred to the adjacent TFC.

In the first SFP (Kanyaruchinya), the first 50 cases showing the precursor signs of kwashiorkor were admitted into the programme and received a supplementary ration2 for 4 weeks, followed by a home visit twice a week.

In the second SFP (Mujda), the first 50 children showing the same precursor signs of kwashiorkor were not admitted into the programme, but simply placed under observation and monitored closely, twice a week, through home visits over the four week period.

A standard questionnaire was used to collect information on the age, sex, weight, height and type of precursor signs on admission and again at each home visit. This data were analysed using Epilinfo v.6.04. Only 8% of the children enrolled at the start of the study were eligible for admission into the SFP based on wasting (weight/height (W/H)). There was a statistically significant difference in W/H z-scores between the two groups at the start of the study (p<0.001), between the two groups at the end of the study (p<0.05) and in the intervention group before and after the four weeks of intervention (p<0.05). There was no significant difference between the two groups in W/H z-scores in the control group between the start and end of the study.

The cases receiving a supplementary ration who did not go on to develop kwashiorkor lost the bloatedness in the face, but the hair signs remained throughout the course of the study. In the control subjects, all the pre-kwashiorkor signs present at the start continued throughout the study.

In the intervention group receiving the supplementary ration, 6% of the cases developed kwashiorkor, compared to 22% of the cases in the control group who did not receive a ration. Therefore the probability of developing kwashiorkor amongst children with pre-kwashiorkor signs was less amongst the children receiving a supplementary ration than those without - a relative risk of 0.27 (95% CI 0.08, 0.92).

Amongst those that developed kwashiorkor in the intervention group, the nutritional oedema appeared between days 7–18 of admission, averaging at 11 days. In the control group the average was 20 days (appearing between 6–30 days).

Conclusions

Of the 100 children participating in the study, only 14% developed kwashiorkor during the four week period. However, the intervention highlights a confounding factor in that the supplement provides a protection role in the development of kwashiorkor. The majority (92%) of cases did not have the criteria to enter the SFP (based on wasting) and hence would not normally be eligible for a supplementary ration. It is important to note that the study only continued for four weeks, and hence any further evolution of the cases is not known after this period.

While the results only partially support hypothesis one, the second hypothesis is fully supported. The study showed that cases showing precursor signs of kwashiorkor who receive a food ration have less probability of developing kwashiorkor than similar cases who do not receive a ration.

The conclusions of the study resulted in SC UK proposing to its partner organisations to admit all cases with precursor signs of kwashiorkor into the supplementary feeding programmes. It is also recommended that this study is repeated in another area /country in which kwashiorkor is prevalent in order to validate the findings.

For further information, contact Frances Mason, Nutrition Advisor, Save the Children UK, email:F.Mason@savechildren.org.uk

1 Save the Children UK avec la collaboration due Prokhafut (Programme National de Nutrition) (2004), Etude d'intervention sur des sujets presentant des signes precurseurs du kwashiorkor. Brunet D.
2 The ration received was 2.6 kg of maize flour, 500g haricots beans, 210g of oil and 175g of sugar for week 1; 700g of CSB, 500g haricot beans, 210g of oil and 175g of sugar for weeks 2, 3 and 4. The daily ration equivalent came to 1900 kcal of which 9% was protein and 21% lipid in week 1 and 975 kcal with 13% protein and 35% lipid in weeks 2, 3 and 4.

Research

Infant Feeding Patterns and Risk of Death

Summary of published paper1

Current WHO guidelines recommend that HIV positive mothers should avoid breastfeeding only if replacement feeding is acceptable, feasible, affordable, sustainable and culturally acceptable. HIV positive mothers should breastfeed as long as possible, but stop as early as possible. The emergency context, meeting these criteria is particularly difficult, especially as HIV status of individual mothers is most likely unknown. The risk of virus transmission through breastfeeding depends on a variety of factors, including the disease status of the mother, whether she exclusively breastfeeds and for how long. Experts now estimate that on average, for each month of breastfeeding, less than 1% of infants are infected.2 With exclusive breastfeeding, the risk drops to less than half this level. Any risk of MTCT through breastfeeding and excess morbidity and mortality associated with positive HIV status, needs to be balanced against the risk of excess morbidity and mortality by not breastfeeding, whether an infant is HIV positive or not. Work from South Africa found that HIV-positive infants who had never been breastfed suffered greater morbidity and mortality than HIV-positive infants who had been breastfed.3 The paper summarised here helps to quantify the risks associated with infant feeding choice, and should help both health workers and mothers make an informed decision about infant feeding choice.(eds).

Recently published paper describes a secondary analysis of data from a multicentre randomised controlled trial on immunisation-linked vitamin A supplementation. The trial investigated infant feeding patterns (exclusive breastfeeding, predominant breastfeeding, partial breastfeeding and no breastfeeding) and risk of death and hospitalisation in infants under six months of age.

Altogether, 9424 infants and their mothers (2919 in Ghana, 4000 in India and 2505 in Peru) were enrolled when infants were 18–42 days old in two urban slums in New Delhi, India, a peri-urban shanty town in Lima, Peru, and 37 villages in the Kintampo district of Ghana. Mother-infant pairs were visited at home every 4 weeks from the time the infant received the first dose of oral polio vaccine and diphtheria–pertussis–tetanus (DPT) at the age of 6 weeks in Ghana and India and at the age of 10 weeks in Peru. At each visit, mothers were questioned about what they had offered their infant to eat or drink during the past week. Information was also collected on hospital admissions and deaths occurring between the ages of 6 weeks and 6 months. The main outcome measures were all-cause mortality, diarrhoea-specific mortality, mortality caused by acute lower respiratory infections (ALRI), and hospital admissions.

No significant difference was found in the risk of death between children who were exclusively breastfed and those who were predominantly breastfed (adjusted hazard ratio (HR) = 1.46; 95% confidence interval (CI) = 0.75–2.86). Non-breastfed infants had a higher risk of dying between 6–30 days).
5.0–22.0; P < 0.001) as did partially breastfed infants (HR = 2.46; 95% CI = 1.44–4.18; P = 0.001). Diarrhoea and ALRI were the main causes of death in both non-breasted and partially breastfed infants. In addition, non-breasted infants were at substantially higher risk of all-cause hospitalisation (incidence rate ratio: 3.39%; CI=1.74–6.61, p=0.001) and diarrhoea specific hospitalisation (IRR: 5.39, CI=2.17–14.4, p=0.001). The risk of ALRI hospitalisation was higher but not significant.

The authors highlight two major implications of their findings. First, the extremely high risks of infant mortality associated with not being breastfed need to be taken into account when informing HIV-infected mothers about options for feeding their infants. Second, the finding that the risks of death are similar for infants who are predominantly breastfed and those who are exclusively breastfed suggests that in settings where rates of predominant breastfeeding are already high, promotion efforts should focus on sustaining these high rates rather than on attempting to achieve a shift from predominant to exclusive breastfeeding. In communities where partial breastfeeding and not breastfeeding are common, e.g. India and Peru, the impact of breastfeeding promotion on child survival could be much greater and should take into account predominant and partial breastfeeding rates. The common practice has been to calculate impact estimates by applying the risks associated with non-breastfeeding to the prevalence of non-exclusive breastfeeding.

Some key breastfeeding indicators

These definitions are based on 24 hour recall in the period immediately preceding the questions:

Exclusive breastfeeding: the infant has received only breastmilk from his/her mother or a wet nurse, or expressed breastmilk, and no other liquids or solids with the exception of drops or syrups consisting on vitamins, mineral supplements of medicines.

Predominant breastfeeding: the infant’s predominant source of nourishment has been breastmilk. However the infant may also have received water and water-based drinks (sweetenend and flavoured later, tea, infusions, etc); fruit juice, ORS solution. Drop and syrup forms of vitamins, minerals and medicines (in limited quantities). With the exception of fruit juice and sugar-water, no food based fluid is allowed under this definition.

Exclusive and predominant breastfeeding together constitute full breastfeeding.

Breastfeeding: the child has received breastmilk (direct from the breast or expressed).


References:

For guidance on assessing infant feeding practice at a population level, see the LINKAGES website at http://www.linkagesproject.org/tools/m&e.php and MEASURE DHS at http://www.measuredhs.com

For guidance and resources on infant and child feeding, including HIV/AIDS and infants in exceptionally difficult circumstances, see the WHO website: http://www.who.int/child-adolescent-health/ NUTRITION/infant.htm

2 Ted Grebler. Personal communication.
Reading images in Field Exchange

We are concerned here with the extent to which FEx’s use of pictorial support reinforces or challenges a neo-colonial reading. To this end, this piece of research has analysed a selection of imagery - a sample of one Field Exchange issue from each year, beginning with the inaugural issue in 1997, was selected in order to get a cross-section of images. Acknowledging my own positionality as a woman from an ex-colony, I’ve picked out two recurring imageries which I consider significant and which exemplify how we ‘read’ images.

Each FEx issue selected contains several images of a woman and child, the latter in most cases at her breast, although sometimes the child is attached to the woman’s back (an example from FEx13 is given in image 1). From a Eurocentric reading, in the context of the religious imagery of Madonna and child, celebrated by European culture through paintings and sculpture, we would assume the woman to be the mother. Had the child been white and the woman rather plumper, some-one from an ex-colony would have assumed the woman to be a nursing maid. These are only two possible readings of the same image, i.e. individuals ‘negotiate’ different readings depending on their ‘positionality’. For an editor to ensure a ‘preferred reading’ of an image, s/he needs to have a clear understanding of the reader’s conceptual map. There is an assumption that the editor and the readers would come to the same understanding, sharing references from the same conceptual map. Whilst the selection and production of an image may be consciously processed, much of the meaning eventually achieved by the reader occurs at a subconscious level and evokes emotions, using references available to her/him. As images are often used, not just to support writing, but sometimes as a code, imagery often uses easily identifiable ‘signifiers’. In the development world, women and children have historically been identified as vulnerable groups with programmes focusing on maternal and child health. It’s not surprising, therefore, that the imagery of a nursing mother has become a recognisable signifier of ‘need’ and ‘vulnerability’. Furthermore, in European culture, women and children have traditionally been represented as potential victims, requiring the protection of their men, particularly against ‘strangers’. When a message of victim needs to be conveyed, an image of a woman and child serves as a short-cut code. Given the focus of Field Exchange – nutritional emergencies and the fact that many interventions target this demographic group for ‘good scientific’ reasons, i.e. women and children are often physically most vulnerable in food crises, it is inevitable that there will be many photographs of these programme beneficiaries. At the same time, given the dominant meaning of the mother and child, such an image is an appealing and powerful one from which its readers can pull out their conceptual map and come to similar conclusions.

Another recurring imagery in FEx which seems significant, particularly from a gender perspective, is that of food aid distributions. Interestingly, the pictures showing sacks of food aid are usually with males of the community seemingly in charge of distribution (e.g. in Issue 22, p17, see image 2). In contrast, the images relating to collection of fuel and local food production (e.g. cover of Issue 22) show women actively engaged in managing these resources. This ‘phenomena’ could be decoded as men are associated with the control of ‘international’ resources, whilst women are associated with local resources and affairs. There are resonances and parallels with the ‘postcolonial’ situation, whereby men were trained to operate mechanised agriculture for cash cropping whilst women contributed to the fluctuating, more insecure, local food production and consumption. This difference in gender imagery seemed to me far more striking than any picture in Field Exchange which may be read as ‘westerners being masters and the indigenous as powerless’.

On balance, the variety and quantity of images used by FEx showing people from the developing world as active, including women (a striking example being the cover of Issue 20, image 3), go some way to countering the dominant reading of ‘helpless victims from the developing world needing the help of westerners’. However, given the absence of varied representations of the developing world by the wider mass media, the dominant imagery and reading will remain that of ‘Enlightened West’ helping ‘The Rest’.

With this in mind, it would be prudent for FEx to develop a policy regarding representational issues, in order to reduce the risk of perpetuating portrayals of the developing world as an undifferentiated homogeneous mass. Crucially, representations used could emphasise parallels of experiences with the West, thus preventing a reading which maintains people from developing countries as ‘distant others’.

A consideration which is often neglected in a discussion of representations, is the wider impact they may have upon the subjects used in the photographs. Even if it is unlikely that the readership of FEx includes the subjects photographed, the way they ‘could theoretically’ read the images should be taken into account. This is more than just an issue of political correctness.

International agency staff who furnish FEx with articles and accompanying photographs should consider these issues of representation. Furthermore, agency staff would do well to be aware of representational issues when ‘reading’ photographs or taking pictures of their programmes for either public relations or academic purposes. A final but important point is that similar care should be taken over accompanying captions and headlines, particularly when these are obtained from picture libraries rather than the authors writing the articles.

For further information, contact; Dorrie Chetty at University of Westminster, UK. Email: Chettyd@wmin.ac.uk

The current ENN policy on using images is to source them from those that have written field articles/research pieces so that pictures are viewed within the context in which they were taken. We rely on the sensitivity of the authors and picture sources in doing this. Where other pictures are used not directly related to an article, then we seek to check with both the source and the article author that the image is appropriate to use in this context. Pictures included on the backpage ‘People in Aid’ are selected from what is sent into the ENN office by readers, and ENN staff snapshots during work overseas or attendance at meetings (contributions always welcome). (eds)

SC UK Experiences of Food Security Information Systems

Summary of review

SC UK recently conducted a review of their experiences of supporting Food Security Information Systems (FSIS) over the past 15-20 years. The review drew on specifically prepared case studies of experiences in Southern Sudan, Darfur, Somalia, Tanzania, Ethiopia, and southern Africa and two other specially commissioned documents. Providing an overview of SC UK experiences of secondment to strengthen FSIS and a synthesis of donor views on FSIS, the main findings of the review are as follows;

HEA and other methodologies as a tool in FSIS

While certain criticisms of the Household Economy Approach (HEA) have a degree of validity, others are often over-emphasised, reflect unrealistic expectations of the methodology or have not taken into account recent developments/advances in the approach. The ramifications of these critiques may be that credibility is, on occasions, undermined or that compromise methodologies are invoked, with potentially negative consequences. In order to strengthen and optimise the future role of HEA, scenario-based guidance material should be developed which highlights the strengths and weaknesses of the approach in different contexts. This would require more systematic documentation and review of the experiences of using HEA, particularly in terms of technical rigour, practicality in different contexts and proven value in advocacy and accuracy of prediction. In some contexts, compromised HEA approaches may be necessary in order to account for institutional, staff capacity, security and infrastructure related factors.

There is a significant gap in the literature, and within humanitarian agency understanding, regarding the impact and relative cost-effectiveness of many food and nutrition related emergency interventions. Given this, and the potential of HEA to provide a practicable approach to measuring food security impact, greater investment should be made in developing and promoting the role of HEA in impact assessment of food security interventions.

HEA and Individual Household Economy Approach (IHEA) also have the methodological potential to support FSIS in longer-term vulnerability analysis and poverty monitoring. Its key strengths as a methodology for this include the fact that HEA identifies structural constraints to food security and quantifies changing components of the food economy and that it can also be used to model different scenarios, e.g. policy changes. The approach also focuses on process and implementation-oriented indicators at household level, an area currently lacking in PRSP2 monitoring (often referred to as the ‘missing middle’). However, there is currently limited experience of employing HEA in longer term poverty monitoring and analysis.

Factors which influence use of information by decision-makers

Designers and implementers of FSIS need to have an understanding of the mandates, policies and politics of UN agencies and governments and how these may impact on decision-making, in order to tailor their information management and alliance building strategies accordingly. Politicisation of information may be critical at national government level. Consideration has to be given to whether governments are likely to be sensitive to information and therefore not react or, at worst, suppress information. The institutional location of the FSIS within government may be key here. This may also have implications for the need to decentralise government FSIS capacity and decision-making.

Credibility of the information system is also critical to information use. Experience has shown that this is most enhanced when there has been a process of multi-agency consultation over methodological development, e.g. in southern Sudan and national vulnerability assessment committees (NVACs). Credibility is also enhanced through involvement of agencies/staff whom external decision-makers perceive as ‘neutral’ in terms of information analysis. Thus secondment can be effective in ensuring buy-in. A related issue is the need to have a clear communication strategy for decision-makers so that they understand how the information is derived and analysis undertaken. Decision-makers who are not involved in the development of the system may require support/training.

FSIS information has rarely been used to promote or influence non-food aid responses in emergency contexts. While this reflects a number of political, institutional, and events driven factors, it also reflects methodological short-comings in emergency needs assessment and FSIS, as well as the limited array of response capacity in the emergency humanitarian sector. There is a clear need for increased experience of non-food aid responses in emergency situations to strengthen understanding of the types of information and analysis needed, to determine the appropriate-ness and feasibility of non-food aid responses in a given context.

Sustainability

Although sustainability of FSIS cannot be accurately tested until external donor funding is withdrawn, it is clear that where demand for the FSIS is high, e.g. in emergencies (and geo-politically important regions), there is likely to be consistent external donor support. However, for systems where emergencies are more sporadic and/or which are more embed-
ded in, and partially funded by, national govern-
ment structures, funding is likely to be less reliable.

Critically, there are almost no data on the costs of FSIS in the public domain. Without more standardised data on costs, it will be impossible to engage in informed debates about costs of establish-
ing and sustaining FSIS or different components of the system and the potential for cost-sharing amongst a variety stakeholders. Information on costs would facilitate identification of potentially sustainable funding sources for different components of a system, e.g. early warning systems, longer term poverty monitor-
ing and impact assessment, as these will have specific values to different stakeholders. The paucity of data on costs of FSIS and their various components is a severe constraint on finan-
cial planning in relation to sustainability.

Strategies to build and sustain capacity in FSIS need to be developed on a country-by-country basis and take account of existing educational levels and capacity/skills, and movement of staff within government departments, and between government and international a-
cieties. Consideration also needs to be given to competing demands on government staff dur-
ing capacity building work and the need for refresher courses/training of trainers, etc. Expertise can all too easily be lost, especially where there is limited institutional ownership and buy-in. A critical lesson and recommenda-
tion is how important it is to undertake a capac-
ity analysis prior to implementing or support-
ing an FSIS and to anticipate scenarios where capacity can be eroded. Such an analysis, which should be applied at all levels of the system (central and decentralised levels), will influence choice of methodology in terms of complexity and level of training needed.

The means to obtaining maximum institutional ownership of the approach, as well as ensuring that the FSIS is well placed institutionally in terms of maintaining support and influence, is a vital consideration. This requires substantial stakeholder analysis. For example, understand-
ing the organisational structures and where the decision-makers are, while ensuring the most powerful stakeholders are ‘on board’. There is a major gap in the literature with regard to understand-
ing how institutional factors impinge on FSIS sustainability. This could be addressed through more systematic institution-
analysts of the many FSIS currently operating within or at the margins of national govern-
ments. Unfortunately, international/expatriate techni-
cians who are called upon to develop/support/strengthen these FSIS are not equipped with the skills/background to under-
take institutional or organisational analysis.

Integrating FSIS with longer-term poverty monitoring and analysis

There are many methodological, institutional and political issues to consider in terms of inte-
grating FSIS with poverty and vulnerability monitoring. For example,

- What are the optimal ways of linking EW/FSIS and poverty monitoring institutionally at central, regional and district level?
- How compatible are monitoring and survey procedures and sampling for these distinct forms of information system?
- Is the FSIS methodology potentially too sensitive an approach for national government PRSP monitoring?

In attempting to integrate FSIS with longer-
term poverty monitoring and analysis, agencies should consider a range of technical, institu-
tional and political challenges.

Coordination

Coordination of FSIS is frequently overlooked. In the case study countries, it has been less of an issue in conflict affected areas where the main operational FSIS has been closely linked to a UN structure. In other situations, e.g. Tanzania, Ethiopia, northern Sudan, lack of coordination has led to duplication/wastage, lack of stan-
dardisation of information and confusion for decision makers. Formation of multi-agency bodies, including technical institutions, has proven to be the way forward with regard to better coordination. However, where the strate-
gy for FSIS is to integrate these with longer term poverty monitoring and analysis, then the likelihood is that coordination will become even more complex.

The experience in southern Africa shows that forma-
tion of a regional (across a number of countries) multi-agency body, including and chaired by regional technical institutions, lends credibility to regional leadership and builds consensus amongst participating institutions. It can also facilitate the development of appropri-
ate capacity at national level, while training at regional level ensures a common methodology and understanding across the region.

Currently, within the humanitarian system it is not clear who has the overall mandate to strengthen coordination of FSIS at country or regional level. This will change. It may be that lead international non-governmental organisations (INGOs) take on this role within countries or that INGOs with a history supporting FSIS may wish to independently develop this mandate and expertise.

Decentralisation

There has been limited experience of decentral-
ising FSIS. Theoretically, decentralisation allows for local ownership and provides a vehi-
cle through which local agencies can appraise and plan projects. However, there is little inform-
ation on the cost, feasibility, sustainability and real value of such initiatives. There may be critical issues around capacity of local staff and financial sustainability within local government funding mechanisms. There may also be politi-
cal issues around empowering local government and disempowering central administra-
tions. In general, donors are interested in FSIS that build up from a decentralised level as long as these are effectively institutionalised in gov-
ernment.

Donors

Key actors in FSIS must invest time and effort into communicating to donors how FSIS and specific methodologies operate in practice, as well as how different methodologies inter-
link and complement each other, rather than operate in parallel. Continuous dialogue with donors is necessary with regard to evolving information systems, overcoming and weaknesses of different approaches and lessons learnt. Given the high turnover of donor staff, these lessons need to be captured in guid-
ance material. There currently are no generic guidelines (there are agency guidelines) on FSIS in spite of the enormous demand for FSIS data.

Donors should be encouraged and supported in standardised monitoring of FSIS costs and their different components. Donors should also be encouraged to invest in evaluating the perform-
ance of FSIS – especially from an institutional and decision-making perspective, where donors will have a comparative advantage. Donors at country level should, as a matter of course, be involved in FSIS design in order to ensure greater understanding, trust and ‘buy-
in’ to findings. FSIS stakeholders should attempt to track/monitor donor policies/priori-
ties and ‘internal thinking’ with regard to FSIS. There may be donor specific across a range of countries, donor specific for a particular coun-
try, or staff/individual specific. This type of knowledge, perhaps kept in ‘donor files’, will allow agencies with a specific mandate to target ‘educational messages’ and funding requests to specific donors. It will also assist in building strong partnerships in support of spec-
cific FSIS approaches.

Guidance material

There is an urgent need to develop comparative and scenario-based guidance material on FSIS. Guidance material should allow potential users to evaluate which type of methodology and system is most appropriate for a given context. Clearly, any such guidance material should be a ‘working’ document. It is astonishing to note that there is currently no generic guidance material on FSIS, although such systems are a prerequisite for informing emergency and longer-term food security intervention design.

For any further information, contact Michael O’Donnell at SC UK on email: M.O’Donnell@savethechildren.org.uk
Current WHO guidelines for the management of severe malnutrition in children recommend calculation of weight for height z score (WHZ) or % of the median (WHZ)\textsuperscript{5}. However, in practice, this can be difficult to implement in resource-poor settings in sick children. A recently published study set out to evaluate MUAC and visible severe wasting\textsuperscript{6} as predictors of inpatient mortality at a district hospital in sub-Saharan Africa and to compare these with WHZ.

The principle aim of the study was to examine the predictive value for inpatient death of MUAC compared with WHZ among children aged 12 to 59 months. In addition, the study:

- investigated whether there were any differences in the children identified by MUAC versus WHZ
- evaluated the clinical sign of visible severe wasting as a predictor of subsequent inpatient death, and
- evaluated MUAC as an indicator of the presence of a WHZ less than or equal to –3.

**Method**

The study was conducted at Kilifi District Hospital, located in a rural, malaria-endemic area on the Kenyan coast. Approximately 10% of women attending the hospital antenatal clinic were infected with human immunodeficiency virus (HIV) in 2000. Antiretroviral therapy was not in routine use at the time of the study and data on individual HIV status was not available. Data were prospectively collected from all paediatric admissions as part of an ongoing surveillance study. For this study analysis, data from all children aged 12 to 59 months admitted between April 1, 1999, and July 31, 2002 were included.

From April 1 1999, trained clinical assistants measured MUAC, weight and height/length and from September 1, 1999, data on visible severe wasting\textsuperscript{4} was also collected. Children with a clinical diagnosis of severe malnutrition were treated according to WHO guidelines and local protocols.

**Statistical Methods**

WHZ, weight-for-age z score (WAZ), and height-for-age z score (HAZ), using the NCHS reference standards, were calculated using EpiInfo version 6.04\textsuperscript{2}. Only children with complete data for all three indices were included in the main analysis.

The predictive value for inpatient death was determined as the area under the receiver operating characteristic (ROC) curves with 95% confidence intervals (CIs) using the rocab and roccomp (a test) commands in STATA version 8.0 (Stata Corp, College Station, Tex).

The sensitivities\textsuperscript{7} and specificities\textsuperscript{7} of commonly used cutoff values were investigated, as well as the clinical data for differences between children identified as severely malnourished by the MUAC and WHZ methods. Since the WHO recommends that children be treated for severe malnutrition if they have severe wasting or kwashiorkor, the investigators evaluated the positive and negative likelihood ratios for death for each of MUAC, WHZ, and visible severe wasting combined with (and/or) kwashiorkor.

**Prediction of inpatient mortality**

The case fatality rate among children admitted with WHZ less than or equal to –3 was 19.9% (151/756). The case fatality rate among admitted children with MUAC less than or equal to 11.5 cm was 19.0% (166/873) and did not significantly vary with age.

The areas under the receiver operating characteristic curves for predicting inpatient death did not significantly differ between MUAC (0.75, 95% confidence interval, 0.72-0.78) and WHZ (0.74, 95% confidence interval, 0.71-0.77) (P = 0.39).

Sensitivity and specificity for subsequent inpatient death were similar for WHZ, MUAC and visible severe wasting: 46% and 91%, respectively, for MUAC less than or equal to 11.5 cm, 42% and 92% for WHZ less than or equal to –3, and 47% and 93% for visible severe wasting. However, the 3 indices identified different sets of children and were independently associated with mortality.

Clinical features of malnutrition were significantly more common among children with MUAC less than or equal to 11.5 cm than among those with WHZ less than or equal to –3.

Visible severe wasting was present in 9.0% (608) of 6727 children assessed. The median age of children with visible severe wasting was 24 months (interquartile range, 18-35 months). Of the 608 children with visible severe wasting, 22.5% (137) died, compared with 2.5% (153/617) without this sign (sensitivity, 47%; specificity, 93%).

The positive and negative likelihood ratios for death for WHZ less than or equal to –3 and/or kwashiorkor were 4.36 (95% CI, 3.95-4.84) and 0.47 (95% CI, 0.41-0.53), respectively; those for MUAC less than or equal to 11.5 cm and/or kwashiorkor were 4.49 (95% CI, 4.19-5.84) and 0.59 (95% CI, 0.54-0.65); and those for visible severe wasting and/or kwashiorkor were 5.31 (95% CI, 4.71-5.97) and 0.46 (95% CI, 0.40-0.53).

A multivariable logistic regression model adjusted for age and sex showed that MUAC, visible severe wasting, and kwashiorkor were all independently associated with inpatient death.

**Predicting the current WHO criterion for severe wasting**

For detecting the WHO standard criterion for severe wasting (WHZ –3), the sensitivity and specificity of MUAC less than or equal to 11.5 cm were 65.1% (486/746) and 94.8% (703/746), respectively. The sensitivity and specificity of visible severe wasting for WHZ-3 were 52.6% (320/608) and 95.3% (5831/6119) (P<0.001), respectively. Of 608 children with WHZ less than or equal to –3, 29.3% (178) did not have visible severe wasting or MUAC less than or equal to 11.5 cm.

**Differences in children identified by MUAC and WHZ**

Comparing children with a MUAC less than or equal to 11.5 and those with a WHZ –3 (univariate analysis), the MUAC group were more likely to be stunted, female, and to have a longer history of illness, cough, diarrhoea, subcutaneous oedema, visible severe wasting, kwashiorkor, moderate anaemia, and bacteremia.


\textsuperscript{2} The WHO defines severe malnutrition requiring hospital admission as weight-for-height z scores (WHZ) of less than or equal to 3 or as less than or equal to 70% of the reference median using US National Centre for Health Statistics (NCHS)/WHO reference values (severe wasting) or symmetric oedema involving at least the feet (oedematous malnutrition, kwashiorkor).

\textsuperscript{3} Because of the recognised difficulties of measuring weight for height, the WHO Integrated Management of Childhood Illness programme for primary-care level care makes use of the clinical sign of visible severe wasting.

\textsuperscript{4} Muscle loss manifested as a wasting of the gluteal area and as the presence of a bony prominence over the chest wall.

\textsuperscript{5} Centres for Disease Control and Prevention, Atlanta

\textsuperscript{6} Sensitivity was defined as the number of inpatient deaths among children with anthropometric measures equal to or below a cutoff value, divided by the total number of inpatient deaths.

\textsuperscript{7} Specificity was defined as the number of children discharged alive with anthropometric measures above a cutoff value, divided by the total number of children discharged alive.
Although the median ages appeared similar, the distribution of ages also significantly differed between the 2 groups.

Multivariable analysis showed that skin/hair changes associated with recent kwashiorkor, bipedal oedema associated with current kwashiorkor, stunting, subcutal indrawing, no history of seizures, female sex, and younger age were independent associations of having MUAC less than or equal to 11.5 cm, rather than WHZ less than or equal to –3.

Comment

The study found that MUAC performed as well as WHZ in predicting inpatient mortality in this context. MUAC, inexpensive, more commonly available, does not require a chart to calculate, and is easier to measure than WHZ, the authors suggest it may be a useful screening tool for such children. However, there were differences in the groups of children identified by these methods, and they independently predicted inpatient death. The study observed statistically significant, independent associations of age and sex with WHZ, but not MUAC. They also suggest that the association of a number of other clinical characteristics, e.g. bipedal oedema and skin/hair changes among children with MUAC less than or equal to 11.5 cm, may mean MUAC is a better indicator of severe malnutrition than WHZ in this setting.

Visible severe wasting was as useful as anthropometry in this study in detecting severe acute malnutrition. The authors suggest subjective clinical assessment by trained staff in this setting is appropriate, ideally supported by an objective measure such as MUAC, to allow standardization between centres and classification of the degree of malnutrition.

Since visible severe wasting did not predict WHZ less than or equal to –3 as well as MUAC, MUAC may be better in identifying less severely ill children in need of nutritional rehabilitation.

The main limitations of this study are that it was performed at only one site and that varying malaria transmission and HIV prevalence may influence observations. Also, there was no systematic follow-up of deaths post-discharge.

Conclusions

Given their findings, as well as cost and practicalities, the authors suggest that MUAC may be more appropriate than WHZ for identifying severe malnutrition in children aged between 1 and 5 years who are admitted to an African district hospital. However, an assessment that includes MUAC, WHZ, and visible severe wasting increases the number of at-risk children who are identified on admission and highlights those in overlapping groups who are at the greatest risk of dying. They suggest further studies are needed to evaluate MUAC and visible severe wasting in other operational settings and other situations in which anthropometric assessment is difficult to perform.

Review of Training Opportunities in Nutrition and Food Security

NutritionWorks (NW) has been running courses on nutrition in emergencies in the UK since 1999, working in partnership with the International Health Exchange (IHE), Merlin and the Liverpool School of Tropical Medicine. In order to assist in developing strategic priorities, NW commissioned a review to identify potential gaps in nutrition training, both for emergency and development contexts and partnerships. The review also considered potential networks (northern and southern) with which NW could consider collaboration to advance new nutrition training initiatives, as well as potential funding agencies or institutions interested in future training initiatives.

The review focused primarily on the gaps in nutritional capacity building, limiting any regional focus to Sub-Saharan Africa. Approximately forty individuals were interviewed on their experience in nutrition capacity development, analysis of gaps and recommendations for filling those gaps. A workshop was also held with academic, NGO and partner staff in which a prioritisation of the major gaps in terms of subject and target audience was made. The main findings of the review are described below.

Despite the large number of training courses which currently exist in nutrition, very few of these enable field workers and managers, particularly government staff and national staff of international or national NGOs, to be responsible for nutrition policy and programming. In part this is due to the geographical location of the majority of the most effective courses – the courses being held outside of the areas most in need – and in part because there is a major capacity deficiency of trainers for regional courses. Furthermore, there is limited coordination between those running the courses, particularly amongst the international agencies. Trainers themselves have limited shared resources in materials (e.g. an interagency CDRom) and many opportunities are missed, e.g. not including experienced people from the field and/or training participants to be trainers within the existing courses. However a determination exists to improve the sharing of materials and reduce potential wastage of resources. It is recommended that an outside facilitator or organisation with a coordination mandate would be best placed to undertake this.

Findings showed that many training courses lack a needs and employment assessment, particularly of the organisational needs as well as those of the individual to be trained. This in turn limits the accountability on the part of both the organisation and individuals to take for their own purposes in training and part of the training. Short courses are rarely followed up in any way.

The audiences prioritised by the review for training were local NGO/government staff, managers, nutrition graduates and the trainers themselves. The primary subject gaps were considered to lie in the capacity to undertake nutrition and food security assessments and interpret the results, to develop nutrition policy and undertake planning; to monitor and evaluate nutrition programmes and, amongst senior managers, to understand where nutrition fits into policy and programming.

The need for more decentralised satellite courses was strongly emphasised during the workshop. These should be annual, last for up to three weeks, include field work, be competency based around the participants’ work needs and include elements for non-technical managers. The courses should be targeted primarily towards national staff of the regional countries. The courses could either be established within, for example, one East African University or be a roving course between countries (and universities). Trainers must be regionally based with strong facilitation skills. There should be dual objectives of not only sharing knowledge and practice between the NW and the participants, but also in capacity development.

Areas in capacity development still requiring further research include determining how organisations can work successfully in partnership; how institutions willing to make change can be targeted; how mentoring and support through apprentice schemes can be set up following on from short courses and how academia can be better linked with practice and implementation.

For further information, contact NutritionWorks, P.O. Box 42284, London E7 1FY, UK. Email info@nutritionworks.org.uk

1 Available courses have been listed by the ‘Training Initiatives for Capacity Development in Emergency Nutrition’ sub-group of the ‘Nutrition in Emergencies’ working group within the UN Standing Committee for Nutrition and by the British Nutrition Society. A summary of these can be found in the full report submitted to NutritionWorks.
Antioxidant Role in Preventing Kwashiorkor

Summary of published research

A recent study set out to evaluate the efficacy of antioxidant supplementation in preventing kwashiorkor, in a population of Malawian children at high risk of developing kwashiorkor. It has long been proposed that kwashiorkor results from an imbalance between the production of free radicals and their safe disposal. The theory is supported by the observations that blood concentrations of vitamin E derivatives - glutathione and red cell antioxidant enzymes - are lower in children with kwashiorkor than in marasmic children. Associations between oxidative stress and kwashiorkor indicate that antioxidant depletion may cause kwashiorkor and its onset may, therefore, be prevented with antioxidant supplementation.

The study was a prospective double blind, placebo controlled trial, randomised by household and conducted in eight villages in rural southern Malawi. Overall, 2,372 children aged 1-4 years in 2,156 households were enrolled and 2,332 children completed the trial. Children received daily supplementation with an antioxidant powder containing riboflavin, vitamin E selenium and N-acetylcysteine in a dose that provided about three times the recommended dietary allowance of each nutrient, or a placebo, for 20 weeks. The primary outcome measure was the incidence of oedema. Secondary outcome measures were the rates of change for weight and length and the number of days of infectious symptoms.

A total of 62 children developed kwashiorkor (defined by the presence of oedema), of whom 3.3% (39/1184) were in the antioxidant group and 1.9% (23/1188) were in the placebo group (relative risk 1.70, 95% confidence interval 0.98 to 2.42). The two groups did not differ in the rates of weight or height gain. Children who received antioxidant supplementation did not experience less fever, cough, or diarrhoea. Antioxidant supplementation at the dose provided did not prevent the onset of kwashiorkor. This finding does not support the hypothesis that depletion of vitamin E, selenium, cysteine or riboflavin has a role in the development of kwashiorkor. The study suggests that antioxidant depletion may be a consequence rather than a cause of kwashiorkor.

The authors concluded that in addition to dietary and nutritional investigations, genetic mapping techniques to delineate host factors may prove useful to unravel the enigma of kwashiorkor.

The antioxidant powder is mixed with water to make an orange coloured and flavoured drink.

Dependency and Humanitarian Relief

Summary of research report

In many emergency contexts, aid agencies hesitate to provide food and other aid for extended periods because of fears that this may create ‘dependency’. A newly published HPG research report explores what ‘dependency’ means in a humanitarian context, how the term is used and the implications this has for how relief is provided.

The paper sets out how dependency is:

- generally seen as negative and to be avoided
- associated with the provision of relief, and contrasted with development approaches
- seen as undermining people’s initiative
- contrasted with a variety of positive values or terms, notably independence, self-sufficiency, self-reliance and sustainability, and
- seen as a particular problem when relief assistance has been provided over a prolonged period.

According to the report authors, there are four main ways in which the term is used:

i) Relief risks creating a ‘dependency mentality’ or ‘dependency syndrome’ in which people expect continued assistance. This undermines initiative, at individual or community levels.

ii) Relief undermines local economies, creating a continuing need for relief assistance and trapping people in chronic dependency on outside assistance.

iii) Dependence on external assistance is viewed as one of the features of extreme poverty, associated with a sense of shame or defeat.

iv) Dependence on relief resources on the part of governments - at local or national levels, warring parties or aid agencies.

The research report draws a number of important conclusions:

People depend less on relief than is often assumed. There is little evidence that relief undermines initiative, or that its delivery is reliable or transparent enough for people to depend on it. In practice, many concerns about dependency seem to stem from a preoccupation with the disincentive effects of food aid. Framing these real concerns in terms of dependency is unhelpful because this can provide an excuse for cutting back relief for people who may still be in desperate need. The more important question is what forms of assistance are most appropriate to prevent hunger, save lives and alleviate suffering. In situations where people’s lives and livelihoods are under acute threat, and local capacities to cope with crisis are overwhelmed, being able to depend on receiving assistance should be seen as a good thing. The focus should be not on how to avoid dependency, but on how to provide sufficiently reliable and transparent assistance so that those who most need it understand what they are entitled to, and can rely on it as part of their own efforts to survive and recover from crisis.

Discourses around dependency often blame the symptom, rather than the cause. Relief aid has often been the most visible, if not the only, form of international engagement in long-running crises. In these contexts, there is a tendency to criticise relief for failing to improve the situation, and enabling a movement towards recovery or development. Yet humanitarian aid may be a wholly inappropriate instrument for that purpose. The problem lies not with relief and its failings, but with the lack of other forms of international engagement with crises.

Relief should not be withheld without solid evidence that the needs which prompted it in the first place have been met. This is not to imply that agencies should ignore the potentially negative effects of aid, but it does suggest a need for caution about how the label ‘dependency’ is applied, and how it is used to justify reductions in relief.


Cash and Vouchers in Emergencies

Summary of published paper

A recently published discussion paper examines the use of cash and vouchers to provide people with assistance in emergency situations. It is based on a critical review of existing published and grey literature, discussions with aid agency staff and a survey of project documentation from recent and ongoing cash- and voucher-based responses.

The literature review threw up two principal findings. While cash and voucher approaches remain largely under-utilised in the humanitarian sector, there is a growing amount of experience with cash and voucher approaches, and a sense that the absolute dominance of commodity-based approaches is beginning to erode.

The paper focuses on cash grants, cash for work and voucher programmes, where the cash or voucher is given to individual households, not to communities or governments. The study attempts to address the question of where cash and vouchers are suitable in the full range of emergency contexts. The main findings of the review are as follows;

Some of the theoretical fears about the drawbacks of cash have not been borne out in practice, for example, people rarely use cash for anti-social purposes, and women are not necessarily particularly disadvantaged by the use of cash rather than in-kind approaches.

Vouchers can be exchanged to purchase commodities from traders, at distribution outlets, markets or special relief shops. Voucher programmes may require more planning and preparation than the distribution of cash (agreements need to be reached with local traders, for example, and ‘seed fairs’ at which vouchers can be exchanged take time to set up). If vouchers are not providing goods that people see as priorities, then a parallel market may well develop, with vouchers being traded for cash at a discounted price. Evaluations comparing vouchers and commodity approaches have been broadly positive, emphasising that vouchers give people more choice and can have positive effects on local markets. Where voucher approaches have been compared to cash, however, questions

have been raised about whether the additional administrative burden that managing a voucher programme imposes for the implementing agency is worthwhile. Donor constraints and reservations about cash seem to play an important role in discouraging agencies from switching from vouchers to cash, even where this might be appropriate.

There may, however, be situations in which voucher approaches are more appropriate than cash, such as when cash raises particular security difficulties which vouchers would not, where there is a need to restrict support to a particular type of commodity, or where markets have been weakened and need revitalising.

It often seems that aid agencies are reluctant to consider cash because of concerns about its appropriateness, because agency policies or staff skills preclude it or because funding for cash or voucher approaches is not available. Getting cash and vouchers onto the humanitarian agenda and into the humanitarian toolbox would mean moving away from resource-driven assessments. As a first step, it would be encouraging to see agencies explicitly considering a range of intervention options as part of the assessment process. Issues around the appropriateness of cash divide fairly neatly into two categories: practical questions around its feasibility and economic questions around the ability of local markets to respond. In order to make judgements about the economics of cash and voucher responses, agencies therefore need to improve their capacity to assess local markets. The tools to do this already exist, the challenge is getting these tools into manuals and standard assessment checklists, and making market analysis a routine part of the assessment process.

The existing documentation of cash- and voucher-based responses shows that they are overwhelmingly successful in terms of their impact. People spend the money they are given sensibly, cash projects have not generally resulted in sustained price rises and women have been able to participate and have a say in how cash is spent. Cash responses have usually been found to be more cost-effective than commodity-based alternatives.

The body of experience that these conclusions are drawn from is still small and there is a need for caution. There is still only limited evidence about the likelihood of inflationary impacts if cash and voucher projects were to be implemented on a larger scale. There is also only limited evidence about their feasibility in complex emergencies. What experience there is strongly suggests, however, a case for the further development of cash- and voucher-based approaches and for piloting their application on a larger scale.

In many of the contexts in which humanitarian agencies work, there are clear concerns about putting cash into conflicts and predatory political economies. However, evidence from existing projects suggests that ways can be found to deliver and distribute cash safely, even in conflict environments. Indeed, in some situations, cash has been less prone to diversion than alternatives. Cash is both highly portable and not necessarily as visible as large-scale commodity distributions. Innovative ways have been found to minimise the risks of insecurity and corruption, and evaluations have found little evidence of insecurity or corruption relating to cash-based approaches. Since much of this evidence is context-specific, one of the generic lessons is probably the unsurprising point that there is a need for a locally nuanced understanding of particular security risks. For example, in Afghanistan and Somalia, it has been possible to use the local hawala (money transfer) system to distribute cash. In Ethiopia, the Children take out insurance coverage against losses in transporting cash to projects in areas where there are no banks.

Proponents of cash and voucher-based responses also argue that cash can be an intrinsically more dignified way to provide assistance. Recipients of cash tend to prefer it to alternatives because of the greater flexibility and choice that it provides.

The way in which the architecture of the humanitarian system is currently structured seems to inhibit consideration of cash and voucher responses. There is a wider debate about the dominance of food aid in current humanitarian responses and the extent to which this is due to the continued tying of aid to food surpluses in donor countries. Outside of the UN system, there seem to be fewer barriers to considering cash and voucher responses, and NGOs and the Red Cross have led the way in their increasing use.

Conclusions

There is a strong case for investing further in the rigorous evaluation and documentation of cash and voucher based responses, in order to be able to make better informed judgements about their impact. There is also a need for humanitarian practitioners to develop the skills and competencies they need to implement cash and voucher interventions, and for the development of a body of practice and guidelines.

The BHC supervisor talks with a mother, who receives a HBCN kit

Compact Norway has developed a new product called AFYA to be used as a nutrition supplement for households affected by HIV/AIDS and TB in resource poor settings, within the context of Home Based Care (HBC) programmes. Table 1 outlines the nutritional profile of AFYA. The acceptability of AFYA included in two types of HBC kits was tested in a study carried out in Lilongwe, Malawi. The HBC kits used in this study were the Community Volunteer (CV) kit for use by a trained health worker and the Home Based Care and Nutrition (HBCN) kit for use by care takers at home (see table 2).

The main objectives of the study were:
- a) to determine whether AFYA can be used over a long period as a supplement to other foods without creating adverse effects
- b) to investigate acceptability in terms of taste/smell, packaging and practicality of use
- c) to gain feedback on the value of the kit itself and the items in it.

Study design
The study was conducted at two sites in Lilongwe, Likuni and Alinafe, where HBC is supported by CHAM (Christian Hospital Association of Malawi). A total of 75 home based care patients were enrolled into the study. These 75 study subjects were divided into two groups based on the type of the Medeco HBC kit they received. A total of 11 subjects used the Community Volunteer (CV) kit while the remainder (64 patients) used the Home Based Care Nutrition (HBCN) kit. Three packets of AFYA (180 g), containing 840 kcal and approximately one recommended daily allowance (RDA) of vitamins and micro-minerals, were provided to each patient per day.

The acceptability of AFYA was assessed through the use of a patient diary which was completed daily and an AFYA qualitative questionnaire completed every 10 days. Mid-Upper-Arm-Circumference (MUAC) was measured in order to monitor any increase or decrease in weight during the study period. Trained supervisors at Alinafe and Likuni hospitals supported the HBC volunteers through regular quality control visits.

Study findings
Table 3 indicates the age and illness profile of the patients who took part in this study1. A total of 93.2% of the patients managed to consume the recommended daily ration of three packets of AFYA, providing a total of 840 kcal per day. Sixty-two of the patients (86.1%) reported an overall improvement in their health, while 79.7% of the patients said AFYA tasted good and was appetizing. Overall, 70.8% of the patients said that what they liked most about AFYA was its flavour.

At the beginning of the study, only three of the adults were found to be severely malnourished (MUAC <16 cm), 9.3% were moderately malnourished (MUAC >15 and <18.5 cm) while the rest had a normal arm circumference measurement (MUAC >18.5 cm)2. Of the three severely malnourished adults, two died just before the end of the study, while the third patient showed improvements in MUAC by the end of the study. Overall, 82% of the participants registered an increase in weight based on MUAC readings.

Discussion
These findings suggest that AFYA could be used to restore nutritional status among HIV/AIDS and TB patients within the context of Home Based Care. However, it should be noted that this study did not verify whether the observed weight gain was due to both lean and adipose tissue. Lean tissue is the functional tissue that includes major components of the immune system. Sharing of AFYA among family members was limited, suggesting that AFYA may be perceived as a specialised supplement for targeting HBC patients.

The contribution of Medeco CV and HBCN kits to the health and hygiene of the study subjects is very important. As health directly impacts nutrition, the kits will have contributed to the nutritional status of the patients in the study. Due to its compact nature, AFYA can easily be incorporated into a Home Based Care medical kit for HIV programmes in resource poor settings. However, most of the respondents raised concerns about their inability to replenish the Medeco CV and HBCN kits due to lack of money. It is unlikely that families could sustain provision of HBC kits and nutrition supplements without external support.

The composition of AFYA should be flexible and based on latest research findings. The most recent study carried out in Tanzania has shown that some selected vitamins taken in stipulated doses are important determinants for slowing down HIV disease progression and mortality3. These types of study should inform future product development.

For further information, contact Stanley Chitekwe, Nutritionist, UNICEF, email: schitekwe@unicef.org (Stanley Chitekwe was not working with UNICEF at the time of the AFYA project), or Reidar Retzius, Compact AS, Smoget 29, N-5212 Soefteland/Bergen-Norway. Tel: +47 56 30 35 00, fax: +47 56 30 35 40, e-mail: rrr@compact.no, website: http://www.compact.no or

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Table 1  Nutritional profile of AFYA

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Nutrient content/100g</th>
<th>Energy: 1950 kcal/100g</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbohydrate</td>
<td>54g</td>
<td>1950 kcal</td>
</tr>
<tr>
<td>Fat</td>
<td>37.7%</td>
<td>180 kcal</td>
</tr>
<tr>
<td>Carbohydrates</td>
<td>46.7%</td>
<td>180 kcal</td>
</tr>
<tr>
<td>Fat</td>
<td>37.7%</td>
<td>180 kcal</td>
</tr>
<tr>
<td>Protein</td>
<td>15.6%</td>
<td>180 kcal</td>
</tr>
</tbody>
</table>

Table 2  Contents of CV and HBCN kits

<table>
<thead>
<tr>
<th>Community Volunteer Kit (CV Kit)</th>
<th>Home Based Care and Nutrition Kit (HBCN Kit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paracetamol tablets</td>
<td>Oral rehydration salt</td>
</tr>
<tr>
<td>Reomsal</td>
<td>Miconazole</td>
</tr>
<tr>
<td>Lister's Gloves</td>
<td>Condoms</td>
</tr>
<tr>
<td>Hand towel</td>
<td>Gentian Violet crystals</td>
</tr>
<tr>
<td>Bed sheet</td>
<td>Bed sheet</td>
</tr>
<tr>
<td>Cotton wool</td>
<td>Hand towel</td>
</tr>
<tr>
<td>Apron, plastic disposable</td>
<td>Cotton wool</td>
</tr>
<tr>
<td>Thermometer</td>
<td>Gauze pads</td>
</tr>
<tr>
<td>Scissors, surgical straight</td>
<td>Adhesive tape</td>
</tr>
<tr>
<td>Forceps</td>
<td>Wound plaster</td>
</tr>
<tr>
<td>Swab</td>
<td>Gauze bandage</td>
</tr>
<tr>
<td>Gauze pad</td>
<td>Soap bar</td>
</tr>
<tr>
<td>Adhesive tape</td>
<td>Washing detergent</td>
</tr>
<tr>
<td>Gauze bandage</td>
<td>Calamine lotion</td>
</tr>
</tbody>
</table>

Table 3  Profile of AFYA study subjects

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>male</td>
<td>34</td>
<td>45.3</td>
</tr>
<tr>
<td>female</td>
<td>41</td>
<td>54.7</td>
</tr>
<tr>
<td>total</td>
<td>75</td>
<td>100</td>
</tr>
<tr>
<td>Hospital attended</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alinafe</td>
<td>35</td>
<td>46.7</td>
</tr>
<tr>
<td>Likuni</td>
<td>37</td>
<td>49.3</td>
</tr>
<tr>
<td>total</td>
<td>72</td>
<td>100</td>
</tr>
<tr>
<td>Type of illness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV-related</td>
<td>27</td>
<td>37.0</td>
</tr>
<tr>
<td>TB/PTB</td>
<td>38</td>
<td>52.1</td>
</tr>
<tr>
<td>Other, e.g. malaria</td>
<td>8</td>
<td>10.9</td>
</tr>
<tr>
<td>diabetes</td>
<td>73</td>
<td>100</td>
</tr>
</tbody>
</table>
This field article outlines the results of a nutritional study carried out by ACH in Argentina, which highlights how anaemia remains a public health issue, impacting on intellectual development in school age children.

**Prevalence of anaemia**

Anaemia was defined as a Hb value lower than the 5th percentile of the normal distribution, as proposed by the WHO. Hb levels were measured using a portable photometer (Hemocue®). Five areas of intellectual development were explored in the academic survey: attention, concentration, memory, conceptualisation and anticipation. A guiding question was formulated for each of the studied areas (see table 2). Each question required one of three responses, ‘Very Frequently’, ‘Frequently’, and ‘Rarely’, which were given scores of 3, 2 and 1 points, respectively. The sum of these points gave the Global School Performance.

**Results**

A total of 1089 children were included in the Homes group, 218 children in the Centres for Evacuees, and 626 children in the School group. With regards to the biochemical variable, anaemia was a highly relevant problem in all of the studied groups, significantly more so in Homes and Centres for Evacuees (children aged 6 to 71 months) when compared with the school group (see graph 1). However, it stands out that anaemia in the infantile population prevailed in the Centres of Evacuees compared to the one found in Homes, despite corresponding age groups (p=0.007). The most affected group were children less than 2 years old, where the proportion of anaemia reached 48% in homes and 61.5% in evacuee centres. There was also a statistically significant association in the home sample between anaemia and overcrowding (p=0.02) and anaemia and conditions of the house (p=0.002). In the School survey, the group of children who were older than the normal age for their course had a higher prevalence of anaemia than the group of normal age for their course (p=0.009) (see graph 2). Sixty percent of children were classified as having low school performance. The percentage of children with low school performance was significantly greater amongst those with anaemia compared to the non-anaemic ones (p=0.024) (see graph 3). The functions most affected in relation to anaemia were those of conceptualisation (p=0.0009), anticipation (p=0.023) and memory (p=0.032).

### Table 1 Sample selection

<table>
<thead>
<tr>
<th>Scope</th>
<th>Population</th>
<th>Design</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homes</td>
<td>Children aged between 6 and 71 months</td>
<td>Representative sample, auto-weighted stratified by conglomerates (40 sample Primary Units)</td>
<td>Provincial Institute of Statistics and Censuses</td>
</tr>
<tr>
<td>Centres for Evacuees</td>
<td>Children aged between 6 and 71 months</td>
<td>Exhaustive study, including all centres for evacuees (23)</td>
<td>Secretariat of Communitarian Promotion - Santa Fe Municipality</td>
</tr>
<tr>
<td>Schools</td>
<td>First-grade students (aged between 6-7 years old)</td>
<td>Exhaustive study, including all flooded schools (14)</td>
<td>Ministry of Education - Santa Fe Municipality</td>
</tr>
</tbody>
</table>

### Table 2 Academic Survey Questionnaires

<table>
<thead>
<tr>
<th>Areas</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention</td>
<td>The Pupil has difficulties in holding the attention during classroom work?</td>
</tr>
<tr>
<td>Concentration</td>
<td>The Pupil DOES NOT finish a task that he/she has started and goes from one incomplete activity to another one?</td>
</tr>
<tr>
<td>Memory</td>
<td>The Pupil easily forgets school contents and/or what he/she remembers is deficient, nothing or inexact?</td>
</tr>
<tr>
<td>Conceptualisation</td>
<td>The Pupil has difficulties in solving problems and comprehending tasks?</td>
</tr>
<tr>
<td>Anticipation</td>
<td>The Pupil shows difficulties following the required steps to develop a task?</td>
</tr>
</tbody>
</table>
Discussion

This study demonstrates the significance of anaemia as a public health problem in traditionally affected groups, such as children less than 2 years old and pre-schoolers, as well as school-age children. Furthermore, there appears to be a strong linkage between anaemia, learning capacity and school performance.

The findings of this survey support another recent study by ACH in a population of children less than 6 years of age in the province of Tucumán. Here, nutritional deficiencies, in conjunction with other poverty related factors, are showing to have a significantly adverse impact on neurodevelopment. These preliminary findings in turn, concur with other population studies in Argentina and elsewhere in the Latin America region and argue for types of nutritional interventions which are more oriented towards establishing balanced diets, than many of the current activities which focus largely on satisfying calorific needs.

Finally, the use of a rapid method for the determination of haemoglobin levels (Hemocue) constitutes a highly effective method for detection and treatment of an otherwise hidden form of under-nourishment, i.e. iron deficiency anaemia. The method and study findings should help convince programme designers of the need and feasibility of systematically assessing nutritional anaemia in at risk groups, specifically in relation to growth and neurodevelopment.

With the knowledge of these results, ACH, in coordination with local health and school authorities in Santa Fe, initiated a programme of weekly supplementation with ferrous sulphate for children less than 6 years of age and first-graders. The results of this intervention will be written up and disseminated in the near future.

For further information, contact Adrián Díaz, email: adiaz@ach-argentina.org.ar or Gabriela Cormick, email: gcormick@ach-argentina.org.ar

Care Practices in Emergencies

The constitution of a sub-group on ‘mental health and care in emergencies’, of the thematic group Nutrition in Emergencies, was validated at the 2004 UN Standing Committee for Nutrition (SCN) meeting in Brasilia. In preparation for SCN 2006, the sub-group are gathering information about the spectrum of programmes that include or target the care practices linked to malnutrition in emergencies. Specifically, the group wishes to:

- Compile details of mental/social support given by agencies in nutritional programmes, to direct future activities in the area
- Investigate these interventions in order to recommend the most effective, efficient and locally adapted ways to address care practices in emergencies.

A brief questionnaire has been prepared and is available from Cécile Bizouerne, Psychologist in charge of the mental health and care practices projects, Action Contre la Faim, 4, rue Niepce, 75 014 Paris, France Tel: 01 43 35 88 82, email: cbizouerne@actioncontre-lafram.org

**Graph 1** Prevalence of Anaemia according to Placement

Note: In Homes and Centres study, children aged from 6 to 71 months

**Graph 2** Percentage of Anaemic First-graders According to Age During the School Year

**Graph 3** Prevalence of Anaemia according to global academic performance

- At time of writing, the results were not completed but will be available from ACH towards the end of 2005.

Flood affected people in one of the camps in Santa Fe

A recovering child from the TFC enjoying football

Infants in the TFC playroom in Afghanistan
New Guide on Cash-Transfer Programming in Emergencies

In a food crisis, distributing cash in a targeted manner can often meet people’s immediate needs more quickly and appropriately than providing food aid or other commodities. Cash gives people choice and preserves their dignity. Commodity distribution poses logistical problems, and food aid may disrupt local markets if food is available locally. There is a growing consensus amongst humanitarian actors that cash is an appropriate intervention when food or other essential commodities are available locally, and markets are functioning. But fears remain among many humanitarian agencies that cash transfers will pose security risks and not be used to meet basic needs. A new guide by Oxfam on Cash Programming in Emergencies addresses many of these issues. In this guide, the first of its kind, Oxfam staff present the rationale behind cash-transfer programmes, compare cash grants, vouchers, and cash-for-work, and describe the practical steps in the implementation of each. They draw on Oxfam’s wide experience of operating such programmes in Africa, Asia and Latin America, including the recent responses to the devastation caused by the Indian Ocean tsunami in December 2004.

The aim of the guide is to support the implementation of cash programmes. It is divided into two parts. The first part covers the planning of cash interventions. This includes the reasons why and when cash is an appropriate response to meet basic food and non-food needs, as well as livelihood needs, in many emergency contexts. It gives basic checklists for assessments, in particular for assessing markets. Part two also covers criteria for determining whether cash grants, cash for work, or vouchers are the most appropriate type of cash intervention. Part two gives guidance on the implementation of different types of cash programmes. Grants, cash for work and vouchers are covered in one chapter each. Each chapter follows a similar format, and includes practical information on planning the intervention, selecting beneficiaries, setting pay rates (or size of grant, value of voucher), transferring cash, staff and management requirements, monitoring and evaluation.

The guidelines are primarily intended for NGO personnel, such as humanitarian programme managers, food-security specialists, public-health engineers, finance staff, and logisticians. Policy makers in donor organisations and international agencies will also find them relevant.

A trial edition has been produced before final publication to get feedback from field workers and academics. The review process will be completed by the 19th of August 2005, after which the final version of the guide will be published as a book in Oxfam’s Skills and Practice Series in January 2006.

If you would like to pre-order copies of the guide, please contact the Oxfam publishing team on email: publish@oxfam.org.uk, or through their website: www.oxfam.org.uk/publications. Alternatively, contact Oxfam Publishing, Oxfam GB, Oxfam House, John Smith Drive, Cowley, Oxford, OX4 2JY, UK. Tel: + 44 (0)1865 473727

Call for Trustee Nominations for ENN

Over the past four months, the ENN has undertaken a funding review, to explore options around long-term sustainability. The ENN originally arose out of a collaborative inter-agency initiative and has continued as a jointly owned multi-agency partnership. It has been supported over the years by a wide variety of bilateral donors, and an increasing number of UN agencies and NGOs.

In this review, the ENN has consulted with supporting agencies, to explore other avenues of funding to try and place Field Exchange and other ENN activities under a more secure funding arrangement. So far, the feedback and support from agencies has been positive and constructive and a number of avenues are being explored. As part of this ongoing process, a key decision has now been taken by the ENN directors for the ENN to apply to register as a charity in the UK. This will open up funding opportunities, has tax advantages, and, in subjecting the ENN to the scrutiny of the Charities Commission, further strengthens our accountability to Field Exchange stakeholders and readership.

We therefore invite nominations for the positions of ENN trustees to comprise the ENN trustee board. This is an unpaid role and requires considerable investment of time, as well as a strong sense of belief in the ethos and role of the ENN. The specific role of trustees, as laid down by the Charities Commission, can be accessed at http://www.charitycommission.gov.uk/rece nt_changes/CC3_the_essential_trustee.asp

Anyone who would like volunteer, make a nomination or discuss this further can contact: Marie McGrath, email: marie@ennonline.net, tel: +44 (0)1865 249745, or Jeremy Shoham, email: jshoham@easynet.co.uk, tel:+44 (0)208 4469286
New CD of IFE Training Materials

A CD-Rom of training materials on Infant Feeding in Emergencies is now available from ENN. Both Module 1 for emergency relief staff and Module 2 for health and nutrition workers in emergency situations are included, along with key documents such as the Operational Guidance for Emergency Relief Staff and Programme Managers, and the WHO/UNICEF Global Strategy for Infant and Young Child Feeding.

Feedback on use of the CD, suggestions on other materials to include, and requests for copies should be sent to Marie McGrath, Emergency Nutrition Network, Unit 13, Standingford House, Oxford, OX4 1BA, UK. Tel: +44 (0)1865 722866/240745, email:ife@ennonline.net

Alternatively, you can make your own CD directly from the following link on the ENN website: http://www.ennonline.net/ife/cddownload/index.html

European Emergency Food Security Group (EEFSG)

This overview of the EEFSG and report on the recent Dublin meeting was prepared by Niall Cassidy, Concern Worldwide, in consultation with the meeting participants.

Concord is the Confederation of European Relief and Development non-governmental organisations (NGOs). Its 18 international networks and 20 national associations from the European member states represent more than 1500 European NGOs vis-à-vis the European Parliament. It attempts to enhance the impact of development NGOs at European level, by combining expertise and accountability and through promoting clear strategies, policy and budgetary influence to influence the institutions and member state governments. Concord co-ordinates co-operation among NGOs in order to influence policy formulation on development and humanitarian issues at EU level and promotes the political interests of European NGOs as strategic partners of the EU and the Member States. It also strengthens the quality of NGO work, particularly regarding the relationship with civil society in the South, and contributes to capacity building at NGO level by stimulating new synergies based on sharing, co-operation and consultation.

The work of the Confederation is carried out by its members, who are split into specific working groups depending on their experience. These include groups on trade, aid, and the European Food Security Group (EEFSG). The EFSG was convened by the European network, EuronAid, and is chaired by Tom Arnold, Chief Executive Officer of Concern and former member of the Hunger Task Force of the UN.

The establishment of the EEFSG

At the beginning of 2005, the EFSG ‘earmarked’ the year as heralding in a critical period for the future of food security policy, given the World Trade Organisation (WTO) negotiations in Hong Kong, the reorganisation of EU budget lines, and developments within the World Food Programme (WFP). With these in mind, they decided to establish a specialised task force on emergency food security issues, the European Emergency Food Security Group (EEFSG). The EEFSG is a small and focused group of food security and nutritional experts, drawn from NGOs with direct operational experience of emergency food security – Save the Children UK, Action Contre la Faim, Concern, Oxfam and German Agro-Action.

The ultimate objectives of the group are to influence policy debate and formulation at the highest levels, and to promote better practice and analysis of emergency food security situations - by both NGOs and international agencies. Though still in its infancy, the group has already played an important role this year in feeding into the WFP’s new strategic plan, and has also established links with other key stakeholders in the field.

Dublin meeting

The EEFSG meets on average four times a year, with the latest meeting taking place in Concern’s headquarters in Dublin on Wednesday September 7th 2005. This meeting was convened by the members in order to focus on a number of current key food security issues. In particular, the group addressed the increased promotion of School Feeding Programmes (School FPs) by international donors. In the discussion on School FPs whilst the members did not rule out the use of them completely, they did highlight a number of concerns they have:

• If School FPs ’attract’ children to come to school in the short term, does this effect wear off in the medium to long term?
• Some members felt that School FPs suffer from mixing nutritional and educational objectives, and in the process fail to address either as well as specialised programmes might do.
• It was suggested that real nutritional improvement could only be a result of an integrated package of support in terms of water, sanitation and health.

Whilst School FPs might increase both enrolment and attendance rates, they fail to address the underlying question of education quality.

User Friendly Software to Design Low Cost Complementary Feeding

Complementary feeding of older infants and young children continues to present a real challenge to field workers. Practical questions typically faced in the field by nutritionists working in developing countries include:

• Is it possible with locally available food to provide all nutrients needed by a young child?
• What quantity of nutrient rich foods are needed to provide all micronutrients?
• If this is possible, how much will it cost?
• What food combination is best adapted to provide all needed nutrients at the lowest cost?
• Are micronutrient supplements or fortified foods useful to feed a child a balanced diet at low cost?

Now, adapting local foods to meet nutrient needs can be aided by a mathematical tool, linear programming. The user-friendly programme (Linear Programming Module of Nutrisurvey) can be downloaded at http://www.nutrisurvey.de/lp/lp.htm and allows download at http://www.ennonline.net/ife/cddownload/index.html

Alternatively, you can make your own CD directly from the following link on the ENN website: http://www.ennonline.net/ife/cddownload/index.html

The EEFSG meets on average four times a
Renewed Call to Share Knowledge on Community Driven Initiatives

At the IFPRI conference on HIV/AIDS and Food and Nutrition security in Durban in April 2005, preliminary work was presented on capturing and documenting community driven initiatives (CDI), and was well received by those attending. Building on an initial call for a web-based living inventory, the Food and Agriculture Organisation (FAO) and the United Nations System Standing Committee on Nutrition (CSSCN) have renewed an invitation to stakeholders to become involved and share their knowledge on community driven initiatives. Based on the response, FAO will decide if there is sufficient interest to continue this effort.

In responding, the type of information to include is:
- Where is the Community Driven Initiative (CDI) taking place?
- Describe the CDI

Collecting Evidence for Community Based Treatment of Severe Malnutrition

The Child and Adolescent Health Department and the Department of Nutrition for Health and Development of WHO, in collaboration with the Standing Committee for Nutrition of the United Nations System, have begun the process to formulate recommendations on the community based management of severe malnutrition. This has largely come about with the increased attention on community based treatment over the last five years with the development of Ready to Use Therapeutic Foods (RUTF).

As part of this process, an evidence database is being systematically compiled, building on the findings of a previous literature review made in 2001 for WHO and a recent initial literature search. The team is calling for relevant studies to add to these. Priority is given to studies published in peer reviewed journals, however, WHO can assist in the preparing for publication the results of relevant but still unpublished studies.

This evidence gathering is not limited to agencies with community based programmes using RUTF - contributions from other agencies using different community based programmes to treat severe malnutrition are welcome.

To find out more and take part in this process, contact Claudine Prudhon, United Nations System Standing Committee on Nutrition, c/o World Health Organisation, 20 Avenue Appia, CH 1211 Geneva 27, Switzerland Tel: +41-22-791-34-81, Fax : +41-22-798-88-91, Email: prudhonc@who.int, csscn@who.int

WHO Guiding Principles on Feeding Non-Breastfed Infants

WHO has just issued a booklet, Guiding Principles for Feeding non-breastfed infants, 6-24 months of age, which provides health workers with a grounding in the principles involved in designing and safely feeding diets to young non-breastfed infants. The content includes sections on:
- food consistency, meal frequency, and energy density
- nutrient content of foods
- use of vitamin-mineral supplements and fortified foods
- safe preparation and storage
- responsive feeding, and
- feeding during and after illness.

The annexes contain practical advice on developing locally appropriate feeding recommendations based on these Guiding Principles, and addresses key issues around early breastfeeding cessation, and feeding young children of HIV-positive mothers.

The publication is available online at http://www.who.int/child-adolescent-health/New_Publications/NUTRITION/ISBN_92_4_159343_1.pdf

New FANTA Technical Guide on Measuring Household Food Consumption

Many private voluntary organisations (PVOs) are engaged in projects aimed at improving food security and household nutrition worldwide. Increasingly they are being asked to monitor and evaluate the impact of their interventions. FANTA has completed the 2005 revised edition of Measuring Household Food Consumption: A Technical Guide. The guide describes the process and procedures for collecting information to assess the food-intake requirements of a household and a step-by-step analysis of the food consumed. The newly revised Appendices also provide detailed information about analysing the data.

The publication is available online at http://www.fanta.org/ed/
WTO Negotiations on Improving Food Aid

By Susanne Jaspars and Chris Leather, Oxfam GB

Susanne Jaspars was the team leader for Oxfam’s emergency food security and livelihoods team from October 1998 to June 2005. She has worked in emergency nutrition, food security and livelihoods since 1987 for a number of agencies and has published widely on the subject. Susanne continues to support Oxfam’s food aid advocacy work on a consultancy basis.

Chris Leather is the current team leader for Oxfam GB’s emergency food security and livelihoods team. He has worked in emergency food security and livelihoods since 1987 for Action Against Hunger and now Oxfam.

This article details current negotiations in the World Trade Organisation (WTO) on improving the effectiveness and efficiency of food aid, based on research undertaken by Oxfam GB.

The last months of 2005, and 2006, provide unprecedented opportunities to shape the future of food aid. Negotiations at the World Trade Organisation (WTO) on agriculture in 2005 include a review of food aid disciplines, which will influence the review of the Food Aid Convention (FAC), postponed pending the WTO outcome. WTO rounds are only launched once in 15 years or so, and the Food Aid Convention was last revised in 1999. The final WTO ministerial meeting is in December 2005, but negotiations are on-going until then. This article presents an analysis of issues, and Oxfam’s position on the disciplining of food aid under the WTO. Others who have put forward suggestions or concerns on the WTO food aid disciplines include the Coalition for Food Aid (CFA) in the US, WFP, World Vision International (WVI) and the European Commission (EC). This article is intended to stimulate discussion, and to provide the starting point for developing a common NGO position on the WTO food aid disciplines.

The WTO negotiations on food aid are of relevance to NGOs operating on the ground, because these negotiations could change the way in which food aid is provided. Heated discussion is taking place around the role of tied food aid and the role of local purchase (see box for key terms used and key actors involved). Any change in these aspects will affect ration size and composition, the speed of delivery of emergency food assistance, as well as potential impact on production, markets and trade. The emergency nutrition community should have an input in this debate.

Current practice on the tying of food aid

Tied food aid is defined as “…aid which is, in effect, tied to the procurement of goods and/or services from the donor country and/or a restricted number of countries”. In 2004, 74% of food aid was tied aid, 12% were triangular transactions (purchase in neighbouring countries) and 14% were local purchases. Australia, Canada, China, and South Korea provide over 80% tied aid. The US provided 56% of food aid commodities by volume, of which 99% were tied or sourced in the US. Other donors collectively sourced 42% in the donor market.

For the first time in half a century, there are serious, high level discussions in the US and Canada about partial untying or untied food aid. Earlier this year, the US government proposed to reduce PL480 Title II food aid by £300 million (a quarter of the budget) and establish an International Disaster and Famine Assistance account of equivalent value, “to permit USAID to provide food assistance in the most timely and efficient manner to the most critical emergency situations”. This proposal appears to be headed for defeat in Congress, as it ran into fierce opposition from agricultural and shipping interests. The CFA, a coalition of US NGOs, has already announced that it would only go forward if Congress appropriated extra money for food aid.

What are the consequences of tied aid?

It makes it difficult to meet the minimum standards on food aid

The Sphere minimum standards on food aid state that to meet nutritional needs, general ration sizes must provide access to a range of foods, access to micro-nutrients, and eliminate the need for affected people to adopt negative coping strategies. Food items must be appropriate and acceptable to recipients, and can be used efficiently at household level. Furthermore, the introductory section to the food aid chapter states that, “food commodities are imported only when there is no locally available or sufficient levels of these, or if there is no practical possibility of moving available supplies into the disaster affected area.”

Whilst tied aid is not the only problem in ensuring that minimum standards are met, it makes it more difficult for the following reasons:

- It takes up to 4-5 months for food purchased in the US to arrive in the recipient country. If people are totally dependent on food aid in the early stages of an emergency, this can lead to high rates of malnutrition, mortality, and the adoption of damaging coping strategies.
- Commodities are not always culturally appropriate, so disaster affected populations may not know how to prepare the foods.
- Rations may be nutritionally inadequate, as they are often dominated by cereals. Pulses, oil, and blended foods are notoriously difficult to store.
- Foods are often unprocessed or unfortified, which means that disaster affected populations have to make their own arrangements for milling, for example.
- Food aid recipients are more likely to sell unfamiliar food commodities to buy other foods (as well as to buy other basic items, and to pay for milling), making tied food aid an inefficient way of meeting food needs.

It is an inefficient method of providing food aid

Tied aid is a very inefficient way of providing development assistance. The cost of tied direct food aid transfers is, on average, 50% more than local purchase, and this can lead to high prices of commodities supplied as US food aid.

Late arrival of food aid in country may mean it arrives during harvest time, and therefore low prices and the income of farmers. This may increase vulnerability and the need for on-going assistance.

The form of food aid which has the most direct trade implications is programme food, which is aid provided as budget support, for example in the form of concessional sales. It is direct bilateral (government to government) aid. Programme food aid provided by the US has the explicit objective of creating overseas markets.

Is tied food aid needed for development projects?

There are two types of project food aid. First, projects which use food aid for direct distribution to beneficiary groups, such as food for work, maternal and child health, school feeding and the establishment of strategic grain reserves. Second, commodities are sold (mone-tised), and the local currency is used to promote poverty reduction and food security initiatives.

In 2002, about half of all project food aid, channelled through NGOs, was monetised. There is a lack of monitoring and evaluation of project food aid, but findings on the impact of project food aid range from moderately positive to extremely negative.

Food aid that is monetised is not targeted at those most in need and is, therefore, more likely to have negative impacts on markets. Furthermore, NGOs monetise food aid to be able to fund development projects, which is an extremely cumbersome and inefficient way of funding development programmes.

The role of local purchase

When food aid is available in other parts of the disaster affected country, or in neighbouring countries, local purchase could potentially provide a quicker and cheaper response, as well as providing commodities which are more culturally acceptable to the affected population. In addition, it would support the local economy. A computation of the statistical correlation between nations’ annual per capita production of cereals with that of their neighbours found that there was the potential for expanding trian-gular transactions.

Local purchase must be preceded by careful assessment of local markets, to make sure that this does not lead to price increases for consumers in the areas where the food purchased. In some situations, local purchase may be difficult because of limited suppliers, quality of the local products, trader reliability, or weak transport and infra-structure.

The role of WTO in reforming food aid

Currently, food aid is not subject to tight disci-

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2 Barrett, C. (2005,April). Food Aid At A Crossroads; the New Challenge that NGOs Must Address. Presentation to the UN Food Aid Consultancy Group.
4 The Sphere Project, 2004
5 See footnote 1
6 See footnote 2
7 See footnote 3
8 See footnote 4
Oxfam’s position on these issues
Oxfam International has recommended stronger food aid disciplines as part of the WTO agriculture agreements. The recommendations are as follows:

- Food aid is provided exclusively in grant form (i.e. no food aid sales on a concession- al basis).
- Food aid should not be linked, either explicitly or implicitly, to commercial transactions or services of the donor country.
- The use of in-kind food aid (some of which can be sourced in donor countries) should be limited to situations of acute local food shortage and/or non-functioning local food markets in which emergency food aid is not possible. In other situations, food aid should be provided in cash form, to purchase food locally or regionally.
- Monetisation of food aid should be limited and replaced with cash donations, to avoid displacement of local production or commercial imports.
- Food aid should only be provided in response to calls from national governments, specialised United Nations agencies, other relevant regional or inter-governmental agencies, non-governmental humanitarian organisations, and private charitable bodies.
- All food aid transactions must be notified in a timely manner to the Food and Agriculture Organization of the United Nations (FAO) and WTO.

Oxfam believes that food aid is most needed in humanitarian crises, and that the objective of giving food aid in a crisis situation should be to alleviate malnutrition, to meet immediate food needs and to protect livelihoods. Oxfam also believes that the value of project food aid (food for work, school feeding, vulnerable group feeding) to support specific poverty alleviation and development activities is limited, and that this should be discouraged as part of longer-term development projects. Food aid can be effective in development contexts as part of social safety nets and livelihood protection and recovery in slow-onset disasters. In most cases, cash-based programmes or funding for development programmes is a more effective way to address food insecurity. Food aid cannot be a substitute for sustainable development, policy and belief change, which together can reduce hunger in the world in the long-term.

In many humanitarian disasters, cash is a more appropriate response to meet people’s food needs than food aid. Cash transfers (cash grants, cash for work, or vouchers) should be provided to meet food needs in situations where food crisis is a problem of people’s ability to purchase food, and not of food availability. Providing cash to meet food needs is only possible where food markets are functioning and accessible.

Sourcing of food aid, in order of preference, can therefore be summarised as follows:

<table>
<thead>
<tr>
<th>Order of preference</th>
<th>Option</th>
<th>Criteria of appropriateness</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Provide cash directly to beneficiaries</td>
<td>• Food available locally • Markets are functioning</td>
</tr>
<tr>
<td>2</td>
<td>Procurement in recipient country</td>
<td>• Food available nationally • Cheaper and quicker than alternatives</td>
</tr>
<tr>
<td>3</td>
<td>Procurement in region</td>
<td>• Food available regionally • Cheaper and quicker than alternatives</td>
</tr>
<tr>
<td>4</td>
<td>In-kind donations by donor country/tries</td>
<td>• Cheaper and quicker than alternatives • Meet requirements of recipient countries in terms of type of food, GM content, etc.</td>
</tr>
</tbody>
</table>

Key terms, regulations, and players in international food aid

**Emergency food aid:** the distribution of general food rations, supplementary and therapeutic feeding, to meet the food needs of emergency affected populations.

**Project food aid:** development projects which use food aid to food security and which have a number of other non-food related objectives. Projects include food for work, school feeding and vulnerable group feeding through MCH clinics.

**Programme food aid:** aid provided as budget support, for example in the form of concessional sales. It is direct bilateral (government to government) aid.

**Monetisation of Food Aid:** the sale of food aid commodities on the market. The local currency is then used to fund development projects.

**Tied food aid:** aid which is tied to the procurement of goods and/or services from the donor country and/or a restricted number of countries.

**In kind food aid:** Imported food aid, which can be tendered on international markets.

**Food Aid Convention (FAC).** Convention aimed at guaranteeing a predictable flow of food aid every year. The signatories made minimum annual commitments. The FAC was developed in 1967, and is periodically updated with the latest version agreed in 1999. The FAC was scheduled to be re-negotiated in 2002, but has been put on hold pending action on food aid disciplines at the WTO. The 1999 FAC sets minimum aggregate commitments at 5.5 MT, whereas originally minimum commitments were set at 10 MT.

**Coalition for Food Aid (CFA).** Established in 1985, a Washington based lobby group that represents 14 US NGOs.

**US Public Law 480 (PL 480).** Originates from 1954 with three ‘titles’, each facilitating different kinds of food aid; Title I and II are explained below. Title III has not been used recently.

**Title I** provides ‘programme’ food aid to recipient governments. Most Title I food aid is provided in the form of concessional sales, rather than in grant form. Title I is administered by USDA and has a strong emphasis on expanding the export markets. All Title I food aid is monetized. This is the type of food aid most likely to be eliminated under WTO, but only forms a minority of overall food aid.

**Title II** is administered by USAID, and provides for the donation of US agricultural commodities to meet emergency and non-emergency food aid needs. NGOs, the WFP, and governments are eligible for Title II food aid. As much as 70 per cent of non-emergency project food aid is monetized by NGOs or recipient governments to fund development projects.

Note that there are four other US food aid programmes, three of which are administered by USDA, including food for progress and the McGovern-Dole International Food for Education and Child Nutrition Programme.

What is the way forward?
Recommendations on food aid disciplines would be much more powerful if they were the result of a shared NGO vision on the role of food aid.

Oxfam acknowledges some of the concerns expressed by other agencies on the disciplining of food aid. Oxfam are aware that the US CFA has recommended that none of the forms of food aid should be excluded or limited in WTO Doha Round Negotiations (i.e. the current negotiations), but that the WTO should focus on the one aspect of food aid related to trade interests. In contrast, the EC recommends the elimination of all tied food aid, to be replaced by more flexible response mechanisms, in other words to promote the local purchase of food aid. Oxfam believes that the majority of food aid is currently provided in tied form, and that the food aid provided in many emergencies is currently insufficient to meet the estimated needs. Tied food aid cannot be reduced substantially overnight.

Any reduction in tied aid would need to be accompanied by cash resources to purchase at least an equivalent amount of food aid. The lower cost of local purchase would, however, mean that the funds required to purchase an equivalent amount of food aid locally would be much lower. Furthermore, the emergency sector currently does not have the market assessment tools, nor the capacity, to carry out local purchases that would be required, if the new disciplines are adopted. The recommendations for new disciplines would need to be phased in gradually. We hope that this short article can be the starting point for developing a common NGO vision.

For further information, contact Chris Leather, CLLeather@oxfam.org.uk or Suzanne Jaspers, email SJaspers@oxfam.org.uk

To contribute to this debate, contact the authors, or ENN at email: office@ennonline.net
A word from ENN

In Issue 23 of Field Exchange, a letter by Mary Lunga’ho, Lida Lhotska and Rebecca Norton was published highlighting concerns they had regarding potential ENN conflict of interest, with particular reference to the company Nutriset. Nutriset responded with a letter that was published in Issue 24. Linked with this, a letter was submitted to ENN from Noreen Prendiville, published here, raising her concerns. Further communications around this have established that all agree the key issues raised would benefit from a wider, open airing and debate. To this end, a selection of people whom we thought would have an interest and an opinion on the subjects raised, were invited to submit an opinion to ENN. Three responded and their perspectives are published here. We hope that these mark the beginning of an ongoing discussion in which the Field Exchange readership will actively participate. Anyone who would like to feedback, offer an opinion or comment, should email the ENN at marie@ennonline.net.

Dear Editors,

As a follow up to the letter from R. Norton, M. Lunga’ho, and L. Lhotska in Issue 23 of Field Exchange (FEx), I would like to express my concern about the ever increasing prominence given to commercial products in the articles presented in FEx on management of severe malnutrition, and the relative absence of ideas and research on alternative approaches.

Few will argue with the fact that management of severe malnutrition has benefited from substantial research and private sector involvement in recent years; with guidelines for improved regimes and increasing availability of commercial products for foods. These have no doubt helped to decrease mortality and morbidity in acute emergency settings where external resources are available, and have allowed international non-governmental organisations (INGOs) to reach a Gold Standard in the management of severe malnutrition during the period of their intervention.

However, typically in the Greater Horn of Africa, only the very peak period of an ‘emergency’ attracts external attention and interventions. High levels of severe malnutrition are present before INGOs arrive and continue long after the INGOs have left. For the periods when local health services have to manage with minimal support, little is available in terms of guidelines, support or training, to ensure adequate management of severe malnutrition. It is not a coincidence that areas experiencing continued high levels of severe malnutrition today are also those with the lowest levels of humanitarian access. Much as we might hope that this situation will change, it is unlikely to do so adequately in the near future. In the meantime, concerted efforts are needed to support local preparation of appropriate foods at household or health facility level. We should ensure that health workers are well convinced that ‘new’, imported, packaged foods while wonderful, are certainly not essential.

Technical recommendations of INGOs, publications etc. will have far greater credibility in the Horn of Africa and will certainly have the potential for wider application if de-linked from branded products. Nutrition professionals and INGOs need to ensure that their efforts to provide a Gold Standard do not, in any way, undermine the existing Silver and Bronze Standards.

Finally, I believe that we ‘do harm’ when we convince local health workers that externally sourced food products are essential in the management of severe malnutrition in situations where long term uninterrupted access to these items cannot be guaranteed. While I fully appreciate the driving force behind the recent development in management of severe malnutrition, I urge INGOs to support existing capacity to manage severe and moderate malnutrition in a sincerely sustainable way and to exercise extreme caution in the marketing of foods not readily and consistently accessible in resource poor communities. Field Exchange can contribute very positively by ensuring that research and articles on severe malnutrition represent the majority of those involved in this field, who are located in resource poor countries. This is not at all an argument against these new special foods, but a call for a more balanced approach.

Your interest in broadening this discussion has been greatly appreciated.

Noreen Prendiville

Food Security Analysis Unit, FAO Somalia

This letter represents the views of the author and do not necessarily represent the views of FAO.

Dear Editors,

In issue 23 of Field Exchange, a letter by Lunga’ho, Lhotska, and Norton was published highlighting their concerns regarding a potential conflict of interest, with particular reference to the private sector company Nutriset that produces and markets ready-to-use therapeutic food (RUTF) under the brand name of Plumpy‘nut.

Lunga’ho, Lhotska, and Norton do not take a strong ideological position with regard to the involvement of the private sector in humanitarian interventions. This is both sensible and pragmatic. Without the private sector, we would be severely restricted in our work. Many international NGOs receive preferential terms when purchasing essential services and items such as air travel, vehicles, and communication equipment from large multinational corporations. Even without such preferential terms, many such items would still be sourced from these, or similar, corporations. In addition, numerous private sector companies have been established that receive the bulk of their profits from trade with the humanitarian community. Many NGOs purchase items such as airline tickets and insurance from such companies.

The difference between these companies and Nutriset is that none of these companies has a monopoly position in the marketplace. NGOs can source products and services from a variety of competing suppliers but, at present, must source RUTF through Nutriset or one of their partners. Nutriset hold a patent not just on the specific formula for their Plumpy‘nut product, but on spreads and pastes used as RUTFs. The company’s website clearly states: ‘Plumpy’ type products are covered by an IRD/Nutriset patent.

Nutriset have shown themselves to be both willing and able to enforce this patent. This suggests that Nutriset is seeking to maintain a monopoly position with regard to any and all similar products. It is generally accepted that what is good for a monopolist is bad for consumers and the consumers in this case are children in extreme need.

The economic rationale for seeking and maintaining a monopoly position is to maximise profits through the maintenance of high prices enabled by the suppression of competing products. This is a fair, however another rationale may be informing Nutriset’s actions with regard to patent enforcement. The obvious consideration is the desire to ensure the quality of RUTF. This is clearly an important issue but it should be considered whether monopoly is the only way of ensuring this. Certification of quality of generic RUTF products by an independent standards body is an alternative that merits consideration.

Quantity, as opposed to quality is also an important issue. Monopoly of large-scale production of RUTF entails both continuation of supply and another rationale may be informing Nutriset’s actions with regard to patent enforcement. The obvious consideration is the desire to ensure the quality of RUTF. This is clearly an important issue but it should be considered whether monopoly is the only way of ensuring this. Certification of quality of generic RUTF products by an independent standards body is an alternative that merits consideration.

Quantities are not new. They have been raised in international meetings at which ENN / Field Exchange work has been/are present or have been responsible for recording and publishing proceedings. It has to be a matter of concern to readers that ENN / Field Exchange did not take the opportunity to report these concerns when they were raised and did not specifically address these issues when visiting and interviewing Nutriset’s management. Instead we were treated to a “puff piece” on a company that, as far as RUTF is concerned, has little claim to being “an ideal model for potential public and private sector partnerships”.

It is a matter of record that ENN / Field Exchange has accepted funding from Nutriset. We think we can assume that ENN / Field Exchange staff have also received hospitality paid for from Nutriset’s marketing budget. Lunga’ho, Lhotska, and Norton suggest that this may have influenced the way Nutriset and their products are depicted in Field Exchange. To purchase such influence is the usual purpose of corporate funding and hospitality. Whether Nutriset sought and whether they succeeded to purchasing influence is something that we, as readers, will probably never know. However, it is clear, however, is that accepting money from a private sector company and then failing to report on a major issue regarding the conduct of that company creates the perception of a conflict of interest.

This is not an easy matter for ENN / Field Exchange to address. There is a potential for similar, perceived or otherwise, conflicts of interests to arise regarding any of ENN / Field Exchange’s sources of funding. This could, perhaps be solved by moving to a subscription model or by relying on advertising-revenue. I doubt that a subscription model would be sustainable or cheap for individual readers and ENN would probably have to rely on bulk sub-
Dear Editors,

I have read with interest the lively debate over the role of commercial products and the sustainability of interventions to address severe acute malnutrition. The central question underlying much of this debate is how can effective interventions to treat severe acute malnutrition (SAM) be made sustainable? The reason that these debates are increasingly common is that the advent of CTC using RUTF now provides a model that offers the potential to convert our theoretical knowledge of SAM into effective and sustainable long-term strategies, even in the poorest countries of the world. This represents a major advance as hitherto, despite incomplete procurement protocols capable of reducing case fatality rates to 1-5% being available for at least thirty years1, case fatality rates in developing country hospitals were the case.

To clarify some of the issues in this debate, I would first like to correct some misconceptions that appear in these letters. The CTC model stipulates that wherever possible, intervention should work with or through local capacity, strengthening communities’ abilities to treat and prevent acute malnutrition. Although first trialled as humanitarian interventions implemented by INGOs, CTC is increasingly implemented by local actors often through local clinics. CTC is only 5 years old, but already its model of early case finding, simple outpatient treatment, peer support and the local production of RUTF is looking to be sustainable over the longer term. All longer term CTC programmes that Valid supports are trying to evolve towards using locally manufactured RUTF made either at the capital or better, at district level. As Noreen points out, internationally procured Plumpy’nut is not only too expensive but it also gives out the wrong messages. I had to smile that the CTC Special Supplement edited by Tanya Khara and myself, apparently gave the impression of advertising Plumpy’nut2. In reality, I am a direct advocate of Nutriset, not for profit company producing and developing RUTF production in several developing countries in direct competition with Nutriset and Plumpy’nut. However, we have a lot to learn about advertising and branding!

We set up Valid Nutrition because we also share Noreen’s view that uninterrupted access to quality therapeutic products is vital if programmes to treat acute malnutrition are to have long-term impact. The success of the CTC approach is dependent upon the available ability of cheap, effective, locally produced therapeutic products and whilst Noreen is correct in stating that these can be made in people’s localities, then the charge could be made that ENN / Field Exchange will not criticise Nutriset for losing advertising revenue.

Perhaps the best way is to keep things as they are and rely on an active and informed readership to raise issues of conflicts of interest as they arise. The fact that ENN / Field Exchange published Lunga’ho, Lhotска, and Norton’s letter and have encouraged and are committed to further discussion can only reflect well on their integrity.

Mark Myatt
Institute of Ophthalmology

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1 Schofield C, Ashworth A. Why have mortality rates for severe acute malnutrition remained so high? Bull World Health Organ 1999;77:3-4
2 Valid International and Valid Nutrition Co-director

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Dear Editors,

I am joining this discussion concerning the ENN, Nutriset, conflict of interest and the variety of foods used in response to nutritional emergencies. As someone who has taken care of thousands of malnourished children as patients in Malawi, and worked with, at central and regional level, to improve the outcomes and care of these unfortunate children. The discussion was prompted by an article in issue 22 of Field Exchange about Nutriset, and I also have personal experience of working with Nutriset.

The article itself profile Nutriset as a company in a very favorable light and does not feature or endorse any product that they sell. The article is consonant with my experiences and interactions with Nutriset. I was not suspicious in reading the article that Nutriset was being unduly ‘promoted’. Conflict of interest refers to mutually beneficial relationships between two parties that provide so many benefits that objectivity with regard to each other is impossible. Often this involves the transfer of the profit sector of which the ENN has been an advocate for malnourished people, not a champion of either NGO or business interests. Thus, it is fair for readers to ask whether these two parties are not a conflation of interest between ENN and Nutriset, and it is completely understandable that this question was raised given the cheery tone of the article in question. The co-directors of ENN have answered that the ENN has accepted a very modest amount of support from Nutriset, no more than from many NGOs. Their annual report verifies this. The track record of ENN remains one of uncompromised support for vulnerable populations, and their reputation is tarnished by this questioning. Questions about conflict of interest only damage the parties involved when they are not forthcoming, and this is not the case with ENN.

The problem of finding effective, lower cost, local foods to therapeutically feed malnourished people is very important. 80% of the malnutrition worldwide is not associated with disasters, such as war or drought, but is simply the result of grinding poverty. Disasters attract the INGOs, and they may appropriately bring imported, specialised foods with them. Malawi, the nation I have worked in for 11 years, is not one wracked by armed conflict or masses of people moving in armed flight. Poverty, and I also have personal experience of working with, at central and regional level, to improve the outcomes and care of these unfortunate children.

Steve Collins
Co-director
Valid International and Valid Nutrition

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2. Schofield C, Ashworth A. Why have mortality rates for severe malnutrition remained so high? Bull World Health Organ 1999;77:3-4
3. Steve’s comment refers to a point made in a circulated draft letter by Noreen Predelli, which flagged the prominence of the product Plumpy’nut in the ENN Special Supplement on Community Therapeutic Care
4. See Field Exchange 24

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Mark Manary MD
College of Medicine, University of Malawi
Community Based Targeting in Myanmar

By Jeremy Shoham

In May/June 2005, Jeremy Shoham was part of a WFP Office of Evaluation (OEDE) team which fielded a mission to Myanmar as part of a five country case study thematic evaluation of targeting in relief operations.

A key component of the WFP programme in Myanmar has been community based targeting (CBT) as part of the vulnerable group feeding (VGF). As a member of the evaluation team, Jeremy was involved in discussions and interviews with WFP staff and the UN Resident Representative in Yangon, undertook field site visits in Maungdaw and Buthidaung Townships, northern Rakhine State, and Yananhuang and Pakokku, Townships, and Magway Division meeting with UNHCR and co-operating partner staff, Food Management Committee members, beneficiaries, and non-beneficiary community members. This article focuses on the CBT element of the programme and lessons learnt.

Community based targeting (CBT) of food aid in emergencies was initially piloted in the mid-1990s in east Africa. It grew out of early experiences of community-based distributions which had been piloted in Uganda and Kenya. In CBT, the community is used to identify beneficiaries so that those who have the greatest knowledge about socio-economic factors in the targeted communities identify the most needy. This approach is usually distinguished from ‘administrative’ systems by the more active participation of the recipient population, rather than only its representatives, with the aim of reaching mutually agreed and acceptable eligibility criteria. Thus eligibility criteria tend to be more subjective, complex and locally specific.

Background

The Union of Myanmar comprises states and divisions that include 135 ethnic groups in its population of 50 million people. It is a ‘least-developed’ country and in 2003, ranked 131/175 in the UN Human Development Index. Myanmar is governed by a central government and through military command areas. The country is under sanctions, creating difficulties in sourcing international aid. UN agencies are expected to provide assistance directly to communities and not through government channels. National planning and baseline information on population numbers, vulnerability, food insecurity, socio-economic status, adult literacy, school enrolment, health and nutrition that is available is at a high level of aggregation, and there are areas of the country for which no data are available.

WFPs Protracted Relief and Recovery Operation (PRRO 10066.2) in Myanmar has project sites in the northern part of Rakhine State and Magway Division, Northern Rakhine State (NRS) is largely populated by people who are ethnically Rohingya (82%) and Muslim, rather than Bamar and Buddhist that make up the central government and military. Approximately one quarter of the Rohingya population of NRS (230,000 people) moved to Bangladesh as refugees in 1991-2. Under an agreement between Bangladesh and Myanmar, all but 18,000 of these people have returned to resettle in Myanmar in subsequent years. Of the 18,000 who have not returned, around 6,000 have been recognised for return by the Government of Myanmar (GoM) but have not yet chosen to do so, mostly for economic reasons.

The central government creates and applies laws differently to Rohingya and other ethnic groups living in NRS. The movement, citizenship, taxation, trade and other aspects of life for the Rohingyas are made extremely difficult by the laws and informal and formal taxation to which they are subject. Returning Rohingya refugees are granted Myanmar resident status. However, most other Rohingya people are stateless and without the protection of citizenship of Myanmar.

Magway Division is part of the dry zone of Myanmar. Historically it receives only 500mm of rain per year, which is possibly decreasing but insufficient data are available to confirm this. The aridity severely limits crop and livestock production and it may be that increasing numbers of the population are seasonally migrating from the Division to other parts of Myanmar for employment.

The majority of the populations of NRS and Magway are chronically poor and have weakly developed social and economic infrastructure. Like the rest of Myanmar, they are adversely affected by what most stakeholders regard as inappropriate agricultural and economic policies of the central government. NRS and Magway Division are regarded by the UN Country Team as amongst the parts of the country most vulnerable to poverty, unemployment and food insecurity. In January 2003, Action Contre la Faim (ACF) undertook an anthropometric nutritional survey in NRS and found a prevalence of 16.4% global acute malnutrition (GAM) and 3% severe acute malnutrition (SAM) in children under five in three zones. Rates of chronic malnutrition were 63.6%. Furthermore, over half of mothers (52.1%, n=701) had a Body Mass Index of < 18.5.

In NRS, government measures make the movement of food across military command areas difficult as the authorisation procedure is slow and often does not work. This has caused a number of pipeline breaks in WFP operations and continues to seriously disrupt the PRRO.
Targeting structures
The PRRO has the following components:
- Protracted Relief for Vulnerable Groups (6 months): refugee returnees (3,000 planned), households headed by women, widows without support, orphans, elderly, chronically sick or disabled people (65,000 planned), and TB patients (2,000 planned).
- Food for Education (FFE): take home rations for boys and girls enrolled in Grades 1 to 5 in 95% of the NRS primary schools.
- Food for Training (FFT): a daily ration to off-set wage loss paid to people attending vocational skills training.
- Food for Work (FFW): community activities that enhance agricultural productivity, access to services or improved WATSAN, and woodlot construction.

Targeting in Northern Rakhine State (NRS)
Geographic Targeting
In NRS, all three townships were selected for the PRRO. The village tract selection was based upon an ACF food security survey conducted in November 2002.

Community Based Targeting
CBT is the system employed for identifying recipients for the Vulnerable Group Feeding (VGF). The FFW programme beneficiaries are also identified through the system, although this does not involve the same degree of community involvement. Up until 2004, the method of targeting at community level, which had been employed for a number of years in NRS, involved a village meeting, organised by village elders, where WFP field monitors outlined eligibility criteria. Villagers were then asked to nominate beneficiary households.

There were a number of problems with this approach. Many people were left out, the villagers argued for an increased range of criteria in order to include more beneficiaries and criteria were not always adequately linked to food security. Also, many villagers felt that the community was not adequately involved in the process and that there was too great an influence of village leaders in the process. As a result, a new system was established in 2004.

This system involves WFP field monitors listing all the households in the hamlets and convening a village meeting (minimum of 50-60% must be present). WFP then suggest criteria for inclusion of individuals in VGF. These criteria may be modified at the village meeting. Village participants are placed in one of three groups that, in turn, allocate each household in the village to one of four wealth categories (rich, middle, ordinary poor, and extremely poor). These lists are then compared (triangulated) and, in order to qualify for inclusion in the VGF, households/individuals have to have been nominated as extremely poor in all three lists. At this point WFP field monitors visit the households to ensure that nominated households are extremely poor. This screening involves assessing standard of dwelling, lands use, livestock assets, furnishings and stored foods. An assessment is also made of household income and expenditure with a view to calculating surplus/savings and debt.

In NRS, an estimated 12% of villagers are enrolled as extremely poor (data from only 1800 households have been analysed at the time of writing this article). A key difference in outcome between the old and new system is that the old system usually resulted in a 95% female headed beneficiary case load, whereas the new system also includes many other groups, e.g. landless, elderly with no support, physically and mentally handicapped, etc. so that the female headed household case load will now be an estimated 80% of beneficiaries.

In order to undertake this new form of CBT, an additional 20 temporary field staff were recruited and trained at a cost of less than $5,000. This represents a very small proportion of the total project costs that were originally planned to be $12 million. The whole exercise took approximately two months and involved approximately 400 hamlets.

Food for Work (FFW)
FFW activities have also been targeted within the accessible, high vulnerability areas as identified in the ACF food security survey. The household targeting element of the FFW programming employs an elected Food Management Committee (FMC). Each FMC has equal male and female representation. The FMC are meant to first select the extremely poor and then, resources and work permitting, the ordinary poor as workers. There is a reported excess of demand for work while the tasks, which are agriculture road building and pond renovation and therefore involve fairly heavy work, predispose towards greater involvement of men.

Monitoring
To date, the monitoring of targeting has been a weak area of the programme with limited statistical analysis. The main monitoring activity has been to report on the number of beneficiaries and tonnages of food delivered for each programme type. Targeting for the VGF has been assessed by WFP to be 88% successful in identifying the most vulnerable people in the communities. This is based upon the screening process undertaken by field monitors to verify that the communities’ beneficiary lists do include only those meeting the agreed criteria for selection.

Targeting in Magway Division
Geographic Targeting
The selection of townships was based on a ranking exercise involving government departments (agriculture, livestock, education, development affairs, nutrition training), the private sector, and community based organisations (CBOs). Village tracts were selected based on the findings of an assessment conducted in the six selected townships between 15th Nov 2004 and 7th Dec 2004. This assessment primarily utilised secondary data from government township departments and qualitative ranking by two key informants from each village tract.

CBT methodology
As this is the first year of a PRRO in Magway Division, WFP has benefited from the NRS experience and is using the revised CBT system for VGF introduced this year in NRS. Five non-governmental organisations (NGOs) are implementing the FFW through the creation of a CBO or FMC of villagers. There appears to be less adherence to targeting the poor and very poor (compared with NRS) in FFW activities, with a more relaxed policy of allowing all able-bodied person to work. The time spent by...
the FMCs in managing the FFW and allocating food may be considerable. Even with rotation of committee members, a few hours per day appears to be the norm. However, the FFW does coincide with a period of least activity at village level.

Monitoring
A monitoring system has yet to be put in place for the PRRO activities in Magway. This is largely due to the fact that staff have been engaged with getting the programme up and running.

Observations on CBT in the Myanmar PRRO
The CBT component of the programme has been very successful. Recent refinements have considerably strengthened the system in terms of ensuring a lower exclusion error. Household screening by WFP/NGOs and the mission field work shows that the poorest of the poor are invariably targeted (inclusion estimated at 88%). This exemplifies the learning that has taken place in the programme.

CBT appears to bypass political structures at village level and may also contribute to strengthening of civil society, as well as establishing an instrument for other development activities.

CBT may work particularly well in the Myanmar context as other ‘poor’ are included in FFW/FFT and school feeding, so that the community do not feel under so much pressure to include everyone in the VGF. However, these options may not be available on this scale in other societies where there is less educational and management capacity at village level to implement large scale FFW and FFT activities.

The CBT approach employed in Myanmar necessitated the recruitment of extra, temporary staff (20 in NRS) to establish the system and also took considerable time and investment of resources. There are, however, no data available on comparative costs with other forms of targeting.

For further information, contact Jeremy Shoham, email:jshoham@easynet.co.uk

Evaluation of ECHO Actions in DPRK

Summary of Evaluation
The European Commission’s Humanitarian Office (ECHO) recently conducted an evaluation to assess the appropriateness of their interventions in the Democratic People’s Republic of Korea (DPRK) since 2001. The methodology involved examining documentary research and interviews with primary stakeholders. The evaluation team spent three weeks in DPRK, with approximately half the time on field visits to ECHO-supported projects. Although ECHO have supported health, water, sanitation, nutrition and food sectors during since 2001, this summary of the evaluation only focuses on the findings in relation to the food and nutrition sectors.

Since the beginning of the emergency in 1995, international agencies have worked under severe restrictions in DPRK with limitations on access and very limited accountability. Agencies have generally been unable to work with technically qualified Korean counterparts, limiting opportunities for training and capacity building. Analysis of overall food aid to DPRK in recent years shows that political, rather than humanitarian, factors are the primary reason for variations in donor contributions. In DPRK, the food gap has officially been determined by the annual crop assessment and the national nutrition surveys (1998, 2002 and 2004). Uncertainties about the extent of the food gap are compounded by uncertainties about the extent of food aid, since food aid from China is not made public and is invariably the subject of considerable speculation. The methodological limitations of crop assessments are widely recognised. As in many other countries, the crop assessment in DPRK is largely based on figures provided by the government. In DPRK there is limited information available and what is available should be treated with caution. Vulnerability analysis crucially depends on data obtained at a local level. A good deal of this has been collected informally and/or unofficially by WFP in the course of its extensive monitoring programme, though much of it remains unanalysed.

There are particularly positive aspects of the food aid programme. These include implementation of the targeting system through institutions such as nurseries and kindergartens and the local production of fortified food. The targeting system, which is based on data made available by the government, provides WFP with a picture of the groups that require food aid, though not complete beneficiary lists. The division of beneficiaries into groups also allows for the adjustment of coverage, depending on funding availability, and the centralised system makes it possible to assume that most children will attend nurseries and kindergartens.

If economic reform and progress takes off, WFP may find it more difficult to justify the need for food aid in the near future, whether or not the position of vulnerable groups actually improves. Providing data on the access to food of vulnerable groups is more important than calculating the national food gap, and the continuation of WFP’s programme will, in part, depend on their ability to persuade donors of the need to continue feeding vulnerable groups.

ECHO support to UNICEF in nutrition includes a wide range of inputs, including micronutrient premix for the local production of fortified food, F-100 therapeutic milk, micronutrient supplements and IEC (information, education and communication) support. The main findings of the evaluation in relation to nutrition included:

• ECHO could have benefited from some expert input on nutrition programming design and implementation and in future, technical assistance on nutrition should be sought, particularly at the time proposals are being reviewed.
• There is only limited implementation of nutrition programmes at a local level in DPRK. Local level implementation should be promoted along with an expansion of appropriate INGO partners.
• Protocols for the treatment of severe malnutrition are not being adequately implemented, leading to decreased impact on reducing severe malnutrition and lower chances of recovery and survival for severely malnourished children. The comparative ability of hospitals, baby homes and orphanages to manage malnourished babies and children should be assessed.
• F100 is being extensively used to feed non-malnourished children, which is inappropriate and is not cost-effective. In future, proper milk sources (not F100) should be provided to children aged 6-24 months who are not malnourished.
• Use of F100 for infants (under 6 months) is dangerous and measures should be in place to prevent this.
• Support to micronutrient premix is a strong component of the programme with potential to reach many vulnerable children.
• Lack of transport prevents some institutions from receiving food from WFP particularly as the quantities are usually small.

Field Exchange recently interviewed Roger Yates from ActionAid UK in their offices near Archway station in north London. Roger, whose professional background is in engineering, began working overseas in 1984, alternating between development and emergency work. Prior to joining ActionAid in 1999, he worked for a variety of organisations, including Oxfam and DFID, and took up the post of head of emergencies in ActionAid UK in 2000.

Through consultation with country programmes, ActionAid has recently gone through a long process of re-defining strategic priorities. There are now six strategic priorities, which are all intertwined around human rights. Roger is responsible for one of the newer priorities in the organisation – “the right to human security in conflict and emergencies”. The other strategic priorities relate to right to food, women’s rights, HIV, education and governance.

Historically, ActionAid has mainly worked in development programming. In fact, the first emergency unit was only established in 1995. At the time, there was resistance within the organisation from ‘purists’ who viewed ActionAid as a predominantly developmental organisation. For the next few years, the emergency sector had an uncertain existence. However, within months of arriving, Roger urged ActionAid to develop an emergency work. A main conclusion was that the organisation really had “no option but to continue working in emergencies”. Also, rather than just “flying in and flying out of emergencies”, the review argued for an approach which strengthened the interface between development and emergency programming. Given that it is the poorest who suffer most in emergencies, the review highlighted two ways to strengthen emergency / development interface. First, development can reduce vulnerability of the poorest to emergencies and secondly, emergencies provide a chance to reduce vulnerability if these are largely determined by power relations, i.e. in emergencies power relations can be changed. This conceptual approach to emergencies was accepted within ActionAid and still largely underpins the organisation’s emergency work.

Although ActionAid do engage in traditional forms of humanitarian intervention like food distributions - particularly when they have a lead presence in an emergency affected area - their emergency interventions are mainly longer-term, with a livelihoods and poverty focus. Interventions strive to empower the poorest following emergencies, a good example being the recent communal riots in Gujarat where ActionAid helped the poorest submit compensation claims. Another typical form of ActionAid emergency activity is in the area of psycho-social support following natural disasters. For example, in post-cyclone Orissa, ActionAid took up the post of head of emergencies in ActionAid UK in 2000.

Up until recently, ActionAid have tended to embark only on emergency programmes in those countries where they already have a long-term presence. However, this started to change around 2002 with the realisation that ActionAid had a valuable contribution to make in emergencies, especially in terms of addressing exclusion of the poorest. Consequently, ActionAid are now committed to scaling up their emergency work and working in countries where there have been no prior programmes, for example, Niger, Sri Lanka, Maldives, and through operational partners. ActionAid will, however, only work in emergency contexts where poverty is an issue. Thus, after an initial appraisal before the invasion, ActionAid decided not to work in a percentage of poverty was too high a major issue. In other emergency situations, there may be different constraints. In Darfur, ActionAid lacked the capacity to get involved while in Indonesia, a combination of limited capacity and lack of available partners prevented engagement.

In essence, ActionAid does not consider itself to be a relief agency, although they “do some relief”. ActionAid don’t arrive in an emergency “with a solution looking for a problem”, but are a people-centred and rights based agency - “which means listening and then acting”. Furthermore, their focus is on recovery, which is planned from day one of their arrival.

ActionAid is mainly funded by the European public (largely British). The predominant mechanism is through the child sponsorship scheme whereby the funding public are matched with children/families and are kept in touch with how their support is being used and how their children/families are doing. ActionAid does not submit many emergency programmes proposals to traditional donors like DFID or the EU, although it is increasingly recognised that if ActionAid want to scale up more in emergencies, they will have to strengthen their capacity to submit proposals to the bilaterals. ActionAid is a member of the Disaster Emergencies Committee (DEC) so that when a major disaster occurs, ActionAid takes part in national appeals and is entitled to a percentage of the funds raised to respond to the crisis. ActionAid, when necessary and appropriate, can and does launch emergency appeals to its supporters. In the event of a disaster, a country programme may also reallocate its funds to support the response.

ActionAid does not have permanent staff employed as nutritionists so they hire in nutritional expertise when needed. The organisation is structured so that there are international emergencies advisors in the region (three in Africa, one and a half in Asia and one in the Americas). These advisors have three main roles:

i) Emergency response with a global remit, i.e. they can be asked to work in any region

ii) Getting country programmes in the region to incorporate ‘emergency thinking’ into their development programmes, e.g. Disaster Preparedness and understanding of vulnerability

iii) Engagement with policy development.

Roger reckons that one of the biggest challenges for ActionAid in the emergency sector is strengthening their engagement in conflict situations. This is not to say that ActionAid do not already work in conflict situations, e.g. Burundi since 1993, Sierra Leone, Nepal, etc. but rather that ActionAid need to develop their conceptual approach to working in conflict across the organisation. Up to now, each country in crisis has had to develop its conceptual approach from scratch. As Roger says, “we work “on” rather than “in” conflict. There are many issues to consider, not least how to engage with different factions like peace movements / peace keepers and what are the implications of these new relationships. There is hope of setting up new ActionAid offices in New York with a view to developing a closer relationship with the UN Security Council.

According to Roger, one of the unique features of ActionAid is its degree of decentralisation. Their headquarters are in Johannesburg and each country programme has a large degree of financial and policy autonomy. There is a culture in ActionAid of challenging views and prevailing wisdom. Furthermore, policies and strategies are largely determined by power from the field and are planned from day one of their arrival. Country programme staff are always kept in touch with the communities where they work. It is hard for those in the field to judge what information is going to be useful internationally and how to present it”.

Roger was unerringly open about ActionAid’s weaknesses and challenges. This seems to be a part of the ActionAid ethos, i.e. challenging, questioning and internal critiquing. Getting the policies and strategies right also seems very much a priority. While ActionAid have the profile of some of the larger UK agencies (this may in part relate to the way in which they are funded), there is no question that they have equally interesting things to say.
Applying GIS to Nutrition Surveys

By Filippo Dibari, Andrew Seal and Paolo Paron

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This article highlights the potential benefit, resource needs and constraints of applying Geographical Information Systems (GIS) analysis to a conventional nutritional survey dataset in a developing country or an emergency context.

The article is organised on two levels. Those completely new to GIS applications should find the body of the article useful in decision making and in designing the terms of reference for initiatives in this area. For nutritionists who are already familiar with datasets management and with the basics of GIS and who have already tried to apply GIS to nutrition surveys, the step-by-step approach outlined here is supported by substantial technical detail online at http://www.ennonline.net/articles/gis/index.html

ACRONYMS AND TERMINOLOGY

GIS: Geographical Information Systems. A system composed of hardware, software, data and people which helps in the elaboration and analysis of data that have a geographical location.

GPS: Global Positioning System. This system is composed of a constellation of satellites and a device that can be handheld in one’s hand and that can mark and store points (waypoints) and paths (tracks). These can be uploaded into a software programme and visualised.

DIGITALLISED MAP: A map that has been transformed from a paper-based medium to a digital one in order to be edited in a computer (also called a Raster).

GEOREFERENCED MAP: A digitalised map that has been uploaded into a software programme and assigned its proper geographical coordinates.

ESRI: Environmental System Research Institute - a commercial supplier of GIS software.

ArcGIS: An ESRI GIS programme that incorporates virtually all known GIS features and functions, i.e. mapping, analysis, database management, editing, and integrates with other software and devices.

ARCMAP: The main ESRI Mapping and Analysis module of the ArcGIS programme. Functions include uploading and georeferencing maps, importing data from other sources, and analysis.

ARCCATALOG: The main ESRI database management module of the ArcGIS programme. It allows you to load data onto a computer, and manage the data, files and a directory within a particular GIS project.

WAYPOINT: A fixed location with specific coordinates (longitude and latitude) which is determined and stored in a GPS. In most cases, altitude can also be stored.

TRACKS: A series of waypoints that represent a path.

A Geographical Information System (GIS) comprises a set of hardware and software tools that help to visualise and to locate, rather than analyse, the patterns of a phenomenon. Nutrition is one of the many areas of possible application of GIS methodologies and Public Health Nutrition in emergencies has only recently discovered the potential. Almost any nutrition survey aiming to define the nutritional status in a certain area (at district, town, province, region, state, nation or continent level) can be enhanced by a GIS presentation. No major changes are needed in conducting the nutrition survey or in identifying its best epidemiological design.

UN Agencies and NGOs are already including greater use of GIS in their work. Early Warning Systems Mapping, Poverty Mapping and Vulnerability forecasts are three of the largest applications among such institutions. The skills required in data management and digital mapping are still limiting the use of such powerful tools among smaller organisations. The demand has stimulated the creation of not-for-profit companies dedicated specifically to GIS applications in humanitarian relief.

Even EP-INFO, probably the most popular software among public health nutritionists, has evolved in the last few years to include a GIS analysis component (Epi Map) plus a large free source variety of maps of administrative boundaries, online atlas, health risk exposure data, and others.

Figure 1     Relationship between a GIS map and its original dataset

1 See section later for references to GIS application sources.
**Why field programmes should consider using GIS**

Most humanitarian workers will find the following questions familiar:

"Where is the best site to set up the next Therapeutic Feeding Centres in accordance with the prevalence of registered acute malnutrition and the distance from the available health posts?"

"We have nutrition data of this area, plus an old non digitalized (papercopy) map of the region, and a very basic GPS. How is it possible to create a map on my computer with all the information in order to show it to both the donors and the local community authorities and then use it to help make important decisions about future initiatives?"

"In order to better target the beneficiaries, how do we set up a quick decision-making set of criteria based on the available data coming from nutritional status but also administrative boundaries, traditional family clan areas, water availability, transport routes and security considerations?"

"I have driven for hours up this increasingly narrow track in search of a non-existent village in the middle of nowhere. Where exactly am I right now?"

While GIS is not the “magic bullet” for such questions, the use of GIS certainly contributes tools to provide better answers. Under the mantra ‘keep it simple’ and equipped with basic data management skills, there are simple GIS steps which can add significant value to a nutritional analysis report. More specifically, GIS helps in decision making because it provides data on the phenomenon of interest. The map is like the ‘tip of an iceberg’, visually representing the bulk of the information and datasets ‘underneath’. This key concept is reflected in figure 1, where the yellow area in the map graphically represents the record and all its data, also highlighted in yellow in the table.

How data are presented can have a number of practical implications. For example, there might be the need to share a decision regarding the outcomes of a recent nutrition survey with the leaderships of a few villages in a rural area. How these data are represented will affect how well they can be shared and how much the programme can benefit from the stakeholders’ contributions, independent of their education level. With the scenario in mind, figure 2 presents three different ways of representing the same dataset: a table, a histogram and a map. In this situation, the GIS map may well be the best way to communicate the available data.

Applied to nutrition, GIS analysis is potentially an extremely powerful tool for monitoring, evaluation and targeting. For example, it can reflect situations where the overall nutritional status does not change in quantitative terms, but marked changes in the spatial distribution of malnutrition occur (see figure 3). This is reflected in the theoretical scenario reflected in figure 4, which compares the distribution of child global acute malnutrition (GAM) at time 0 and 1. The prevalence of GAM is roughly the same at the two moments in time, however the spatial distribution has completely changed and therefore the appropriate areas to target have/should also. In figure 4, the areas in which the socio-economic indicators have reported a high prevalence of “very poor” people have been coloured blue. Compared with figure 3, it can be clearly seen that the blue sections do not overlap with the sections in which the highest level of acute severe malnutrition is actually located. This suggests that using socio-economic status to target geographic areas would not be a robust means to target severe acute malnutrition.

**Resource implications of applying GIS**

To apply GIS to a nutrition survey, extra time is demanded in two phases of the survey. A few minutes will be enough to collect geographical data using a Global Positioning System (GPS) during the field phase of the survey. However, extra time is required for cleaning and analysis of the dataset to prepare for presentation in a GIS-map. As a whole, the process does not require a high level of ‘personnel time’, as long as the person working with GIS is already experienced or has received hands-on training. The steps for conducting a nutrition survey, together with GIS-related actions, are listed in table 1.

**What equipment is needed?**

When applying GIS analysis in a nutritional survey, a GPS device and GIS software are needed. The GPS allows users to collect data on both locations and tracks, while the GIS software allows the display and analysis of these data combined with data derived from a nutrition survey.

**GPS device**

There are different kinds of GPS that can be categorised in order of complexity and cost as basic GPS, mapping/cartographic GPS, car GPS and differential GPS. The first two are quite enough for survey purposes. Three brands of GPS handsets are the most common on the market, and are considered the most reliable by the authors. For the purposes described in this article, the models Garmin GPS or Garmin e-trex family (or similar other brand) are recommended. The choice of the model is related to the storage capacity of the waypoints and how data are downloaded into the computer.

* See link to key website sites at http://www.ennonline.net/articles/gis/index.html
A commercial GPS has a standard error of about 10 metres in positioning, which normally is well below the precision that a nutritional survey requires. Some GPS can measure also the altitude, which can be useful in adjusting haemoglobin cut-offs to calculate the prevalence of anaemia in a survey.

**GPS/GIS software**

Once the data have been collected by a GPS, there are several possible methods, solutions and software options for proceeding with the analysis. Here only one of them is considered.

In order to run the GIS analysis, at least three pieces of software are required. The first is necessary to download the data from GPS into the PC with the correct geographical coordinates (e.g. Mapsource).

The sets of data are combined within the GIS software which allows for their integration and analysis. The way to introduce waypoints and maps into the GIS can appear complex and therefore a step-by-step approach is summarised here. Reference is made to a series of boxes (1-10), which go into a high level of technical detail and are available online at [http://www.ennonline.net/articles/gis/index.html](http://www.ennonline.net/articles/gis/index.html)

In order to highlight critical points in the procedure described in the boxes, a case study has been taken into consideration. It consists of a nutrition survey undertaken by the Institute of Child Health, London in collaboration with WFP and MSF-Belgium in Bie Province, Angola, in November 2004.

**Guide to applying GIS to a nutrition survey**

Three kinds of data are necessary for GIS analysis in the context of a nutrition survey (see figure 5):

1. Data coming from anthropometry, questionnaires, biochemical analysis, etc.
2. Waypoints collected with a GPS
3. Maps of the area obtained from different sources

The sets of data are combined within the GIS software which allows for their integration and analysis. The way to introduce waypoints and maps into the GIS can appear complex and therefore a step-by-step approach is summarised here. Reference is made to a series of boxes (1-10), which go into a high level of technical detail and are available online at [http://www.ennonline.net/articles/gis/index.html](http://www.ennonline.net/articles/gis/index.html)

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**Step 1: How to introduce the waypoints into the GIS software**

The GIS analysis of nutritional data consists of four phases:

1. Geographical collection of the waypoints using a GPS in the field (see box 1 online)
2. Downloading the waypoints from the GPS into the computer (see box 2 online)
3. Adjustment of the waypoints/tracks dataset (see box 3 online)
4. Combining the geographical data with the nutritional survey data to answer specific queries (see box 4 online)

An example of the final result can be seen in figure 6.

**Step 2: How to introduce a map into the GIS software**

Once a map has been obtained, it must be made compatible with the GIS software. The steps to follow are:

1. Preparation of a digitalised map of your area of interest (see box 5 online)
2. Digitalisation and cleaning of the map (see box 6 online)
3. Importing the map and the GPS waypoints and tracks into the GIS (see box 7 online)
4. Georeferencing the map (see box 8 online)
5. Joining the nutritional survey data and cluster points (see box 9 online)
6. Visualising the nutritional survey data on top of a map (see box 10 online).

**Key considerations when employing GIS analysis for the first time**

Skills in GIS software are required as GIS software are not always user friendly and training in their use can be expensive, according to the level of knowledge. Supervision of data management by an experienced user is recommended for the first time.

Skills in managing data using different software are required. For example, it is necessary to know how to export data from EPINFO into ArcMap, passing through Microsoft Excel or Word, in order to achieve

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2. Mapsource is the software used with the Garmin model GPS, typically sourced from where the GPS has been purchased.
3. See online link [http://www.ennonline.net/articles/gis/index.html](http://www.ennonline.net/articles/gis/index.html) for map sources.
the correct format of the files or of the tables to insert into the GIS software. These operations are not complicated or time demanding per se whenever the procedure is known. They can be so, however, if the operator has to find the way to do it on his/her own.

Choosing which GPS to use is important. Certain GPS do not allow the user to download their coordinates into the computer, or require additional equipment/manual data copying which has resource implications and introduces greater room for error.

Which GIS software to use is also a key consideration. There is a large choice of GIS data software, recently even open-source ones. Ithave minimum computer operating requirements. The three leading software houses are ESRI, MAPINFO and PCI. ESRI is the most common source of the relatively old, but still reliable and useful, ArcView software (recently updated) and their new GIS platform, ArcGIS. The latest version of EPINFO (2005) includes a component to apply epidemiological data on to digitalized maps and an instruction manual accompanies the software (MAPINFO). The authors are not familiar with this system so cannot provide further comment. However, EPINFO 2005 is downloadable for free from the Centres for Disease Control, Atlanta.

From the point of view of inferential statistical analysis, GIS is of little value for comparisons of cluster-sampled surveys, since such survey can only provide a reliable estimate for the entire survey area. It is not valid to analyse such surveys by cluster to try and prove a relationship between a risk factor and an outcome. If comparisons between sections are required, then an independent representative sampling method is needed for each geographical section that you wish to compare.

There are plenty of good GIS manuals that can help the reader gain more in-depth knowledge, and two recommended reads are included at the end of this article. More specific public health oriented resources are available on the web, although they tend to consider ‘western contexts’ rather than developing countries ones. Good online resources include WHO (which includes a Global Atlas) and the National Centre for Health Statistics of USA.

**Final conclusions and considerations**

Statistical analysis of GIS nutrition datasets is an area still in its infancy and requires further research and development. Where stratified cluster surveys are used or several different discrete surveys are available, then GIS provides a clear and powerful means to compare differences between areas. As mentioned earlier, cluster survey data is, as a result of the sampling design, only statistically representative of the whole survey area so care must be taken in ascribing significance to geographical variations between clusters within the same survey. When comparing areas within the same cluster survey, then differences that are observed between clusters may be suggestive of real geographical differences, but such differences should not be accepted as statistical fact. This is an important issue to remember if GIS is used for targeting. When systematic (interval) sampling is used, then true geographical differences are easier to identify using spatial statistic tools that are becoming more widely available within GIS software packages.

An investment in GIS in a nutritional survey today may allow users to benefit from the opportunity to link their data with other databases sources at a relatively low cost in the future. For instance, data on climate, rainfalls, soil erosion, but also food items prices and most of the typical food security parameters, could be subsequently linked. Those data are becoming more and more readily available on the internet thanks to governmental and non governmental agencies, institutions and academic bodies. All this should greatly expand the range of potential cross-referencing of this tool.

It should not be forgotten that, in some situations, GPS handsets may be considered as military equipment/manual data copying which has resource implications and not appropriate for humanitarian organisations. The potential risks involved in using GPS should be assessed in each operational context.

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**Recommended manuals**


Ellen K. Cromley & Sara L. McLafferty (2002) GIS and Public Health, The Guilford Press. This explores in depth the nature of spatial data, the mapping of health information and it presents also the use of GIS in different contexts of public health (e.g. vector-borne diseases and access to health services).

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* They normally require a PC with a minimum of: Windows operating system, Pentium processor or AMD equivalent, 256 or higher RAM, and a good graphic memory (at least 64 MB).

1. [http://www.cdc.gov](http://www.cdc.gov)
3. [http://www.cdc.gov/nc/c/about/otheract/gis/gis_publichealthinfo.htm](http://www.cdc.gov/nc/c/about/otheract/gis/gis_publichealthinfo.htm)
Participants talk with mother during a clinical session: Ahmed Sheik Abdi, Anne Njuguna, Mohamed Shukri Elmi

Small group work: Mohammed Ahmed Yassin, Fatuma Kuno Muhumed, Malima Dahir Ali, Mohamed Shukri Elmi

Translation team: Ahmed Sheik Abdi, Abdi Ahmed Mohammed, Mohammed Ahmed Yassin, Mohamed Shukri Elmi

Participants at the interagency Infant and Young Child Feeding Workshop sponsored by CARE Indonesia, Sanur Beach Hotel:
19-20 September, 2005.
Standing: Frank Page, CARE Indonesia.

Food relief committee in Magway Division, Myanmar

Participants at CARE Indonesia’s Infant and Young Child Feeding training session, Kefamenanu, West Timor

Mrs. Margaret Moyo, Mrs. Elizabeth Johnson, and Modesta Simango (Norwegian Church Aid) of the HBC team in Malawi

ACF team pic, from left to right: Alicia Masaultis, Nuria Salse, Gabriela Cormick, Estela Rúgolo, Adrián Díaz
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

Jeremy Shoham (Field Exchange technical editor) and Marie McGrath (Field Exchange production/assistant editor) are both ENN directors.

Rupert Gill is ENN administrator and project coordinator, based in Oxford.

Dan George is the ENN finance assistant, working part-time in Oxford.

Matt Todd is the ENN financial manager, overseeing the ENN accounting systems, budgeting and financial reporting.

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Jon Berkeley manages ENN’s website and supports the production of ENN publications.

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