Annex I: Handout on the Response Analysis Framework

.....

The RAF consists of a conceptual underpinning, analytical tools and key process elements. It has its ''roots'' in situation analysis and its "fruits " in the identification of feasible and appropriate response options. Analytically, it consists of the following core steps:

Stage 1: Summarising and/or strengthening situation analysis (1a) and forecasting (1b).
Stage 2: Formulating objectives for responses and Listing of relevant response options.
Stage 3: Response options screening.

Each of these steps should be conducted in a way that respects four qualities or principles:

- Bringing the right people together
- Bringing the right information together at the right time
- Adapting to and not replacing existing information systems and planning frameworks
- Fostering consensus - with rigour

Stage 1(a): Situation Analysis In this stage, the RAF shows what different aspects of situation analysis mean for response and provides guidance on how to "plug gaps " in situation analysis if required.

Situation analysis establishes parameters such as severity, magnitude and depth of the food insecurity and malnutrition conditions among a given population group at a specified time. A good situation analysis should spell out the severity and magnitude of food and nutrition insecurity of defined population groups over a specified period of time as well as spelling out **why** these groups are food and nutrition insecure (problem analysis). In addition, an understanding of vulnerability should be a part of situation analysis. Vulnerability helps to describe the likelihood of future food insecurity.

Stage 1(b): Forecasting and Scenario Building In this stage, the RAF is designed to help guide thinking on the implications of future situations for food security and nutrition response. It is not the job of response analysis to undertake scenario analysis and forecasting, but rather to tease out the implications of this for response planning. If forecasting has not been done, then the RAF provides some guidance on how this could / should be done.

Forecasting is an essential part of preparing for response analysis. This is because response implementation (interventions) almost invariably takes place sometime after situation assessment and analysis are done. So food security and nutrition conditions for the period of intervention have to be estimated in order to plan responses.

Stage 1 of the RAF is best applied at inter-cluster level, with technical support from food security and nutrition analysts. It is particularly important that the clusters involved in food security and nutrition are involved in the problem analysis part of this stage so that there can be a shared understanding of the different causes of food and nutrition insecurity. This will help lay a good platform for more coordinated response between clusters. The key clusters involved would include Agriculture / Agriculture and Livelihoods; Food Security; Food Assistance; Nutrition; WASH.

Stage 2: Response Options Identification – Stage 2 of the RAF marks the transition from situation analysis to response analysis. This step is divided into two parts. The first part is the formulation of response objectives. Once developed, these objectives provide the platform for formulation and listing of response options in line with the objectives. The development of objectives is informed by the outputs of stages 1 and 2 of the RAF and also the nature of the planning framework within which the RAF is situated. This might be a one year framework (as in the case of Cluster Response Plans in the CAP) or a two to three year framework (as in the case of strategic plans or Plans of Action) or a longer time horizon (e.g. a five year district development plan). For the RAF, it is important that the objectives are as Specific, Measurable, Attainable, Relevant and Time bound (SMART) as possible. Making objectives SMART helps to frame the second part of this step, which is the listing of relevant response options.

Only response options that pass the test of relevance should be listed at this point. Relevance is defined in relation to the problems (problem tree and problem matrix); vulnerabilities and forecasts; and the objective itself.

Stage 2 of the RAF may also be applied at Inter-cluster level, but can also be applied at cluster level. The advantage of an Inter-Cluster setting is that this will enhance the chances of complementarity and coherence between response objectives of different clusters in relation to food security and nutrition.

Stage 3: Response Options Analysis and Screening - The final stage of the RAF consists of **applying the response options analysis criteria** and conditions to the response options listed in stage 2. The tools used are the Response Options Analysis Matrix (RAM) and a decision tree. The RAM is designed to be used to generate debate and ultimately consensus around the appropriateness and feasibility of different response options in meeting objectives. It is not a substitute for proper response planning, but rather is intended to highlight the strengths and weaknesses of responses, weeding out those which are weak or ill-conceived including those which whilst appearing technically sound in principle, might be entirely unrealistic in the local context. There are three processes in this step:

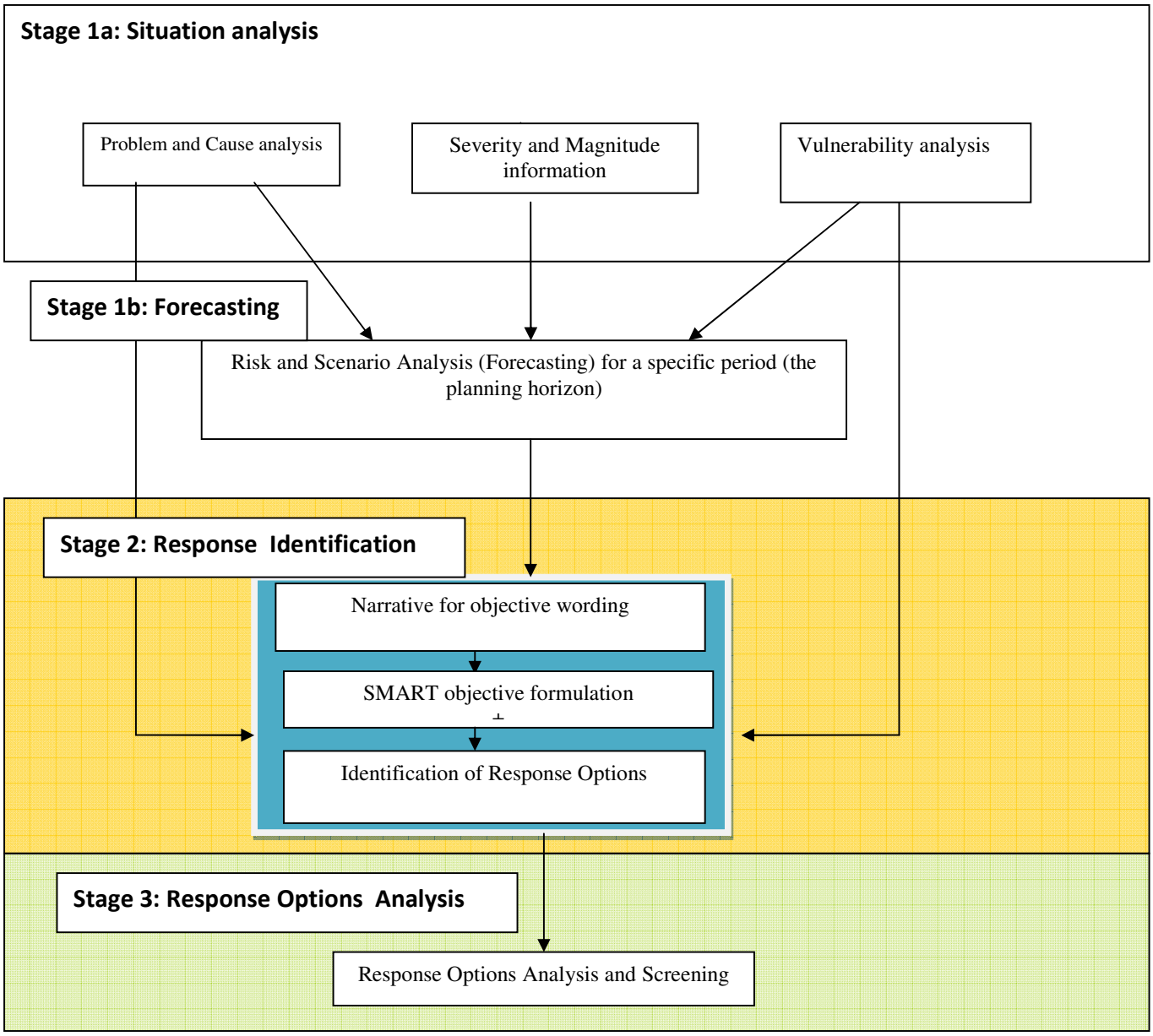
> ***Step 1:*** Access - The first part of this stage is to assess the check physical access to the area in which the option will take place using the *security/access criterion*. This is an essential first check in the RAM process for complex emergencies, where conflict and civil insecurity complicate the frequently occurring natural and other disasters such as drought, flooding, market disruptions.
>
> ***Step 2:*** The RAM *appropriateness* and *feasibility criteria* – The RAM proceeds by requiring its users to score response options against a range of criteria designed to judge appropriateness and feasibility. This stage of the RAM is meant to be used iteratively to arrive at an agreed score against each criterion and as a way to develop tips or guidelines for subsequent planning or project design processes. This is a critical point which will be explained more fully in the relevant section below. A key criterion in the RAM is the "Do No Harm" principle. The scoring of each response option against each criterion should be arrived at through a consensus process involving program specialists with knowledge of the institutional and geographical landscape of the intervention area.
>
> ***Step 3:*** Here, a simple decision tree is used to screen the various response options. The final output of the RAM is a set of options which have passed minimum tests of appropriateness, feasibility and do no harm. This set can then be fed into a proper response planning process which will include detailed design and budgeting questions outside of the scope of response analysis and the RAF.

This stage of the RAF is more suited to the cluster level. In the Somalia context, it worked well with a small group (around 10 persons) drawn from agencies which were part of one cluster (the Agriculture and

Livelihoods cluster). This cluster review committee applied stage 3 of the RAF to help formulate a cluster response plan.

Figure 2 overleaf summarises the Response Analysis Framework and process.

Figure 1: The RAF Process



ANNEX II: Response Analysis Framework (RAF) – Value Added to the IPC and CAP 2011 Development Process in Somalia.

The following table describes how the Response Analysis Support Team (RAST) integrated its activities and support into existing processes for food security analysis and response in the context of the 2011 CAP for Somalia. The table clearly shows at which points the RAF added value to ongoing processes. This may serve as a model for further applications of the RAF in Somalia or elsewhere.

Date	Activity	Results and Value Added
July 2010	RAST has consultations with OCHA, Ag and Livelihoods cluster, Nutrition Cluster, Food Assistance cluster and FSNAU regarding post- Gu season IPC analysis and 2011 CAP	FSNAU, OCHA and relevant clusters plan for a response analysis component within their existing timelines.
2 – 7th August	RAST participated in FSNAU analysis of the post Gu assessment	Initial understanding of the potential and limitations of IPC analysis for response analysis
9 – 19th August	1. Development of problem trees, problem matrices and vulnerability matrices for all major Livelihood Zones in Somalia with a focus on areas in AFLC or HE. RAST working with FSNAU analysts. 2. Compilation of all problem trees, problem matrices and vulnerability matrices into one overall reference document ready for CAP development process. 3. Preparations for Inter-cluster Response Analysis workshop	***Value Added 1:*** Food security and nutrition causal analysis and vulnerability analysis for all major Livelihood zones in Somalia completed and documented.
19th – 23rd August	1. Preparations for Inter-cluster workshop continued – including development of annotated facilitation guide. 2. Development of RAM tool and criteria	2 day IPC – inter-cluster response planning workshop model developed
23 – 24th August	Inter-cluster response analysis workshop held. Attended by agriculture and livelihoods cluster, food assistance cluster; nutrition cluster; FSNAU analysts, RAST.	***Value Added 2:*** Initiation of movement towards cross cluster problem identification response planning; testing of the prototype RAF and RAM
25 – 26th August	RAST discussions with cluster leads on how to move forward with response analysis tools in context of developing 2011 CAP response plans	Understanding of constraints and opportunities for engagement with clusters
27 - 31st Aug	RAST work with Agriculture and livelihoods cluster strategy committee to:	***Value Added 3:*** A clear value addition for the

	(a) review problem and vulnerability analyses; (b) develop objectives and identify entry points for response options for different livelihood groups and zones and (c) link (a) and (b) to CAP strategic objectives and scenarios for 2011.	cluster response plan: objectives and response options are clearly based on evidence, addressing specific problems for different livelihood groups.
1 - 3 Sept	RAST work with Agriculture and livelihoods cluster strategy committee to: Apply the RAM to various response options identified and screen for appropriateness and feasibility.	***Value Added 4:*** A reduced list of 17 response options clearly justified and related to cluster and CAP priorities and objectives.
3- 7 Sept	RAST work with Agriculture and livelihoods cluster strategy committee to develop narrative, indicators and targets for the Ag and livelihood cluster CAP 2011 response plan.	***Value Added 5:*** The narrative of the Cluster response plan was of much higher quality than for CAP 2010 due to the clear linkages made between situation and problem analysis, option selection and justification.
8 Sept - 20th Sept	RAST work with Agriculture and livelihoods cluster strategy committee to develop cluster project guidance sheets and project profile screening criteria based firmly on response analysis process	***Value Added 6:*** All cluster members have very clear and detailed technical guidance on permissible project submission themes tailored to livelihood zones and groups.
1 - 7th October	RAST support to Agriculture and livelihoods cluster CAP 2011 project profile vetting committee.	***Value Added 7:*** RAM criteria plus guidance developed allowed a clear and well justified vetting process. Each project profile had to focus on one or more of the 17 response options. Project profiles received = 100 out of which 50 were selected.

ANNEX III Inter Cluster Workshop Report

INTER - CLUSTER RESPONSE ANALYSIS WORKSHOP
(AGRICULTURE AND LIVELIHOODS; FOOD ASSISTANCE AND NUTRITION CLUSTERS)

BAOBAB CONFERENCE ROOM, SOMALI SUPPORT SECRETARIAT, NGECHA RD, NAIROBI.
23-24 AUGUST 2010

FACILITATED BY THE RESPONSE ANALYSIS SUPPORT TEAM, FAO SOMALIA.

Table of Contents

EXECUTIVE SUMMARY **9**

1. INTRODUCTION **10**

1.1 Workshop Objectives 10
1.2 Workshop Structure 10

2. PROBLEM ANALYSIS AND VULNERABILITY ANALYSIS **10**

2.1 Objective of Session: 10
2.2 Group work Tasks 11
1.1. 2.3 Presentation of group work and discussions (Only Groups A and D presented). 11

3. OBJECTIVE FORMULATION AND IDENTIFYING ENTRY POINTS FOR RESPONSE **12**

3.1 Objective of Session: 12
3.2 Group Work Tasks: 12
3.3 Presentation of group work and discussions 12

4. APPLYING THE RESPONSE ANALYSIS MATRIX AND DECISION RULES TO RESPONSE OPTIONS **14**

4.1 Objectives of Session: 14
4.2 Presentation on RAM: 14
1.2. 4.3 Discussion: 14

5. CONCLUSIONS **15**

6. SUMMARY AND NEXT STEPS **15**

ANNEX 1: LIST OF PARTICIPANTS **17**

ANNEX 2: TIMETABLE **19**

ANNEX 3 - PRESENTATIONS **19**

ANNEX 4: EXAMPLE PROBLEM ANALYSIS MATRIX **30**

ANNEX 5 – VULNERABILITY MATRIX - EXAMPLE **32**

ANNEX 6 - OBJECTIVES AND RESPONSE OPTIONS: EXAMPLE **34**

ANNEX 7 – RESPONSE ANALYSIS MATRIX: EXAMPLE **36**

L45

Executive Summary

This report presents the activities and results of the Inter-cluster response analysis workshop, implemented by the Response Analysis Support Team (RAST) on 23 – 24 August 2010. The event brought together cluster members from the Agriculture and Livelihoods, Food Assistance and Nutrition clusters representing different UN agencies, international NGOs and INGOs.

Background:

The annual Consolidated Appeal Process (CAP) provides an important source of funding for humanitarian actors operating in Somalia. Linking the assessment of food security and nutrition to responses in a clear and transparent way provides agencies with strengthened justification for choice of interventions and gives donors reassurance that these interventions are developed though a sound process. This inter-cluster workshop was organised in order to provide the Food Assistance, Nutrition and Agriculture and Livelihoods clusters with a draft Response Analysis Framework (RAF) to link analysis of food security and nutrition situations with response priorities. The workshop was designed so that the RAF would be used by cluster agencies during the workshop and also evaluated by the agencies. Ideally, the results of this process would be two-fold: (i) objectives and responses which could be used as part of the 2011 CAP response plans and (ii) an improved Response Analysis Framework.

Objectives and Outputs:

The workshop had three objectives:

- facilitate the development of cluster response plans for the 2011 CAP using a process of response analysis,
- to test and refine a draft Response Analysis Framework
- To help lay the ground for a sustainable application of the Framework as an integral part of cluster activities.

The main intended **output** from the workshop, was an agreed analysis of response options for at least **five** high priority Livelihood Zones of Somalia. By the end of the workshop, this output had been partially achieved in that response options had been formulated for **eight** Livelihood Zones and fully analysed in **three** of those.

Conclusions and Next Steps:

At the end of the workshop, participants expressed their views about the draft Response Analysis Framework and discussed next steps. A large majority of participants supported the further development and testing of the tool within the cluster context. Agricultural Livelihood cluster members invited the RAST to facilitate the development of their 2011 cluster response plan using the tool. For the Nutrition cluster, the tool will be useful in terms of helping to screen CAP 2011 project profiles as they come in from the field in the coming weeks. Participants from WFP felt that the tool needed further development before it could be used to help shape the programming within the Food Assistance cluster, and they expressed willingness to be part of the development process.

1. Introduction

1.1 Workshop Objectives

The main **objectives** of the workshop were as follows:

- ***To facilitate development of cluster response plans for the 2011 CAP using a process of response analysis***
- ***To test and refine a draft Response Analysis Framework***
- ***To help lay the ground for a sustainable application of the framework as an integral part of cluster activities***

The core intended output of the workshop was to develop CAP 2011 objectives, indicators and response options relevant for each of the three clusters identified for at least 5 Livelihood Zones in Somalia.

1.2 Workshop Structure

The workshop was structured around group work, with introductory presentations and feedback sessions in plenary. The objectives of each session were introduced to the participants, with the outputs expected by the end of the session. Participants were given time to ask questions and make comments before the group work began.

The participants were split into 5 groups, each group was to take 3-4 Livelihood zones and review and validate corresponding problem and vulnerability matrices (see Annex 4). Groups were comprised as follows: at least one cluster representative from each of the three clusters; one senior analyst from FSNAU, to help in facilitation; other participants were evenly spread out amongst the groups. Each group was assigned an area in the conference room or in nearby conference rooms, with a laptop with the templates saved on hard drive, together with a projector.

After the group work the participants reconvened in the main conference room to present and discuss the findings of their work. At the end of each session there were discussions on the overall suitability of the tools, with suggestions for improvement and questions for clarification.

a. Problem Definition:

Validation and discussion of Livelihood Zone Problem and Vulnerability matrices which had been developed by a joint RAST / FSNAU team. .

Expected output: Reviewed and validated problem and vulnerability matrices for the whole of Somalia

b. Identifying Objectives:

Elaboration of objectives, OVI formulation and response options formulation.

Expected output: Reviewed and validated objectives, OVIs and response options for at least 5 Livelihood zones

c. Response Options:

Application of the Response Analysis Matrix and decision rules to the response options listed in session 2.

Expected output: Reviewed and validated multi-cluster OVIs and response options for at least 5 Livelihood zones

2. Problem analysis and vulnerability analysis

2.1 Objective of Session:

To review, critique and improve Livelihood Zone problem and vulnerability matrices.

Expected output*:*

Problem and Vulnerability Matrices for Livelihood Zones are reviewed and validated.

2.2 Group work Tasks

Following introductory remarks, a presentation on problem analysis was given, together with an outline of the group work tasks to be carried out during the course of the workshop. The documentation for the exercise was then handed out to the participants. The groups were issued with a Problem and Vulnerability Matrices covering 3 – 4 Livelihood Zones (LZs). The Problem Matrices (PMs) presented problems causing specific food security and nutrition outcomes in each LZ. (FOR AN EXAMPLE SEE ANNEX 4 BELOW). The Vulnerability Matrices compared the current phase classification with a qualitative picture of structural vulnerability (FOR AN EXAMPLE SEE ANNEX 5 BELOW). The five groups were assigned the basic tasks of:

- Reviewing and validating the PMs and VMs.
- Preparing a short statement of the current food security and nutrition situation in the LZ in question

And

- Preparing a short statement on the likely future situation in 2011, looking at factors likely to have an impact on 2011 (e.g. La Nina).

The groups were then invited to give presentations to the plenary session of their conclusions and observations. Time constraints however meant that not all groups were able to present in each plenary session.

2.3 Presentation of group work and discussions (Only Groups A and D presented).

Group A **presented the results of a review of PMs and VMs for IDPs in the Afgoye corridor: the following comments were noted;**

- **IDPs in the Livelihood Zones reviewed have better opportunities than stated on the PM, It was estimated that 30% are employed.**
- **Given that the harvest has not yet entered the markets fully, so the prices are expected to go down, once further supplies are received so high market prices should not be so much of a limiting factor to food access.**
- **La Niña will affect the harvest and the market prices over the coming Deyr and Gu seasons, although in neighbouring regions there is surplus production.**
- **It was pointed out that the table is a current analysis; not a forecast and should therefore not be taking La Niña into account at this stage.**
- **Dietary diversity is average and not low as was stated in the PM.**

Group D ***Presented the results of a review of PMs and VMs for the Juba Riverine LZ.***

The following comments were noted:

- The severity of household food insecurity is illustrated by the fact that it is normal practice for households to eat crops in the 'green' stage, as there is nothing else to eat. This reduces the size of harvest, incomes and seed availability for planting during the next season.
- Inflation should be a structural cause and not an underlying cause.
- The number of returnees have also contributed to a worsening of the present food security situation
- Many people are involved in off-farm activities, charcoal burning is common, with negative consequences for the environment.
- The VM was felt to add a further dimension to the analysis as it clearly showed that the problems in Juba riverine are longstanding and chronic in nature. One or two seasons of good rainfall would not be sufficient to rebuild assets.

<u>Views and comments on formats and structures:</u>

- *In the problem analysis there is a clear identification on wealth breakdown, although some of the baselines provided by FSNAU on this are about 11 yrs old, making it difficult to use them for designing responses to shocks The baselines need to be updated before they can become a useful tool for planning*
- *Some participants questioned the statements on some of the PMs such as* "food availability – currently not a crisis issue". *It was therefore necessary provide further explanation or use alternative wording to avoid confusion.*
- The use and value of vulnerability ranking and its significance was not immediately apparent to all participants. The ranking is designed to give an overall idea of vulnerability of a population/area, by combining two components, exposure to hazards as well as the level of the peoples' coping capacity. It was explained that if interventions are based solely on the current phase classification, this will not give the depth which is obtained through looking at trends using a VM tool.
- Concern was raised over the level of subjectivity of the VM tool. The process used to arrive at an overall figure varied from group to group. Furthermore the choice of scores 1, 2, 3 etc tended to be subjective. It was explained that the aim is to develop a tool that is easy to use and fairly accurate, and some improvement still needs to be made.

3. Objective formulation and identifying entry points for response

3.1 Objective of Session:

To develop SMART objectives and response options for populations in Livelihood Zones on the basis of the problem and vulnerability analysis.

Expected output:
SMART objectives and response options are completed for at least one livelihood zone per working group [this is effectively 3 columns in the CAP cluster response plan]

3.2 Group Work Tasks:

Participants were asked to turn key problems identified in the previous session into objectives. After doing this they were to develop Objectively Verifiable Indicators (OVIs) for the objectives and corresponding response options. All this was to be done for at least one LZ per group. Guidelines for developing the objectives and response options were presented to the participants (SEE ANNEX 6). Key issues explained to the participants included:

- Using outcome indicators
- Analysis of vulnerability
- Using immediate and underlying causes
- Making Objectives **SMART** (It was stressed that the objectives should be **S**pecific, **M**easurable, **A**chievable, **R**ealistic and **T**ime-bound).
- Listing relevant response options

Key questions to be considered during the group work

- Do the objectives relate to the identified food security and nutrition constraints and problems? – How?
- Are the objectives SMART?
- Do the response options relate to the SMART objectives?

3.3 Presentation of group work and discussions

Group E, presented the objectives and response matrix which they had developed (see Annex 3) The group explained the formulation of OVIs and how viable response options regarding the availability of food, livestock production, increase in household incomes and increase in agricultural production had been generated.

There was some discussion regarding how ambitious groups should be in setting objectives and what assumptions should be stated when formulating objectives. It was observed that the OVI need to be rephrased as they are more like objectives than indicators. The groups agreed on the need for an updated baseline and to relate the changes to a baseline wherever possible. It was stressed that the review of the baselines by FSNAU is currently ongoing.

4. Applying the Response Analysis Matrix and decision rules to response options

4.1 Objectives of Session:

- To evaluate response options against a list of criteria to determine their appropriateness and feasibility.
- To weed out response options using the "do no harm" principle, thereby arriving at a list of responses which are broadly appropriate and feasible.
- To indicate those responses which appear to be most appropriate and feasible

Expected output: A reduced set of response options which are appropriate and feasible for the food security and nutrition needs of target populations in selected livelihood zones.

4.2 Presentation on RAM:

The RAM tool provides an approach for the selection of appropriate and feasible response options to meet identified food security and / or nutrition objectives (SEE ANNEX 7 FOR AN EXAMPLE).

The RAM is divided into four stages as follows:

STAGE I: Conflict/civil insecurity / access category scores: This score relates to the intervention area / livelihood zone.

- *Purpose:* To classify geographical areas on the basis of actual or expected difficulty of physical access due to conflict.
- *Process*: Evaluation using a five level scoring system.

STAGE II: Appropriateness and Feasibility criteria: ,

Purpose: To score response options against a list of key criteria determining appropriateness and feasibility.

Process: ***A step-wise scoring against seven key criteria:***

A. Sensitivity to disruption from conflict.
B. Technical appropriateness.
C*. Timeliness.*
D. Technical / logistical capacity.
E. Probability of adverse impacts:
F. Ability to monitor and evaluate:
G. Overall cost of programme:

STAGE III: Exclusion or "Do No Harm" Criteria

- Purpose: To "weed out" response options which are likely to do harm to target populations or areas.
- Process: Application of a decision tree.

STAGE IV: Discrimination Criteria

- Purpose: To discriminate between response options which are unlikely to do harm to target populations or areas.
- Process: Application of a decision tree.

4.3 Discussion:

Participants gave their views on the RAM, comments and questions included the following*:*

- There are problems with some of the terms used in the document e.g. "gestation"'; "diffusion". The meaning of these and other terms is not clear.
- The various levels of (in) security need to be more clearly differentiated.

- The term “Appropriateness” might be replaced by “possible” or “relevant”.
- Visibility of assets does not correspond with their value. Some commodities may be highly visible but not necessarily valuable.
- With reference to the timeliness criterion, the timelines should be clarified; does the start date refer to the beginning of activities or the receipt of funds?
- What is involved when fully considering logistical capacity?
- The level of conflict we are prepared to accept in an area is partially dependent upon the urgency of the intervention which is being contemplated.
- Cost of project implementation should be replaced by return on investment. (i.e. some measure of cost versus benefit).
- It would be better to refer to outcomes rather than inputs when considering timeliness.
- The explanatory notes for the monitoring and evaluation tool need further elaboration. The emphasis needs to be more on evaluation. Is an intervention bringing about change? A mechanism for analysis needs to be selected which relates to the reality on the ground, rather than the linear approach involved in examining criteria discretely one by one. Are we talking about merely checking whether activities are on track or collecting quality information which will allow effective evaluation?
- It was observed that there was not a close enough relationship between the objectives and response actions. This would be addressed by making objectives more specific
- The agency specific factors should be replaced with a set of criteria which are more generally applicable.
- There was need to simplify the steps and procedures involved in compiling the response analysis matrix.
- The use of scoring allows checking for inconsistencies and for discussion among agencies that may be scoring differently. Concern was however expressed that some of the important qualitative considerations may be lost by over reliance on such a scoring system.

5. Conclusions

Before closing the workshop, participants were asked to share their opinions on the proceedings and specifically their thoughts on the utility of the tools which had been used.

- The approach was seen by some participants as useful as it encourages complementarity of approach between clusters and agencies. This in turn assists individual programmers. It was also seen as useful in standardizing the systems used by different clusters.
- Some participants saw response analysis as being effective, as it requires those involved to think strategically.
- One participant questioned the value of the RAF process, given that there had been three similar processes in relation to the three separate funding mechanisms. Other participants disagreed with this view.
- It was suggested that the tool cannot be used immediately; instead it should be piloted, preferably in a particular region, and then refined before being more widely adopted.
- It was suggested that a further workshop should be held in Somaliland involving local NGOs.

6. Summary and Next Steps

The workshop served as an initial screening of the tools for use response analysis, with many useful insights from participants into how such tools might be improved and further refined. The response analysis process was generally appreciated, given its potential to encourage systematic thinking and ensure a complementarity of approach between clusters. Response plans have been completed in respect of those livelihood zones which were the focus of group activities. These can be used to support clusters to provide a stronger justification for their respective submissions for the 2011 CAP, by ensuring clear linkages between background information, objective setting and the final options selected. The methodology can furthermore assist with supporting activities outside the CAP, notably strategic planning. Discussions will continue with FSNAU regarding the further development of causal tree outcomes within the response analysis framework.

A majority of participants supported the further development and testing of the tool within the cluster context. Agricultural Livelihood cluster members invited the RAST to facilitate the development of their 2011 cluster response plan using the tool. For the Nutrition cluster, the tool will be useful in terms of helping to screen CAP 2011 project profiles as CAP project sheets are prepared by agencies in the coming weeks. The Food Assistance cluster also provided useful comments which could help in the further development of the RAF. Both the Nutrition and Food clusters felt that as the RAF was just introduced while the CAP 2011 response planning process was already underway, it would be a challenge to try to use it for this year's process. Some cluster members felt that there was a need to further discuss the RAF and its applicability, the level at which it (particularly the RAM criteria) can best be applied (cluster or agency levels), and also to field test this before it could be used for actual planning processes.

Annex 1: List of Participants

	Name	Organization	Email Address
1.	Nick Haan	IPC Global support unit	Nicholas.haan@fao.org
2.	Francesco Baldo	FAO Somalia	Francesco.baldo@fao.org
3.	Habon Hussein	FAO Som	husseinh@un.org
4.	Agnes Shihemi	FAO Som	Agnes.shihemi@fao.org
5.	Sophycate Njue	FAO Som	Sophycate.njue@fao.org
6.	Abdullahi Mohamed Hersi	NAPAD	abdullahi@napad.org
7.	Marc Prost	WFP – Somalia	Marcandre.frost@wfp.org
8.	Mohamed Bashir	APD	Apd.has@yahoo.com
9.	Genevieve Chicoine	WFP Regional	Genevieve.chicoine@wfp.org
10.	Regis Chapman	WFP Somalia	Regis.chapman@wfp.org
11	Ahono Busili	FSNAU FAO	Ahono.busili@fsnau.org
12.	Fatuma Abdirahman	Oxfam Novib	Fatuma.abdirahman@oxfamnovib.or.ke
13.	Siobhan Foran	GENCAP	siobanforhan@yahoo.ie
14	Fabio Bedini	WFP (RAP)	Fabio.bedini@wfp.org
15.	Simon Renk	WFP Somalia (VAM)	Simon.renk@wfp.org
16	Leith Baker	OCHA	bakerl@un.org
17.	Ahmed Mohamed	HARDO	Foobey07@hotmail.com
18.	Mohiaddiin Moalim	SORRDO	muxyaddiinmc@hotmail.com
19.	Martin Nyamureya	VSF – Suisse	m.nyamweya@vsfsuisse.org
20.	Evelyn Njue	COOPI	evelyn@coopi.org
21.	Zahra M. Abtidon	GEELO	Geelo114@gmail.com
22.	Phyllis Oyugi	UNICEF	poyugi@unicef.org
23.	Osman Amir	SOADO	osmangedyahow@yahoo.com
24.	Suleiman Mohamed	RAST	Suleiman.mohamed@fao.org
25.	Neil Marsland	FAO Rome – RAST	Neil.morsland@fao.org
26.	John O'dea	RAST	John.odea@fao.org

27.	Ahmed Mohamed	FSNAU	Jaziira5@hotmail.com
28.	Abdulaziz Aden	FSNAU	Abdelaziz.aden@fsnau.org
29.	Yusuf Mire	FSNAU	ymire@yahoo.com
30.	Mumin Ali Osman	FSNAU	Mumin47@hotmail.com
31.	Mohamed Ibrahim Asser	FSNAU	mohameoudaser@yahoo.com
32.	Mohammed Abdi Borle	FSNAU/FAO	Mohammed.borle@fsnau.org
33.	Ali Omer Said	FSNAU/FAO	Gulal891@hotmail.com
34.	Jaquline George	Horn Relief	George@hornrelief.org
35.	Kayed Janazreh	UNDP	Kayed.janazreh@undp.org
36.	Ayoo Osen	FAO Som	Ayoo.odicoh@fao.org
37.	Joy Nasimiyu	FAO Som	Joy.nasimiyu@fao.org
38.	Nassin Watson	FAO Som	Nassin.watson@fao.org
39.	Laura Cramer	Independent	Cramer_laurak@yahoo.com
40	Ann-Sophie Porche	Health Cluster Chair	asporche@unicef.org
41	Keith Ursel	Food Cluster Chair	Keith.ursel@wfp.org

Annex 2: Timetable

INTER- CLUSTER RESPONSE ANALYSIS WORKSHOP REVISED AGENDA

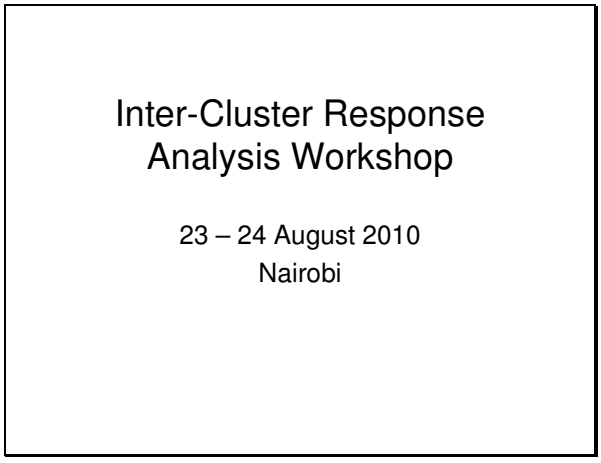
Monday August 23 2010: Problem analysis and identifying entry points for response

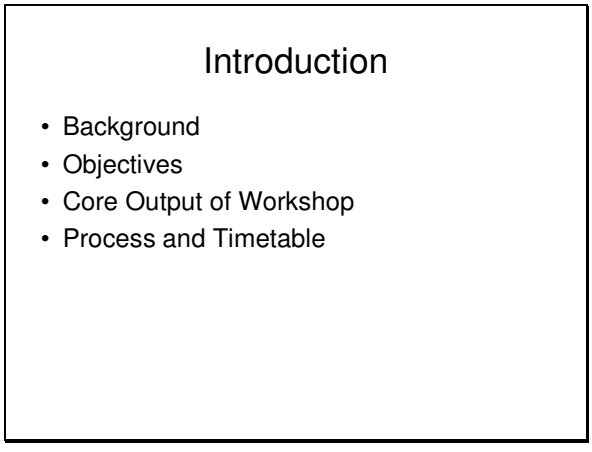
Timing	Topic
9.00 - 9.30	Introduction and objectives: (a) Objectives of workshop (b) Outline of RAF in the context of CAP 2011
9.30 – 9.45	Problem/Cause analysis and vulnerability analysis - Introduction
9.45 – 11.00	Group work: Review of the Problem and cause analysis and vulnerability analysis information; *(participants take their tea/coffee during group work)*
11.00 – 12.30	Presentation and discussion of group work
12.30 – 14.00	Lunch break
14.00 – 16.15	Objective formulation and identifying entry points for response – Introduction followed by Group work to identify and formulate objectives and response options
16.15- 16.30	Break
16.30 – 17:30	Presentation and discussion of groups work / continuation of group work (depending on progress)

Tuesday August 24 2010: Response Options Selection

Timing	Topic
8.30 - 9.30	Presentation and discussion of group work continued
9.30 – 10.00	Applying the Response Analysis Matrix and decision rules to response options: Presentation
10.00 – 13.00	Group work: Applying the RAM and decision rules to the response options listed in day 1 *(participants take their tea/coffee during group work)*
13.00 – 14.00	Lunch
14.00 – 16.00	Plenary – feedback discussion
16.00 – 16.15	Break
16.15 – 17.00	Next Steps, Review and evaluation

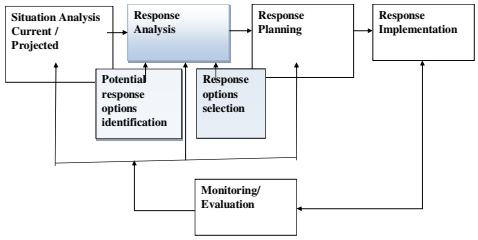
Annex 3 - Presentations





Background

Adapted from IPC Manual



Background

- Role of RAST – to facilitate response options analysis amongst food security and nutrition stakeholders operating in Somalia
- Key tool: development of Response Analysis Framework
- CAP 2011 process: a critical planning period for Agricultural livelihoods, Food Assistance and Nutrition clusters
- Building on FSNAU information and the IPC analysis

Objectives

- 1. To facilitate development of cluster response plans for the 2011 CAP using a process of response analysis.
- 2. To test and refine a draft Response Analysis Framework.
- 3. To help lay the ground for a sustainable application of the Framework as an integral part of cluster activities.

Core Output

- CAP 2011 Objectives, indicators and response options relevant for each of the three clusters identified for **AT LEAST 5** Livelihood Zones in Somalia

Structure of the Workshop

- Three basic steps, each with key outputs:
- **Step 1:** The workshop will start with a validation and discussion of the LZ problem and vulnerability matrices. (Day 1 – AM)
- **OUTPUT:** Reviewed and validated problem and vulnerability matrices for ALL of Somalia

Process of the Workshop

- **Step 2:** Elaboration of objectives, OVI formulation and response options formulation.
- **OUTPUT:** Reviewed and validated Objectives, OVIs and response options for AT LEAST 5 Livelihood zones.

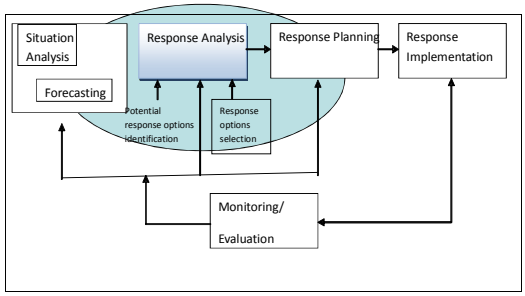
Process of the Workshop

- **Step 3:** Application of the Response Analysis Matrix and decision rules to the response options listed in step 2.
- **OUTPUT:** Reviewed and validated multi-cluster OVIs and response options for AT LEAST 5 Livelihood zones.

Process of the Workshop

- **In addition:**
- **Cross – cutting Step:** Constant review of the pilot Response Analysis Framework.
- **OUTPUT:** Workshop evaluation.

Workshop scope



Timetable

Timing	Topic
9.00 - 9.30	Introduction and objectives: (a) Objectives of workshop (b) Outline of RAF in the context of CAP 2011
9.30 – 9.45	Problem/Cause analysis and vulnerability analysis - Introduction
9.45 – 11.00	Group work: Review of the Problem and cause analysis and vulnerability analysis information; *(participants take their tea/coffee during group work)*
11.00 – 12.30	Presentation and discussion of group work
12.30 – 14.00	Lunch break
14.00 – 16.15	Objective formulation and identifying entry points for response – Introduction followed by Group work to identify and formulate objectives and response options
16.15- 16.30	Break
16.30 – 17:30	Presentation and discussion of groups work / continuation of group work (depending on progress)

Timetable

Timing	Topic
8.30 - 9.30	Presentation and discussion of group work continued
9.30 – 10.00	Applying the Response Analysis Matrix and decision rules to response options: Presentation
10.00 – 13.00	Group work: Applying the RAM and decision rules to the response options listed in day 1 *(participants take their tea/coffee during group work)*
13.00 – 14.00	Lunch
14.00 – 16.00	Plenary – feedback discussion
16.00 – 16.15	Break
16.15 – 17.00	Next Steps, Review and evaluation

Problem and Vulnerability analysis

Objectives and Outputs of session

- OBJECTIVE: To review, critique and improve Livelihood Zone problem and vulnerability matrices.
- OUTPUT: **All** LZ problem and vulnerability matrices are reviewed and validated.

Process and Timeframe of session

- PROCESS: Presentation followed by facilitated group work and plenary.
- TIMEFRAME: 3 hours.

Introduction

- Problem and vulnerability analysis done by FSNAU staff and facilitated by RAST (10 – 20 August).
- Triangulated against published current and historical FSNAU data.

FSNAU/RAST - Cause Analysis Sheet

Livelihood Zone: Juba Riverine
Region: Lower and Middle Juba
Phase Classification: HE – 100% Poor; AFLC – 50% Middle; Rest BFI??
Population in Phase: Population in Crisis: (35% +(50%of50%)of 116309 = 69,785

OUTCOME	PROXIMATE CAUSES	UNDERLYING CAUSES	STRUCTURAL FACTORS
Food Security			
- Availability *(Currently a limiting factor in the region, but not the main)*	- General reduction in food availability in the area due to below normal production;	- General lack agricultural inputs/investments; - Damaged standing crops; - Flooding; - Degraded river embankments and silted irrigation canals; - Poor road infrastructure - Risky food storage systems;	- Chronic poverty; - Lack of institutions to support agricultural development; - Perennial cyclical drought and flooding problems;
- Access *(Highly constrained for poorer households <2100kcal through asset stripping, wasting)*	- Low income levels/poor purchasing power; - Depleted food stocks/destroyed underground stocks; - Low own crop production; - Expected food price increases;	- Poor access to wage-labor opportunities; - Indebtedness - Reduced opportunities for charcoal burning and other bush products for sale; - Reduced crop production limiting sale; - Current and frequent flooding - Weakened river embankments - Frequent droughts - Same problems as in causes of "Availability" problem - Low production in the area; **NB: poor households dependent on market purchase (improved zakat support)**	- Chronic conflict/insecurity; - Institutional absence for: o Agricultural services; o Irrigation services; o Natural resource management - State collapse

	LIVELIHOOD ZONE	PHASE CLASSIFICATION	Past classifications (past 11 seasons)	VULNERABILITY RANKING (general)		
				A:Exposure to Risk (5=high; 1=low)	B: Ability to Cope (5=low; 1= high)	Vulnerability (AxB) worst= 25)
1	Juba Riverine *(Kismayo, Jamame, Jilib, Buale, Sakow Salagle)*	HE = 100% Poor; 50% Middle Sakow; 25% Middle in Jamame and Jilib	4/11 HE 4/11 AFLC 3/11 BFI	***4*** *River floods, drought, high prices/ inflation; Civil insecurity; crop pests & diseases; human diseases, poor water quality*	***5*** *Weak coping ability - Agric labor, subsistence farming; very weak social support; labor migration to Kismayo; Charcoal*	*20*

Group work

- 5 groups:
- Each group takes 3-4 LZs and review and validate corresponding problem and vulnerability matrices. Groups should be comprised as follows:
- Each group to have at least one cluster representative from each of the three clusters.
- Each group to have one senior analyst from FSNAU – who will help facilitate.
- Other participants to be spread out amongst the groups

Group work

- TASK:
  - **FIRST:** formulate a statement for the LZ on the basis of the outcome indicators (which cover now and imminent – i.e. next 6 months). For example:
- *"This is a population in crisis, Phase 4, 50% of poor in HE. Serious food access problem, food availability problem minor, very high GAM rates, with acceptable mortality rates".*

Group work

- TASK:
  - **SECOND:** Look at aggravating and mitigating factors likely to have an impact on the current picture in 2011: e.g. la nina; look at scenarios for 2011 CAP, and make a statement for 2011. For example:
- *"The most likely scenario for those in HE / AFLC in this zone in 2011 is a worsening of the current situation during the first half of 2011. Food access problems and malnutrition rates are likely to worsen with increased numbers of the poor and middle groups falling into HE and AFLC"*

Group work

- TASK:
  - **THIRD:** Go back to the problem and vulnerability matrices and reflect on their validity / utility for 2011. The , they should be reviewed and corrected on the basis of an understanding of historical, current and probable future (2011) causes of food security and nutrition outcomes.

Group work

- 75 MINUTES
- Task 1: Current statement
- Task 2: Statement for 2011
- Task 3: Review of problem and vulnerability matrices
- 3 - 4 Problem Matrices
- 3 – 4 Vulnerability Matrices
- 15 MINUTE PRESENTATION AND DISCUSSION

From problems and vulnerability to objectives and response options

Objectives and Outputs of session

- OBJECTIVE: To develop SMART objectives and response options for populations in LZs on the basis of the problem and vulnerability analysis.
- OUTPUT: SMART objectives and response options are completed for at least ONE LZ per working group.
- This is effectively 3 columns in the CAP cluster response plan

Process and Timeframe of session

- PROCESS: Presentation followed by facilitated group work and plenary.
- TIMEFRAME: 2- 3 hours, depending on progress.

Introduction

- Example done by RAST with inputs / guidance from other colleagues.

Using outcome indicators

- Step 1: Review outcome indicators – which ones are limiting factors to food security? Is there a nutrition problem?
- Step 2: If there is a nutrition problem, how severe is it? (as indicated by GAM and SAM rates.
- Step 3: If critical or above then one objective should directly address the outcome e.g.: “Reduce GAM / SAM rates by X% by XX ”.

Using outcome indicators

- Step 4: Is there a serious food access or food availability constraint?
- Step 5: If yes then another objective should directly address the immediate food access problem e.g. “Immediately improve access to food for XX population”.

Bringing in analysis of vulnerability

- Review the current food insecurity/ malnutrition in the context of vulnerability;
- Hawd and Addun have a combination of current crisis and medium to high vulnerability caused by repeated and consecutive shocks.
- Therefore, interventions should target not just current outcomes but also underlying causes to reduce vulnerability and build resilience.

Using immediate and underlying causes

- Step 1: Are there immediate and/or underlying causes that can be addressed within the planning period to cause positive changes in outcomes? (January – December 2011 for CAP)
- Step 2: Which are the most important causes to address to achieve the most significant outcome?

Making Objectives SMART

- Specific
- Measurable
- Achievable
- Realistic
- Time-bound

Some examples

- "To reduce GAM rates in both Hawd and Addun pastoral livelihood zones."

SMART:

- "GAM rates in Hawd and Addun reduced to 15% or below by end of December 2011".

Some examples

- "Restore and maintain household herd size among poorer groups"

SMART:

- "By the end of December 2011, average goat and sheep flock owned by poor households facing HE increased by 30%"

Listing **relevant** response options

- Response options should be listed next to the SMART objective.
- They can be derived to some degree from the problem analysis
- They should be relevant to the SMART objective

RECAP: Session parameters

- **OBJECTIVE:** To develop SMART objectives and response options for populations in LZs on the basis of the problem and vulnerability analysis.
- This is effectively 3 columns in the CAP cluster response plan
- **OUTPUT:** SMART objectives and response options are completed for at least ONE LZ per working group.
- **PROCESS:** Presentation followed by facilitated group work and plenary.
- **TIMEFRAME:** 2- 3 hours, depending on progress.

Key qns for group work

- Do the objectives relate to the identified food security and nutrtion constraints and problems? – How?
- Are the objectives SMART?
- Do the response options relate to the SMART objectives?

The Response Analysis Matrix

What is the RAM?

- A step-wise tool to allow selection of appropriate and feasible response options to meet identified food security and / or nutrition objectives.

Objectives and Outputs of session

- OBJECTIVE:
- 1. To evaluate response options against a list of criteria to determine their appropriateness and feasibility.
- 2. To weed out response options using the "do no harm" principle, thereby arriving at a list of responses which are broadly appropriate and feasible.
- 3. To indicate those responses which appear to be most appropriate and feasible

Objectives and Outputs of session

- OUTPUT:
- A reduced set of response options which are appropriate and feasible for the food security and nutrition needs of target populations in selected LZs.
- NOTE: In the workshop, all considerations to be looked at through a "Cluster lens".

Process and Timeframe of session

- PROCESS: Presentation followed by facilitated group work and plenary.
- TIMEFRAME: 3 - 5 hours, depending on progress.

RAM overview

- 4 main steps or stages:
- **STAGE I:** Conflict/civil insecurity / access category scores: This score relates to the intervention area / LZ. It is irrespective of the type of intervention.
- **STAGE II:** Appropriateness and Feasibility criteria. This is the main part of the RAM. Here, different aspects of each response option are evaluated and scored. Responses are scored 1 – 5 (or 1 – 6 in the case of conflict / access).

RAM overview

- **STAGE III:** Exclusion or "Do No Harm" criteria. One of the core principles of humanitarian action is to do no harm to targeted populations. This stage of the RAM is designed to weed out those response options which fall foul of this principle.
- **STAGE IV:** Discrimination criteria. The final stage of RAM scoring is to use the overall scores from all the criteria to discriminate between options if required.

RAM stage I: Access / Insecurity

- **Purpose:** To classify geographical areas on the basis of actual or expected difficulty of physcial access due to conflict.
- **Process:** Evaluation using a five level score.

RAM stage II: Appropriateness and Feasibility Criteria

- **Purpose:** To score response options against a list of key criteria determining appropriateness and feasibility.
- **Process:** A step-wise scoring against seven key criteria.

RAM stage II: Appropriateness and Feasibility Criteria

- *A. Sensitivity to disruption from conflict.*
- A 2 stage scoring process:
- Stage 1: Binary (yes / no)
- Stage 2: Summing of binary scores

RAM stage II: Appropriateness and Feasibility Criteria

- *B. Technical appropriateness.*
- The response may or may not be costly, complicated to undertake and highly visible **but irrespective of this** is, is it a *technically appropriate response* to tackle the core concern(s) (objectives) considering the livelihood group and condition?
- 1= Highly appropriate technically; 5 = Highly inappropriate
- Several considerations: see handout

RAM stage II: Appropriateness and Feasibility Criteria

- *C. Timeliness.*
- What is the likelihood of the intervention achieving significant impact within the time period (as defined by the objective and the planning horizon).

RAM stage II: Appropriateness and Feasibility Criteria

- *D. Technical / logistical capacity.*
- What is the current or likely ability of the agency / cluster to carry out the required function?
- NOTE: This is purely a logistical and technical question at this point – do not consider insecurity / conflict at this point.

RAM stage II: Appropriateness and Feasibility Criteria

- *D. Technical / logistical capacity.*
- What is the current or likely ability of the agency / cluster to carry out the required function?

RAM stage II: Appropriateness and Feasibility Criteria

- *E. Probability of adverse impacts:*
- Does the intervention have a negative impact on the beneficiaries (e.g. environmental, conflict, create dependency, etc?)

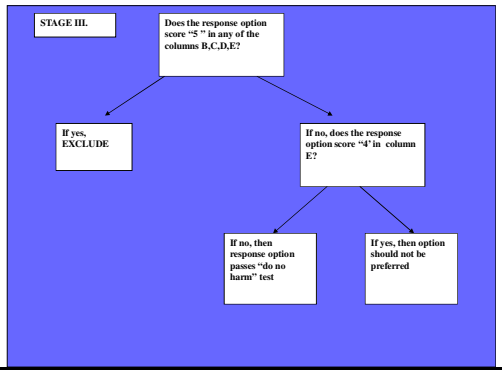
RAM stage II: Appropriateness and Feasibility Criteria

- *F. Ability to monitor and evaluate:*
- Several issues to consider here, some relate to the other criteria – e.g the security situation.

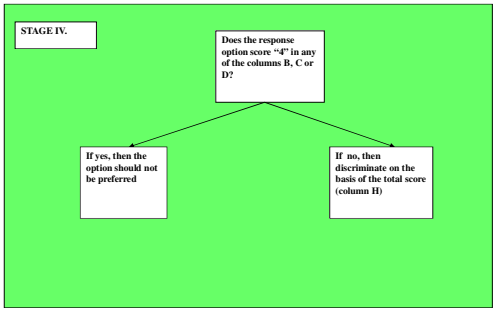
RAM stage II: Appropriateness and Feasibility Criteria

- *G. Overall cost of programme:*
- A qualitative estimate, based on experience.

RAM stage III: Exclusion or "Do No Harm" Criteria



RAM Stage IV: Discrimination Criteria



RECAP: Objectives and Outputs of session

- OBJECTIVE:
- 1. To evaluate response options against a list of criteria to determine their appropriateness and feasibility.
- 2. To weed out response options using the "do no harm" principle, thereby arriving at a list of responses which are broadly appropriate and feasible.
- 3. To indicate those responses which appear to be most appropriate and feasible

RECAP: Objectives and Outputs of session

- OUTPUT:
- A reduced set of response options which are appropriate and feasible for the food security and nutrition needs of target populations in selected LZs.
- NOTE: In the workshop, all considerations to be looked at through a "Cluster lens".
- TIMEFRAME: 3 - 5 hours, depending on progress.

Annex 4: Example Problem Analysis Matrix

Region: Hiran
Livelihood Zone: Hiran Riverine
Phase Classification: 100% of Poor and 100% of Middle in HE; Rest in BFI
Population in Phase:
Population in Crisis: 100% Poor and 100% Middle

OUTCOME	PROXIMATE CAUSES	UNDERLYING CAUSES	STRUCTURAL FACTORS
Food Security			
- Food Availability *Food availability is a constraining factor but not the primary constraining one*	• *Low production in Hiran* • ***Market disruption due to conflict*** • Reduced supply from Southern regions • Limited supply from Ethiopia	- Poor performance of rainy season - Flooding caused by heavy rains and degraded river banks. - Poor irrigation infrastructure, and siltation of water catchments - Land cultivation and productivity reduced due to lack of tools, seeds, pumps - Pests and diseases - Invasive perennial grasses - Poor state of road infrastructure	- Non-existent agricultural extension - Lack of institutions - Chronic lawlessness
- Food access Food access is main constraining food insecurity factor among riverine communities	• Reduced incomes • low food and cash crop production	- reduced labour opportunities and competition from IDPs - reduced access to social support - insecurity restricts labour opportunities *Same causes as above (under availability)* - Flooding caused by heavy rains and degraded river banks. - Poor irrigation infrastructure, and siltation of water catchments - Land cultivation and productivity reduced due to lack of tools, seeds, pumps - Pests and diseases - Invasive perennial grasses - Poor state of road infrastructure - access reduced through cumulative effects of conflict, droughts, flooding	As above NB: **poor and middle groups engaged in distress coping strategies, which are distressing livelihoods**
Nutrition Outcomes • Nutritional Situation: **Very Critical** with total acute malnutrition (MUAC<12.5/oedema) rate of **18.5 (18.2-18.8)**			

• **Severe acute malnutrition (MUAC<12.5 cm/oedema) of 4.6 (4.4-4.8)**			
- Food/care-based	- Deficient dietary intake - Poor food access (see above) - Poor feeding practices	- caring mother time constraints - poor practices of care givers	- Female education deficient due to institutional failures
- Health-based (No disease epidemic reported)	- Increased incidences of whooping cough (outbreak), AWD, measles, ARI - Unsafe water - Poor hygiene conditions - high quality medicines not available	- safe sources destroyed by conflict; natural hazards -insecurity limits service provision and outreach - counterfeiting not tackled	- non-existent institutions - conflict
- Mortality		-	-

Annex 5 – Vulnerability Matrix - Example

REGION(S): Hiran

	LIVELIHOOD ZONE	Population size	PHASE CLASSIFICATION	Past classifications (past 11 seasons)	VULNERABILITY RANKING (general)		
					A: Exposure to Risk (5=high; 1=low)	B: Ability to Cope (5=low; 1= high)	Vulnerability (AxB) worst= 25)
1	Hawd Pastoral (*Beledweyn district -mataban area*)	30,126	100% poor HE - 50% middle HE; 50% middle AFLC Better off - BFI	5/11 – HE *(consecutive, immediate)* 2/11 – AFLC 4/11 – BFI	***3*** *Drought and conflict* *Livestock ban* *Livestock disease* *Falling livestock prices*	***3*** *Pastoralists can move (good) but water shortage (bad) and restrictions on movement (bad)* *Livestock sales*	*9*
2	Southern Inland Pastoral *(all districts)*	61,660	50% poor HE 50% poor AFLC Rest - BFI	4/11 – HE *(consecutive, immediate)* 1/17 – AFLC 6/17 – BFI	***3*** *Drought and conflict* *Livestock prices falling* *Animal diseases*	***3*** *Pastoralists can move (good) but water shortage (bad) and restrictions on movement (bad)* *loans*	*9*
3	Hiran Riverine *(All districts - Beledweyne, Bulo Burte, Jalalaqsi)*	32,782	100% poor HE 100% middle HE Better off - BFI	8/11 – HE (consecutive, immediate); 2/11 – AFLC; 1/11 – BFI	***4*** *Drought, floods, conflict* *Market disruption* *Crop pests* *Displacement* *Rising food prices* *Human diseases*	***3-4*** *e.g.: Farms in other areas, fodder sale; bush products, migration to towns, labour opportunities (poor social support), etc*	*14*

	LIVELIHOOD ZONE	Population size	PHASE CLASSIFICATION	Past classifications (past 11 seasons)	VULNERABILITY RANKING (general)		
					A: Exposure to Risk (5=high; 1=low)	B: Ability to Cope (5=low; 1= high)	Vulnerability (AxB) worst= 25)
4	Hiran Agropastoral *(All districts)*	136,130	100% poor HE 75% middle HE 25% middle AFLC Better off - BFI	7/11 HE (consecutive) 2/11 AFLC; 2/11 BFI	*3-4* *Rain failure/ drought; conflict; Crop pests* *Rising food prices* *Charcoal production (environmental degradation*	*3-4* *Can migrate with livestock- but numbers of lstock reduced; charcoal and bush products; labour possibilities; social support*	*12.5*
5	Total	260,698					

Annex 6 - Objectives and Response Options: EXAMPLE

Livelihood zone: Gedo-Southern Agro pastoral

Current phase and affected population group(s): Forecast for 2011:

1	2	3	4	5	6	7	8	8	9	10
Objective	Objectively Verifiable Indicator (OVI)	Response Options								
Address outcomes and immediate causes										
To improve the nutrition situation	By Dec 2010, have malnutrition rate below 20% for the Gedo Southern Pastoral	• BSFP for 3 months Sept to Nov for all children under 5 of the livelihood • X TSFP centre open treating Y number of children • X OTP centre open treating Y number children								
To improve access to food	By Dec 2010, poor segment of population is out of HE	• Cash for work to extend lands, embankment of rivers during harvest (Aug, Sept, Oct) • Cash relief if work not possible during the same month • If required, food relief or FFW during the lean months (Nov, Dec)								

To increase food availability and long term resilience for the poor segment of the population	**Specialist needed** By July 2011, increase livestock holding to Z By July 2011, increase access to tools and seeds	• Restocking for 50% of the HE population • Provide seeds, tools and knowledge for 50% of the HE population								
• ***Address Underlying Causes***										
		• Providing care, hygiene practice education at the centres								

1) Specialized organization based or accessing Gedo that have both the funds and the technical capacity/knowledge to provide such services
2) Local authorities support these interventions and the specialized organisations

Annex 7 – Response Analysis Matrix: EXAMPLE

Livelihood zone: Southern Inland Pastoral (Bakool and Hiran regions)

Current phase and affected population group(s):

This is a population in crisis, Phase 3/4. 25% Poor HE; 50% Poor AFLC in Bakool; In Hiran (50% poor in HE and 50% poor in AFLC).Food availability is *a limiting factor with less food access, very critical nutrition situation and poor food/care, with acceptable morbidity rates.*

Forecast for 2011:

The most likely scenario for this livelihood zone is a worsening of the current situation during the first half of 2011. Since Hiran is a border/conflict area a number of factors may worsen the situation. These factors include La Nina, market situation, displacement, less humanitarian space. Food access problems and malnutrition rates are likely to worsen with increased numbers IDPs .Morbidity will remain unchanged.

Conflict Category: 3 *(Conflict is localized in Beletweyne)*

1	2	3	A Sensitivity to disruption from conflict	B Technical effectiveness	C Timeliness	D Technical and logistical capacity to implement	E Probability of adverse impacts	F Ability to monitor and evaluate	G Overall cost of program	H Total
Objective	**(OVI)**	**Response Options**								
-To increase food access by X% for vulnerable groups in Bakool and Hiran regions by Dec 2011.	No. of households that receive core breeding stock by Dec 2011	Redistribution /recovery of livestock assets	3	2	3	2	3	2	3	18
	No. of animal that receive vaccination by Dec 2011	Protect livestock assets through mass vaccinations.	3	1	1	2	2	2	4	15
	No of water points rehabilitated through CFW by Dec 2011	Rehabilitation of water points and rangelands through Cash for Work	4	3	2	2	1	2	2	16

2-To reduce malnutrition rates in Bakool and Hiran regions by x% in U5's by Dec 2011	% change in no. of children U5 consuming 4 food groups by end of Dec 2011	Conduct cooking lessons and training on food diversification to caregivers/	2 (Behavioural change takes a while)	2	3	2	1	2	2	14
	% increase of care givers aware of key appropriate IYCF practices by end of Dec 2011	Conduct training on IYCF practices for caregivers	2	1	3 (Behaviour Change takes a while)	2 (TOT exist however there needs to be enough time invested to train the TOTs before they can pass the knowledge to caregivers)	1	2	2 (IEC materials exist and may only need to be translated and reproduced)	13
	No. of households that purify water for drinking by end of Dec 2011	Distribute water purification tablets and demonstrate their use in order to improve access to safe water to reduce sanitation related diseases.	1	1	2	2	2 (Likeliness of over or under utilization of chlorine)	2	3	13

Address outcomes and immediate causes										
Improve livelihoods of pastoral groups	No. Of households that increase their cost of minimum basket by end of DEC 2011	Cash interventions (CR, CFW, Vouchers)	3	2	2	2	3	3 End use of cash (except for vouchers)may not be verified	4 CR and CFW are very expensive compared to voucher distribution.	19
	No. of households that access food through food distribution programs by end of DEC 2011.	Food Distribution (FFW,FR)	2	5 Beneficiaries should be encouraged to sustainably produce food	2	2	5	3	4	**23**
Address Underlying Causes										

Annex IV: Facilitation guide for CAP Response Options Analysis Workshop for Agricultural Livelihoods, Food Assistance and Nutrition Clusters.

Objectives of the workshop
1. To facilitate development of cluster response plans for the 2011 CAP using a process of response analysis.
2. To test and refine a draft Response Analysis Framework.
3. To help lay the ground for a sustainable application of the Framework as an integral part of cluster activities.

Process of the workshop
The workshop will consist of a series of short presentations, group work and plenary discussions.

Overall logic of the workshop
Step 1: The workshop will start with a validation and discussion of the LZ problem and vulnerability matrices. (Day 1 – AM)

Step 2: Elaboration of objectives, OVI formulation and response options formulation. In this step, an understanding of the vulnerability analysis is mainstreamed into the selection of objectives. (Day 1 – AM and PM)

Step 3: Application of the Response Analysis Matrix and decision rules to the listed response options (Day 2).

Day 1: Problem Analysis, Identifying Objectives and Response Options

9.00 – 9.30: Introduction and objectives:
Key points:

- Workshop is marrying of two processes: RAST development of RAF and Cluster response plans with a particular emphasis on 2011 CAP.
- Workshop is a starting point: in relation to the development of cluster response plans and more generally in terms of integrating the use of a Response Analysis Framework into the work of the clusters as we move forward.
- Objectives: (as above)
- Outline of process (see above)
- **Expected output of workshop: Objectives, indicators and response options identified for at least 5 LZs in crisis. It is possible that more will be completed.**
- Participant expectations

9.30 – 9.45: Problem/cause analysis and vulnerability analysis presentation:
Key points:

- Present example of problem analysis matrix and go through it explaining the different aspects
- Show a problem tree to illustrate the background

- Present example of vulnerability matrix and explain it
- Explain that this information came from FSNAU: field teams, senior analysts, current post Gu analysis and past analyses. Explain how and why the LZs were formed. Explain that some of the LZs are in BFI and that these are to be included – and give justification, needs to be in terms of vulnerability.
- Explain the interaction of the phase classification, problem matrix and vulnerability matrix.
- **Explain the task: Review and validation of the problem and vulnerability matrices.**
- Explain the process for the group work: 5 groups formed. Each group takes 3-4 LZs and review and validate corresponding problem and vulnerability matrices. Groups should be comprised as follows:

1. Each group to have at least one cluster representative from each of the three clusters.
2. Each group to have one senior analyst from FSNAU – who will help facilitate.
3. Other participants to be spread out amongst the groups
4. 6 Facilitators: (3 RAST and 3 Senior FSNAU analysts, Abdi Razak, Jezeera, Abdul Aziz- urban / IDPs).

9.45 – 11.00: Group work: Review of problem analysis and vulnerability analysis:

Materials required:

A. CORE materials:

- Problem Matrices (PMs) per LZ
- Vulnerability Matrices (VMs) per LZ

B. Background materials:

- LZ problem trees
- HEA Baselines
- Latest IPC maps – to be stuck on wall today
- Latest Nutrition maps – to be stuck on wall today
- IPC definitions – to be stuck on wall today
- LZ maps – as above
- OCHA scenarios for 2011

Task and Process:

- Groups have 1 – 2 laptops and 1 projector, each group has soft copies of 3 PMs and 3 VMs (NOTE: SEE ANNEX FOR SUGGESTED GROUP COMPOSTION AND PM AND VM ALLOCATIONS).
- **Go through the materials, making additions, corrections etc very clearly on the soft copies (suggest these should be highlighted in yellow) so they can be recognized.**
- **MINIMUM OUTPUT: ONE FULLY REVIEWED AND PRIORITISED PROBLEM MATRIX AND ONE FULLY REVIEWED VULNERABILITY MATRIX.**
- Also one flip chart, pens, blutack.
- Appoint recorder, rapporteur.
- 25 mins each for each PM + VM = 75 mins.
- Prepare for 15 min presentation

STEPS for the groups:

1. First formulate a statement for the LZ on the basis of the outcome indicators (which cover now and imminent – i.e. next 6 months). For example:

"This is a population in crisis, Phase 4, 50% of poor in HE. Serious food access problem, food availability problem minor, very high GAM rates, with acceptable mortality rates".

2. Look at aggravating and mitigating factors likely to have an impact on the current picture in 2011: e.g. la nina; look at scenarios for 2011 CAP, and make a statement for 2011. For example:

"The most likely scenario for those in HE / AFLC in this zone in 2011 is a worsening of the current situation during the first half of 2011. Food access problems and malnutrition rates are likely to worsen with increased numbers of the poor and middle groups falling into HE and AFLC"

3. Go back to the problem and vulnerability matrices and reflect on their validity / utility for 2011. The , they should be reviewed and corrected on the basis of an understanding of historical, current and probable future (2011) causes of food security and nutrition outcomes.

Process:

11.00 – 12.30: Presentation and discussion of group work

Process:

- Each group has 15 mins for presentation and discussion. The key point here is to pick out the main points of disagreement / modification to the PMs and VMs. This should be presented for discussion in plenary.

12.30 – 14.00: LUNCH

Facilitation team meet and share out corrected and validated PMs and VMs for finalisation in preparation for afternoon session.

14.00 – 14.15: Objective formulation, OVIs and Response Options – Presentation

Key points:

- Explain the objectives of the exercise: **to formulate an Objective Matrix (OM) consisting of narrative wording of objective; SMART objectives and; a list of response options relevant to achieving each objective.**
- Explain that this will help the clusters develop their 2011 response plans: Effectively a first cut at the response plan.
- Show example(s) of converting problem matrix into objective.
- Show example of how to make the objective SMART
- Indicate the response options relevant for achieving the objective.
- (NOTE: The above bullet points could be done through a ppt where each bit of the OM is revealed sequentially).
- In all of the above, show the difference between objectives addressing outcomes, immediate causes, underlying causes. Also demonstrate how the use of the vulnerability matrices and the PROJECTIONS re. 2011 are important in developing the objectives with specific emphasis on the group(s) in crisis.
- DISTRIBUTE METHODOLOGICAL GUIDE FOR GROUPS,

14.15 – 16.15: Group Work: Objective formulation, OVIs and Response Options.

Materials required:

A. CORE materials:

- Corrected and validated Problem Matrices (PMs) per LZ
- Corrected and validated Vulnerability Matrices (VMs) per LZ
- Example of converting problem tree into SMART objectives with response options.
- Empty Response Analysis Matrices (RAMs)

B. Background materials:

- LZ problem trees
- HEA Baselines
- Latest IPC maps
- Latest Nutrition maps
- LZ maps
- 2010 CAP MYR Cluster response plans
- Best, worst most likely case scenarios for 2011 CAP.
- Vulnerability matrix (3x3 or 2x2)

Task:

- Record all objectives, OVIs and response options on blank RAM for presentation .

16.30 – 17.30: Presentation and discussion OR continuation of group work, depending on progress:

Process:

1. Each group has 10 - 15 mins for presentation and discussion. They should present ONE objective, OVI and list of key response options, clearly showing:
1. The links between the objective and the problem analysis.
2. The links between the objective and the OVI
3. How the Objective is SMART (OVI)
4. How the response options relate to the objectives

Day 2: Response Options Selection

8.30 – 9.30: Presentation and discussion of the group work, continued.

9.30 – 10.00 Applying the Response Analysis Matrix and decision rules to response options: Presentation

Key points:

- Explain the objectives of the exercise:

  1. To evaluate response options against a list of criteria to determine their appropriateness and feasibility.

  2. To weed out response options using the "do no harm" principle, thereby arriving at a list of responses which are broadly appropriate and feasible.
- Go through the RAM column by column
- Explain the "Do no harm" decision rules
- DISTRIBUTE RAM HANDOUT.

10.00 – 13.00 Group Work: Applying the Response Analysis Matrix and decision rules to response options

Materials required:

A. CORE materials:

- Reviewed partially completed RAMs per LZ (the partially completed RAMs are what the groups did on day 1, they should be reviewed and modified as a starting point for the completion of the RAM).
- RAM handout

B. Background materials:

- LZ problem trees
- HEA Baselines
- Latest IPC maps
- Latest Nutrition maps
- LZ maps
- 2010 CAP MYR Cluster response plans
- Best, worst most likely case scenarios for 2011 CAP.
- Vulnerability matrix (3x3 or 2x2)
- Who is doing What Where (3Ws) for each cluster.

14.00 – 16.00: Plenary – Feedback discussion

Process:

- Each group has 20 mins for presentation and discussion. They should present ONE completed RAM clearly showing:
  1. How they used the definitions and the criteria to arrive at the scores in individual columns
  2. How they used the 'do no harm" criteria to exclude response options.
- Groups should also highlight areas of difficulty and suggested improvements to the RAM

16.15 – 17.00 Next Steps: Review and Evaluation

Process:

- This session will take place in Plenary. The first task is to work out a timetable with each cluster regarding how the RAST can engage to support the completion of the response plans by Sept 7th.
- The second task will be for the participants to give an evaluation of the workshop and the tools.

ANNEX V: The Response Options Analysis Matrix (RAM) Tool

Livelihood zone: Hawd and Addun Pastoral (Central and Northeast);

Affected Population group: 25% of Poor in HE; 75% of poor and 25% middle in AFLC; Rest in BFI

Conflict/civil insecurity category scores:

Conflict category	**score**	**CRITERIA**	**Guidance: Conflict situation - Shade as appropriate**
Widespread conflict (current ongoing and protracted)	5	• ***If Score = 5, exclude/Avoid.***	If Score =5, shade code – Dark Red;
Episodic conflict (sporadic/intermittent conflict in parts or all of the operation area)	4	• ***If 4, 3, or 2, consider resilience of response to conflict (column 8 of criteria).***	If Score = 4, shade code – bright red;
Localized conflict (conflict contained in parts of the operation area	3	• ***If 1, then column 4 is irrelevant***	If Score = 3, shade code – Orange;
Tension/potential conflict (no conflict, but predisposing factors exist)	2		If Score = 2, shade code: Yellow
No conflict now and no predisposing factors to conflict exist	1		If Score = 1, shade code: Green

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Objective	Objectively Verifiable Indicator (OVI)	Response Options	Sensitivity to disruption from conflict	Appropriateness (Does response address the core concern(s) considering the livelihood group and condition? 1=Very Appropriate; 5=inappropriate	Timeliness (having an impact within the response timeframe (tool-seasonal calendar)	Technical/logistical capacity to carry out the activity to achieve desired impact; 1-5	Probability of adverse impacts? 1=low; 5=high	Cost of mounting program (size of minimum required Budget)	Overall Σ(4-9).
Address outcomes and immediate causes									
To Reduce GAM Rates in both Hawd and Addun pastoral livelihood zones	GAM Rates in HAWD and Addun reduced to 15% or below by end of December 2011	• ***Conduct supplementary feeding in order to improve food intake among under 5 children;***	4	1	1	1	1	4	12
		• ***Vitamin A and Iron supplementation and fortification and deworming among the***	2	1	1	2	1	2	9

		acutely malnourished children and expectant and nursing mothers;	3	1	1	2	1	3	11
		• ***provide outpatient therapeutic feeding for the severely acutely malnourished children;***	2	1	1	2-3	1	1	8.5
		• ***Distribute water purification tablets and demonstrate their use in order to improve access to safe water so as to reduce sanitation related diarrhoea;***	3	1	3	3-4	1	2-3	13.5
		• ***provide counselling to nursing mothers and community leaders about the need for proper breastfeeding and complementary feeding practices, and hygiene and sanitation;***	N/A	1	N/A	1	N/A	N/A	N/A
		• ***other WASH cluster interventions needed on access to potable water and proper sanitation;***	3	2	5	3	1	1	15
		• ***Launch operational research on the reduction of work burden for caring mothers;***							
Improve adequate access to food in the short term	By the end of May 2011, all populations facing HE and	• ***In-kind distribution of cereals, pulses and oil (GFD), particularly in the Addun, where access is***	5	1 = in Addun; 2 = in Hawd	1	1	2-3	5	14.5 15.5

	AFLC have improved access to food to ensure calorific adequacy	***lower and prices higher);***							
		• ***Cash for relief distribution, particularly in Hawd where physical market access is better;***	3	2 = in Addun; 1= in Hawd	1	5	2	3	16 15
		• ***Vouchers to address food access through market;***	4	3 = in Addun; 2= in Hawd	3	4	1	3-4	18.5 17.5
		• ***Cash for work among the populations in AFLC and BFI targeting the repair of communal water reservoirs and control soil erosion, and opening up access roads;***	3	2 = in Addun; 1= in Hawd	2	2	2	3-4	14.5 13.5
			4	1 = in Addun; 2 = in Hawd	2	2	2	3-4	14.5 15.5
		• ***Food for work among the populations in AFLC and BFI targeting the repair of communal water reservoirs and control soil erosion, and opening up access roads;***	2	1	1	2	1	2	9
	By the end of December 2011 average household expenditure on water will be significantly reduced;	• ***Provide one pack animal per household to reduce cost of transporting water;***	1	1	2	2	1	1	8
		• ***Repair strategic boreholes and communal water reservoirs;***							
• ***Address Underlying Causes of food access problem***									

Restore and maintain household herd sizes among poorer groups	By end of Dec. 2011 average goats and sheep flock size owned by poor hh facing HE increased by 30%.	• ***Restock 25% of the poor facing HE with 40 sheep and goats and one pack camel (complementary with the GFD)***	4	1	1	2	2	4	14
		• ***Desilt/rehabilitate communal water reservoirs and strategic boreholes to ensure water access for livestock during lean seasons;***	2	1	2	2	1	1	9
		• ***Establish community mechanisms to restore good practice in rangeland/grazing management***	3	2	5	5	2	1	19

Annex VI

Somalia Food Security and Nutrition Response Analysis Support Team (RAST)

Applied Research Brief 1:

Food and Agriculture Based Routes to Nutrition: Implications for Interventions in Somalia.

Nairobi and Rome

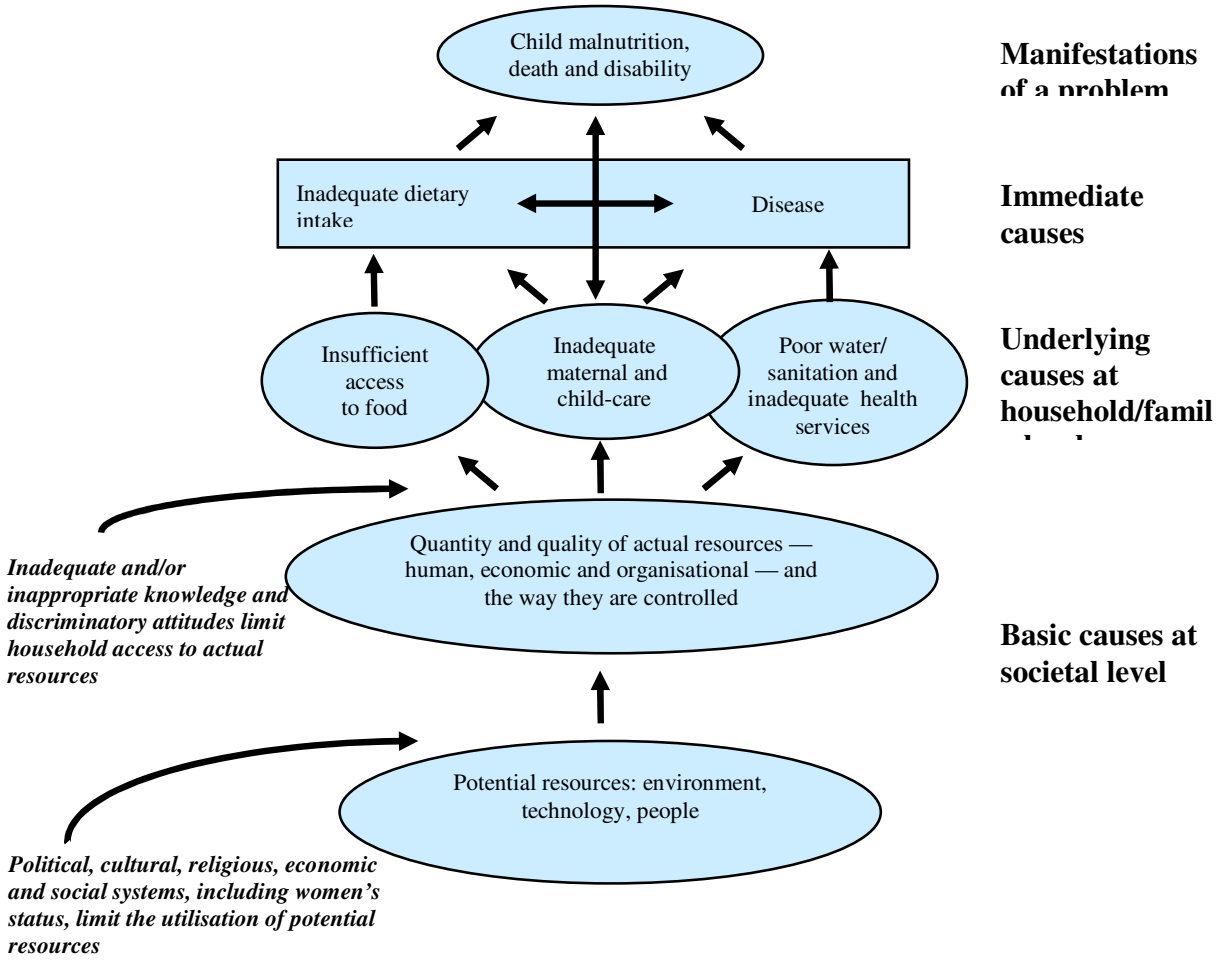
February 2011

FOOD AND AGRICULTURE
ORGANIZATION OF THE UNITED
NATIONS

Table of Contents

FIGURE 1: CONCEPTUAL FRAMEWORK: CAUSES OF CHILD MALNUTRITION 54
1. INTRODUCTION: FOOD BASED ROUTES TO NUTRITION – A CONCEPTUAL APPROACH 55
1.1 Overview of Food Based Interventions *55*
1.2 Diet and nutritional deficiencies in Somalia *57*
2. MAIN FINDINGS OF REVIEWS AND PROJECT EVALUATIONS 59
2.1 Lessons from a Dairy Goat Development Project in Eastern Ethiopia *59*
2.2 Dietary Intervention - Malawi *60*
2.3 Review of the effectiveness of small scale agricultural interventions *61*
2.4 Integrated Horticulture and Nutrition Development Project, Bangladesh *62*
2.5 Review of Animal Production Interventions *64*
2.6 Vouchers for Somali refugees in North East Kenya *65*
2.7 Plant Breeding *66*
3. ARCHETYPE FOOD BASED ROUTES FOR ADDRESSING NUTRITION IN SOMALIA. 68
3.1 Horticulture *69*
3.2 Milk processing and distribution *70*
3.3 Livestock *72*
3.3.1 Re-stocking 72
3.3.2 Feeding 73
3.3.3 Veterinary 73
3.4 Use of Vouchers *74*
REFERENCES 75

FIGURE 1: Conceptual framework: Causes of child malnutrition



Source: UNICEF The State of the World's Children, 1998.

1. INTRODUCTION: Food Based Routes to Nutrition – A Conceptual Approach[1]

Agriculture and rural development schemes have aimed to enhance nutritional status indirectly by improving food access through income generation or food availability, as a consequence of improving living standards over the longer term. However where the central goal is to promote nutrition, interventions can use more direct food based routes. The aim of such projects is typically to improve dietary quality, which relates to the proximate cause of inadequate dietary intake, shown in the UNICEF framework above.[2] This along with disease leads to the ultimate outcome of child malnutrition, death and disability. Food based projects typically promote horticulture as well as small animal production. For pastoral groups, it is possible to design milk production interventions specifically dedicated to improving the nutrition status of vulnerable groups. These seek to improve food access, which as shown in the UNICEF framework is a key contributory factor to poor dietary diversity and intake. More recent projects have incorporated behavioural change aspects in order to address the problem of inadequate maternal and child care. The literature review demonstrates that this much more likely to lead to an improvement in dietary diversity, intake and child nutritional status.

Food access and maternal and child health require change at the level of quantity and quality of actual resources – human, economic and organizational and the way in which these are controlled. These equate to the five capitals of the Sustainable Livelihoods Framework; financial, physical, social, human and natural. Community awareness and nutrition education are linked to support to human capital and this approach is seen as essential if food based projects are to impact on nutrition. Where a project can simultaneously address all five capitals, there is a greater probability of improving nutrition.[3] Influencing the control of all capitals or resources will facilitate an enabling environment for the empowerment of women and their role in feeding and caring for children.

1.1 Overview of Food Based Interventions

Several overarching reviews have been undertaken of food based interventions to promote improved nutrition. These have essentially identified three main types: increased production of micronutrient rich foods from either commercial or home gardening, small livestock or aquaculture; increase intake of micronutrient-rich food through nutrition education, mass

[1] This resport was drafted by John O'Dea, RAST Nutritionist, under the supervision of Neil Marsland, RAF Project Manager. The report was done as part of the Somalia pilot for the ECHO funded Project entitled: "Developing a Response Analysis Framework for Food Security Emergencies".

[2] Ensuring calorific adequacy may however be a further objective, especially where there is an income generation component, enabling improved food access.

[3] Berti PR, Krasevec J, Fitzgerald S, A review of the effectiveness of agriculture intervention in improving nutrition outcomes. Public Health Nutrition: 7(5), 599-609. 2004

Berti PR, Krasevec J, Final Report: Effectiveness of Small Scale Rural Agriculture Interventions Study, Part 1: Nutrition Outcomes – Literature Review and Critical Analysis.

media and other programmes intended to change food selection; and improve nutrient bioavailability; by processing or the simultaneous consumption of enhancing foods. [4]Plant breeding is a further route which may be considered to increase both the intake and the bioavailability of micronutrients. Food based programmes have often used a combination of these strategies to increase the availability and intake not only of vitamin A and iron, but also of many other micronutrients.

Food based approaches offer the prospect of longer term sustainability and cultural acceptability, when compared with supplementation or fortification programmes. An additional advantage is that several micronutrient deficiencies can be alleviated simultaneously without the risk of antagonistic interactions or nutrient overload. They also diversify livelihood options at the household level. However as the various reviews consistently observe, only a very few such projects have actually been evaluated. Key papers which have evaluated either horticulture or animal based interventions are outlined in later sections.

Dietary diversification interventions are concerned with changes in food selection patterns with changes in food production, as well as modifications to food processing, notably to reduce the phytate content of maize-based diets. They are usually community based so that it can be used to enhance awareness of micronutrient malnutrition as well as to empower the community to become more self-reliant. A sustained approach is to use dietary strategies designed to enhance quantity and bioavailability of multiple micronutrients in plant based diets. Such an approach can be adapted to local conditions so that it is affordable and requires no external support. These are in theory easier to evaluate than livelihoods interventions, providing carefully designed trials are used. However in practice, only one such dietary diversification micronutrient project in Malawi appears to have been fully evaluated.

Evaluation of food based approaches, which aim to directly improve nutrition through local food production, either horticultural or animal, have proved difficult and costly. Still only a few home gardening and nut education studies actually measure their impact on vitamin A, iron or other micronutrient status indicators. There has however been some success in using semi-quantitative dietary recall techniques to demonstrate the success of projects)[5]. Projects often use study designs which are not suitable to assess relationship between nutrition and agriculture. In practice, food based approaches when implemented at local level by NGOs are often part of a multi-sector intervention hence it is difficult to establish the effect of food based

[4] Allen LH and Gillespie SR – What Works? A Review of the Efficacy and Effectiveness of Nutrition Interventions; Asian Development Bank, Manila, 2001

[5] Bhattacharjee L, Kumar Saha S, Nandi BK, Food-Based Nutrition Interventions in Bangladsesh – Experience, of integrated horticulture and nutrition development 2007

Momanyi S and Jenet A, A Study on Hygiene Practices and Market Milk Chain of milk and milk products in Puntland, Somalia.

interventions compared with other components such as health or WASH. Such multi-sector interventions offer a highly cost-effective approach to improving nutrition.[6]

1.2 Diet and nutritional deficiencies in Somalia.

The 2009 Micronutrient survey for Somalia, found alarmingly high prevalences of both vitamin A deficiency and anaemia, amongst women and younger children related to problems of low dietary diversity poor infant feeding practices, and inadequate utilization of locally available foods. [7] [8] Low intake of animal products is the main dietary cause of vitamin A deficiency and populations with the highest prevalence of vitamin A deficiency consume low amounts of animal products and fruits rich in beta carotene.

Although some plants are very high in beta-carotene, this is generally much less well absorbed by humans than animal retinol. [9] Provitamin A caretenoids are easily destroyed during processing, exposure to light, heat treatment and storage. The two main dietary issues are to ensure retention of pro vitamin A compounds during home preparation, cooking and preserving and use home preservation techniques to make fruits and vegetables, extending their availability throughout the year. Solar drying is an improved alternative to traditional sun drying. Greater beta-carotene retention is achieved in solar dried compared to sun dried. This is undertaken by compacting thereby increasing concentration of provitamin A carotenoids. The use of traditional sun drying methods result in significant losses of beta-caroten (provitamin A) due to direct exposure to sunlight With solar drying, foods are dried in the shade and higher temperatures and lower humidity are provided in order to increased the drying rate thus increasing the retention of vitamin A and the reduction of the final moisture content[10].

Heme from animal dietary sources such as meat, fish and poultry is readily bioavailable. Nonheme iron found in dairy products and eggs and in plant foods such as beans, cereals, nuts and fruits and vegetables is particularly sensitive to presence of inhibitors such as phytic acid, tannins and selected dietary fibres. Diets heavily reliant on non-animal staples, especially

---

[6] Horton S, Begin F, Greig A and Lakshman A - Micronutrient Supplements for Child Survival (Vitamin A and Zinc) Best Practise Paper, Copenhagen Consensus Paper. 2008.

[7] FSNAU, FAO, UCL – National Micronutrient and Anthropometric Nutrition Survey, Somalia, 2009

[8] FSNAU – Somali Knowledge Attitude and Practices Study – Infant and Young Child Feeding and Health Seeking Practices. 2007.

[9] Some plant sources notably yellow and orange squash fruit and red palm oil contain large amounts of well absorbed carotenoids. Beta-carotene from fruits and squashes is substantially better absorbed than that from leaves and vegetables in general. Bioconversion of provitamin A in dark green leafy vegetables is less than one quarter of that previously thought.

[10] Ruel MT and Levin CE - Assessing the potential for food based strategies to reduce vitamin A and iron deficiencies: A review of recent evidence. IFPRI 2000.

cereals, usually contain large amounts of phytic acid. Efforts are principally directed to increase the bioavailability of iron as well as zinc from cereals, using techniques such as germination and fermentation, to reduce the content of phytates.[11]

Milk is very high in protein quality, containing eight essential amino acids (EAAs), particularly the sulphur and phosphorus bearing EAAs. This makes it an essential complement to a cereal based diet, deficient in lysine or in the case of maize, also tryptophan. It is rich in minerals, especially zinc and potassium. An association has been demonstrated between cow milk and increased linear growth in children, a relationship which would also hold true with respect to the other main milking animals.[12] It follows that in pastoral communities, where milk becomes periodically short, this can have a serious effect on child nutrition status, and a number of deficiencies become apparent, especially where meat consumption and fruit and vegetable consumption is low, as is frequently the case with pastoral communities. The fat content of milk facilitates absorption of fat soluble vitamins and enhances dietary energy density. Camel milk is particularly rich in fat soluble vitamins A and E, as well as iodine and vitamin C. Iron, niacin and folic acid are not well supplied and need to be obtained from other sources, preferably animal sourced foods.

Successful herding strategies have clearly enabled a healthy and adequate diet, based on consumption of meat and milk, supplemented with some wild foods. Several studies have however since quantified inadequate levels of energy provided by pastoralist diets reliant on milk and have linked this to high levels of child wasting (weight for height) low body mass. Such diets have been termed “protein rich and calorie poor”.[13] Based on this scenario, pastoralists therefore aim to exchange milk and dairy products for grains and sugar obtain sufficient calories.

[11] Gillespie S, Major Issues in the Control of Iron Deficiency; The Micronutrient Initiative.

[12] Watson C, Catley A, Milk Matters: Improving Health and Nutritional Status of Children in Pastoral Communities.

[13] Sadler K, Kerven C, Calo M, Manske M, Catley A – The fat and the lean: review of production and use of milk by pastoralists, Pastoralism Vol.1 No. 2 July 2010

2. Main findings of reviews and project evaluations

2.1 Lessons from a Dairy Goat Development Project in Eastern Ethiopia[14]

- The project was implemented in two districts (Gursum and Kombolcha) in the densely populated Harar highlands of Eastern Ethiopia. The project design recognized the importance of animal products to human nutrition and the role of goat production in improving food availability and farm income thereby enhancing household food security of the rural poor. To achieve its objective, the Dairy Goat Development Project (DGDP) was engaged in identifying women's groups, offering them training in goat husbandry prior to the introduction of improved breeds, using revolving credit schemes.

- Anthropometry was used to measure prevalence of wasting. Dietary frequency methods were used including the HKI (Helen Keller International) Food frequency method for assessing vitamin A deficiency. No biochemical assessments were undertaken.

- DGDP project was successful in increasing milk production and household income of participant households. However increased income and on-farm milk availability was not translated to improvements in nutritional status for women and children.

- Despite project intervention, mothers were largely unaware of causes and remedies for nutritional deficiency diseases, and health and nutritional status of women and children was not significantly improved by involvement in the project.

- The incidence rate of anaemia amongst mothers during pregnancy was higher than the national average and there was an extremely high incidence of mothers who had experienced vitamin A deficiency, detected through their history of night blindness during their last pregnancy .

- If livestock development projects such as dairy goat farming are to be translated into improved nutritional and health status of women and children, livestock extension messages will have to be complemented with nutrition and health education.

[14] Habtemariam Kassa, Ayalew W, Habte Gabriel Z and Gebre Meskel T. Enhanicng the role of livestock production in improving nutritional status of farming families: Lessons from a dairy goat development project in Eastern Ethiopia.

2.2 Dietary Intervention - Malawi[15]

- The intervention employed dietary diversification, changes in food selection patterns of locally available foods, and modifications to food processing to reduce the phytate content in maize-based Malawian diets. These community based dietary strategies using a participatory approach reduced the predicted prevalence of inadequate intakes of protein, calcium, zinc and B12, but not iron, in children form Malawian households with very limited resources.

- Plant foods such as vegetables and fruit cannot be relied upon to provide dietary adequacy of micronutrients, especially vitamin A and iron. It is therefore important to increase consumption of meat and poultry, as well as vegetables and fruit. This applies irrespective of the actual livelihood group and or agricultural system being considered.

- Some evidence that fermented foods have anti-diarrhoeal effects in children. Additionally fermentation is time saving, since family members can safely eat fermented food throughout the day. Fermented milk products may be an excellent source of nutrients for children, and are more amenable than fresh milk to non-refrigerated storage.

- Intervention demonstrates the value of employing dietary diversification and modifications to traditional household methods for preparing and processing indigenous foods.

- Improved preservation and conservation techniques such as solar drying with production of leaf concentrates extend availability of seasonal fruits and vegetables throughout year.

- There are tradeoffs between increased income from selling home produced animals and increasing consumption to improve dietary quality. Increased income through sale of animal products does not necessarily translate into significant improvements in dietary quality. This emphasizes the need for a strong nutrition education component.

[15] Yeudall F, Gibson RS, Cullinan TR, Mtimuni B, - Efficacy of a community – based dietary intervention to enhance micronutrient adequacy of high-phytate maize-based diets of rural Malawian children. Public Health Nutrition: 8(7), 826-836, 2005

- Squash, orange sweet potatoes and yams, carrots and some orange red fruits (such as mangoes, papaya) and red palm oil have high pro-vitamin A content. These are foods that can often be grown in home gardens. They have higher vitamin A bioavailability than dark green leafy vegetables, and have the added advantage of being storable and therefore available during the off season.

- Unlike iron, many foods that are rich sources of vitamin A are affordable, easy to produce and do not deteriorate rapidly. More progress has therefore been made with food based strategies to control vitamin A deficiency than with respect to iron deficiency.

2.3 Review of the effectiveness of small scale agricultural interventions

The findings of this review were reported in two separate publications.[16]

- Most agricultural interventions increased food production, but did not necessarily improve nutrition or health. Agriculture interventions that invested broadly in different types of capital were more likely to improve nutrition outcomes. Those projects which invested in human capital (especially nutrition education and consideration of gender) had a greater likelihood of effecting positive nutritional change.

- An intervention that increases the amount of time women work in the fields without considering childcare may improve food availability and diet but hurt child welfare.

- Among projects reviewed, home gardening projects usually had a higher success rate than other types of intervention, with at least some positive nutritional outcomes in all projects. This may be due to home gardening being a strong intervention, which most households can successfully adopt. Another explanation may be that all of these projects strengthened human capital through the use of nutrition education and/or gender considerations. Of home gardening interventions that had a strong education and behaviour change component, several demonstrated improved knowledge, attitudes and practices by mothers and increased consumption of micronutrient rich

[16]Berti PR, Krasevec J, Fitzgerald S, A review of the effectiveness of agriculture intervention in improving nutrition outcomes. Public Health Nutrition: 7(5), 599-609. 2004
Berti PR, Krasevec J, Final Report: Effectiveness of Small Scale Rural Agriculture Interventions Study, Part 1: Nutrition Outcomes – Literature Review and Critical Analysis.

foods. Nutrition education and behaviour change are therefore of central importance for achieving nutritional improvement.

- Practical low cost strategies to increase production and consumption of meat and poultry. Longer term dietary diversification/modification interventions that succeed in promoting production and consumption of small animal livestock are needed.

- Targeting animal products to those with highest iron requirements, and supporting production of poultry, small livestock and fish, would increase the intake of absorbable iron and other micronutrients. Small amounts of animal products can often be targeted to the most needy (e.g. young children and women) and home production of chickens, small livestock, and fish can generate income as well as directly improving the nutrition status of the household.

- Need to significantly increase animal source foods, while simultaneously reducing intakes of phytic acid. Nevertheless intakes of animal source foods, especially meat and poultry remained very low, despite intensive nutrition education and community mobilization efforts to increase consumption. Availability and cost of meat and poultry. Therefore more efforts to assist households in raising small animals and promoting their consumption are required.

- Compared to vitamin A, production and education interventions to increase supply and intake of iron from plant foods have not been popular. It is believed that to increase the household supply of bioavailable iron, efforts must support small animal husbandry to increase supply of more bioavailable heme iron. The project in Ethiopia showed that following the commercialization of crossbred cows, there had been a 72% increase in household income after adoption, with both higher vitamin A and iron.

2.4 Integrated Horticulture and Nutrition Development Project, Bangladesh[17]

- The aim of the project was to diversify food production for consumption by providing rural farmers with the necessary knowledge, technology and skills to make nutritious food available to their community and improve e household food security. This included a community based nutrition education programme to create awareness among farmers, women and schoolchildren.

[17] Bhattacharjee L, Kumar Saha S, Nandi BK, Food-Based Nutrition Interventions in Bangladesh – Experience, of integrated horticulture and nutrition development 2007

- Food and dietary diversification includes all interventions aimed at improving the supply, access to, consumption and bio-efficacy of micronutrient-rich food. Dietary diversification requires assessment of dietary consumption, expansion and diversification of food production, improvement of food processing, preservation, storage and marketing as well as food preparation. This must be supported by a nutrition education programme.

- Nutritional improvement also resulted from simple agro-processing technologies such as dehydration, pickling, bottling, pulping, and preparing preserves and relishes from a variety of vegetables and fruits. This built synergies between nutrition and food processing by reducing micronutrient losses, increasing shelf life, supplementing daily nutrient intake and adding value to some products.

- Food consumption surveys found project households consuming significantly more vegetables and fruit produced in home gardens than non project households with some produce being sold. Substantially higher intakes of energy, protein and micronutrients were recorded among project households.

- Participatory nutrition education activities show the project strengthening nutrition knowledge with a growing number of women including horticultural food recipes in their diets. The evaluation showed definite improvement in nutritional knowledge of woman and schoolchildren.

- The dietary assessment also illustrates how proper collection of semi-quantitative data can provide sound information for impact assessment and evaluation.

- A food based strategy combined with extensive nutrition education offers a long-term sustainable approach to reducing micronutrient deficiencies.

- The low bioavailability of some key micronutrients in food, such as iron, can be significantly enhanced with the right food combinations as well as by appropriate food processing and preservation techniques.

- Horticultural cropping potential can be combined with rearing small animals, poultry and fish breeding for dietary improvement of marginal rural households. This is especially important to supplement plant foods in order to provide dietary sufficiency of iron and vitamin A.

2.5 Review of Animal Production Interventions [18]

- The authors reviewed the impact of animal production projects on nutritional status and on six nutrition- related outcomes: production, household income and expenditure, caregiver income, caregiver time and workload, zoonosis, and dietary intake. 14 projects were included form Bangladesh, India, Ethiopia, Kenya, Egypt, Thailand and Vietnam. These included four studies on aquaculture, five on diary production, three on poultry and three in which animal production was of broader integrated projects with nutrition education components. All were amongst settled agrarian communities, where livestock or fish were integrated with production systems. Only four studies evaluated the impact on nutritional status and found a positive effect. It was unclear whether the improvements in dietary intake and nutritional status were a direct effect of increased production or an indirect effect of increased income. Future studies on the animal production link would benefit from stronger methodological designs.

- The consumption of relative small amounts of animal foods can contribute substantially to dietary adequacy. Potential barriers to increasing intake of animal foods include their relatively high cost to poor people and intra-household food allocation patterns that may limit their intake for the most vulnerable.

- Many of the studies covered by this review suffered from key limitations in their design, evaluation and analysis

- The interventions associated with clear improvements in dietary intake and nutritional status belong to two groups: women either played a critical role in the intervention or the intervention included a nutrition education component.

- A limitation of many studies was that dietary intake was derived from household-level data, ignoring potential intra-household allocation preferences. Finally, many studies did not report clearly how dietary intake was measured.

- The evidence on female control of income from livestock production activities is unclear. The varied outcome appears to be affected by region, ethnic group and production system.

[18] Leroy JL and Frongillo EA – Can interventions to Promote Animal Production Ameliorate Undernutrition – The Journal of Nutrition 137, 2007.

- Studies with improved design are necessary to establish the link between animal production and improved nutritional status, and the respective contribution through increased consumption or improved incomes.

- Some studies indicated that livestock may provide a real opportunity for women to increase their incomes. In other instances, it merely leads to a significant increase in women's workload. In the latter scenario, it was unclear what impact this had on the ability of mothers to provide adequate childcare. A related concern is that the market orientation of smallholders may lead to women losing control over income to men.

- With only four of the studies examining nutritional status, it was not possible to establish clearly whether promotion of animal production was an effective means to alleviate undernutrition.

2.6 Vouchers for Somali refugees in North East Kenya[19]

- Voucher scheme implemented between 2007 – 2009 in three Somali refugee communities in Dadaab; Hagadera, Dagahaley and Ifo.[20]

- The objective of the voucher system was to increase consumption of nutritious fresh foods, by the refugee population, and to address practices of infant and young children feeding practices, balanced diets and good food hygiene. The programme was seen as a possible tool for the reduction of anemia and promoting the general health of the refugee population.

- Children between 6-59 months were targeted and vouchers worth 600 KSh per month were provided to mothers, enabling them to purchase fresh vegetables, fruit, milk and eggs in the local market. Caregivers participated in nutrition education sessions with cooking demonstrations.

- Consumption patterns and dietary diversity were monitored. No anthropometric or biochemical measures were undertaken.

[19] Trenouth L, Powel J and Pietzsch S, Fresh food vouchers for refugees in Kenya. Field Exchange Issue 36, July 2009.

[20] The project has since been implemented by Save the Children UK

- Beneficiary access to fresh food, fruit and vegetables, milk and eggs was significantly improved. The number of food groups (average of 10) in the diet was expanded due to increased consumption of all these items.

- There was a clear benefit to the local economy, with stimulus to local markets; through an increased range and availability of fresh fruit and vegetables and eggs. Local milk suppliers also benefited from increased sales, as many fruit and vegetable sellers also began distributing milk.

- Change was attributed to nutrition education and improved availability of fruit and vegetables in the market. Cooking demonstrations increased awareness of the dietary value of locally available vegetables; dark green leafy vegetables especially *sukuma wiki* and cabbage.

- Beneficiaries reported increased knowledge levels for a range of health and hygiene education topics, although putting the various messages into practise met with some challenges.

- There was an improvement in the overall malnutrition rate in each of the three camps (average of 11.3% GAM and 1.3% SAM for the three camps (August 2008 UNHCR). There is a presumption that the intervention contributed to this, although it is not clear to what extent.

2.7 Plant Breeding

Plant breeding has been considered for decades as a vehicle for dietary modification. Breeding for improving crop micronutrient density, especially iron and zinc, to improve dietary status is currently being considered by international research institutes as a possible option. Initial reviews are encouraging.[21] In theory, selective plant breeding or genetic modification could raise the iron (and other micronutrient) content, or their bioavailability, particularly of staple foods such as rice, wheat, or maize – a form of fortification at source. An increase in the concentration of specific amino acids may promote mineral absorption. These are Sulphur Amino Acids, namely methionine, lysine and cysteine. A small increase only in amino acid concentration is needed to positively affect the bioavailability of iron or zinc. This modification is unlikely to adversely affect plant functions.

[21] Meenakshi JV, Johnson N, Manyong VM, De Groote H, Javelosa J, Yanggen D, Naher F, Gonzalez C, Garcia J and Meng E – How cost effective is biofortification in combating micronutrient malnutrition? An *ex-ante* assessment? IFPRI HarvestPlus Working Paper 2007.

Another option might be for plant breeders to select for iron-efficient genotypes that allow plant roots to tap otherwise unavailable iron in the soil. In theory increased bioavailability of micronutrients can be achieved by reducing concentration of anti-nutrient factors (inhibitors of absorption), principally phytates. Phytate content, in particular, may be reduced although the phosphorous in phytates is important for pest resistance, and the extent to which phytates can be reduced without compromising such resistance is not known.

Inherent problems in using a plant breeding approach are concerned with possible trade-offs between nutritional and agronomic priorities. Past efforts to increase protein quantity and quality were associated with a decline in yield (and vice-versa). There remains a presumption that nutrient enriched crops might be lower yielding. However it has been noted that in case of trace elements iron and zinc – agronomic and nutrition goals coincide – mineral dense crops offer agronomic advantages, resistance to infection, lower dependence on fungicides, drought resistance and greater seedling vigour, in turn associated with higher plant yield.[22]

The potential is rated as very high, however this is based on only two efficacy studies of feeding trials for crops fortified with iron and with vitamin A.[23] These suggest that with regard to Africa, biofortification enjoys a clear advantage in terms of benefit cost ratio over either supplementation or fortification.[24] The very wide range of benefit cost ratio estimates however suggest the need for further evaluation. Given the lack of an agricultural research system in Somalia, it is not feasible for plant breeding to be conducted or supported in country. FAO's current activities in developing plant genetic material are focused on the introduction from outside of higher yielding cereals and tree varieties.[25] The research cost, effort and time, in breeding primarily for nutritional criteria, would only be justified if the genotypes developed at international level, could be wider replicated over the East Africa region and similar environments. Attention would also need to be paid to community awareness, dissemination and behaviour change communication, in addition to local agronomic factors and culinary acceptability.[26] Meanwhile there may be more efficient and cost effective alternative

[22] Ruel MT and Levin CE - Assessing the potential for food based strategies to reduce vitamin A and iron deficiencies: A review of recent evidence. IFPRI 2000.

[23] Horton S, Alderman H, Rivera JA, Copenhagen Consensus Challenge Paper, 2008

[24] The two studies included reviews of biofortification of maize with vitamin A in two countries neighbouring Somalia; Ethiopia and Kenya.

[25] Gibson RS, Yeudall F, Drost N, Mtitumi and Cullinan TR. Experiences of a Community-Based Dietary Intervention to Enhance Micronutrient Adequacy of Diets Low in Animal Source Foods and High in Phytate: A Case Study in Rural Malawian Children. The Journal of Nutrition.

[26] Meenakshi JV, Johnson N, Manyong VM, De Groote H, Javelosa J, Yanggen D, Naher F, Gonzalez C, Garcia J and Meng E – How cost effective is biofortification in combating micronutrient malnutrition? An *ex-ante* assessment? IFPRI HarvestPlus Working Paper 2007.

interventions for reducing iron deficiency anaemia in Somalia, especially de-worming or hygiene and sanitation programmes.

3. Archetype Food Based Routes for addressing Nutrition in Somalia.

There are broadly three groups of agricultural activities which can be used to influence nutrition within the Somali context:

(a) Horticulture
(b) Milk
(c) Livestock

In addition to this**, vouchers** also offer possibilities and are relevant to the focus of this paper when they are linked explicitly to increased agricultural production / marketing in target areas. An example of this would be using vegetable vouchers targeted at landless families as a way to support vegetable production by small scale growers, providing them (the growers) with revenue to allow further purchase of inputs, especially fertilizer. Another example would be connecting the voucher programme with a de-stocking initiative (more details on this below).

There are clearly inherent problems in establishing the impact of livelihood programmes on nutrition status. Dietary intervention using behavioural change and communication techniques can be more easily designed to accurately show the direct effect of improving dietary quality and food utilization. Such operational research is a necessary prerequisite to follow up livelihood interventions undertaking food based routes to improving nutritional status at household and community level. Significant progress has been made in understanding how to bring about behavioural changes and which food based strategies are likely to be effective for improving micronutrient status.[27]

Behaviour change is seen as a highly cost effective way to improve nutrition.[28] Households may not be able to afford to increase the amount of food they consume, but they may be able to change the way it is allocated among household members, or the type of food that is consumed, or the way that it is prepared and served, in ways that improve nutrition. Livelihood projects whether focusing on horticulture, livestock, milk or vouchers should include a behaviour change/nutrition education component to increase the chances of project success.

[27] Allen LH and Gillespie SR – What Works? A Review of the Efficacy and Effectiveness of Nutrition Interventions; Asian Development Bank, Manila, 2001

[28] Bhutta ZA, Ahmed T, Black RE, Cousens S, Dewey K, Giugliani E, Haider BA, Kirkwood B, Morris S, Sachdev H, Shakar M, ***What works? Interventions for maternal and child undernutrition and survival.*** Lancet Vol 371, Issue 9610, 2008.

3.1 Horticulture

In Somalia, pastoralists have traditionally relied on milk for their source of micronutrients, as well as protein and energy dense foods. However following a severe secular decline, the herd size necessary to maintain a viable pastoralist strategy is beyond the reach of many households, with milk production erratic and frequently unreliable. Hence there is a niche for vegetable production where practical, to diversify livelihoods and broaden the dietary base. Riverine livelihood zones have the greatest comparative advantage. Cheap simple drip irrigation now makes possible in theory the spread of horticulture the spread of horticulture to agro-pastoral areas, as well as to peri-urban areas[29].

The success of integrating horticulture based diversification of food production in bringing about improvements of household and community nutrition standards is clearly demonstrated. Such interventions can be seriously considered for replication or adaptation elsewhere. These as well as the animal projects reviewed were however implemented among sedentary agrarian societies, dependent on cropping and where livestock are an integral part of a mixed farming system. The countries included in the various reviews have much higher and dependable rainfall than in Somalia. Interventions which have worked in Bangladesh or Malawi therefore need to be very carefully adapted to the very different Somali environment.

Within Somalia, horticultural projects are appropriate in the first instance to riverine communities, where FAO from 2000 supported a vegetable growing project for women from vulnerable households living in the Juba and Shabelle river valleys. This was implemented through InterSOS. Women were trained in horticultural techniques and with a nutrition education component. Whilst the objective was to improve nutrition status, there appears not to have been a nutritional evaluation. In the better watered riverine and oasis areas, FAO is also promoting the introduction of improved cultivars of bananas and citrus fruits, to make a nutritional contribution as well as demonstrate commercial value.

Through the use of drip irrigation systems, which FAO is presently considering, horticulture on a modest scale, may be extended to the more widespread rainfed agro-pastoral areas. Southern Somalia comparatively has higher rainfall and the agro pastoral areas have a higher potential for horticulture than elsewhere. Farmers locally recognize this and wish to grow more vegetables, converting some land from cereal production.

The types of vegetables need to be well worked out according to local conditions, given that some are heavily demanding of water and the effects of drought need to be considered, especially in rainfed areas. Introduced seeds and specialized tools need to be given, along with essential knowledge and skills. There is a risk that even if initially successful, new horticultural

[29] ACF has a vegetable growing scheme in Mogadishu, using run-off water from it's WASH programme borehole sites.

innovations will be confined to the immediate project areas, and fail to be disseminated more widely. There is consequently a need for effective information and training dissemination in order for the work of successful growers to be recognized and replicated by others elsewhere. Vegetables can be used for home consumption or sold for income. To ensure that children benefit, it is therefore essential to include a nutrition education component.

3.2 Milk processing and distribution

Projects in support of milk processing/preservation may represent an improvement on traditional methods or the introduction of techniques used by pastoral groups in other regions of the world. This strategy is often used to promote sales of dairy products, as well as improving nutrition at household level. Dairying is highlighted as a key activity for FAO. Support for the sector is clearly relevant in the producer areas; pastoral or agro-pastoral livelihood zones. The milk chain includes also roadside collection points and urban markets, where the urban poor and IDPs are frequently involved. These groups can be assisted through improved processing, transport and marketing. Given the many and extensive linkages, the milk chain is highly susceptible to conflict or insecurity. Hence investments by agencies are only justified in more peaceful regions.

In pastoral societies, transformation of milk into dairy products can help deal with gluts and prolong the supply of milk during the dry season enhancing longevity and nutrient profile. Preservation of milk products is more characteristic of Asian pastoralists. Traditional techniques for using surplus milk to make into preserved forms of milk are less common in sub Saharan Africa compared with Asia. However Somali pastoralists have a long tradition in ghee production. Processing milk into ghee requires large amounts of milk and is expensive in terms of labour. For this reason it is predictably dominated by wealthier households with larger cattle herds, which are confined to the rangelands of SE Ethiopia and the lower Juba and Shabelle valleys of southern and central Somalia. It is therefore not an option for poorer pastoral households with only small animals. In addition to sale, ghee production is used mostly as a source of cooking fat or for preserving meat. Despite its nutritional properties; density of protein and fats, vitamins A and E, ghee is not something which is commonly added to children's diets.

Fresh milk fetches a higher price, however soured milk is the form normally consumed. To prolong the life of milk for household consumption or during transport, short-term milk preservation methods are necessary such as souring camel milk in smoked containers. The smoking process is used to remove bacteria, and is a sound hygienic practice where water for cleaning is short. The soured camel milk *susa* is popular with consumers, and the souring process is essential, especially during times of dry season shortages, when suppliers/distributors must travel further to source milk. Probiotic (or beneficial) bacteria either present in milk or added at the time of fermentation, multiply during the fermentation process and will promote the growth of probiotic bacteria in the gut. Such bacteria have been shown to improve intestinal microbial balance and may decrease the incidence and reduce the severity of illness. However fermented milk will not last beyond a further two days, over which time the

risk of diarrhoea increases. The fermentation process can be enhanced by the use of improved milk cultures and longevity of commercial milk can be increased in urban areas through refrigeration.

The milk chain in Somalia is a well connected system, with an integrated network of producers, suppliers and consumers linked by milk trucking. The potential for development of the dairy sector is recognized within the current FAO position paper for the livestock sector and the following areas are highlighted:

- Support to milk production and marketing that enhances participation of women and youth.
- Quality assurance and hygiene practices in milk production through introduction of alternative and innovative technologies in place. Support establishment of village milk centres and a milk marketing system.
- Training and training facilities in record keeping, changing milk practices and hygiene, adequate nutrition, establishing cold storage or pasteurization at village centres in order to minimize adulteration of milk and that of residues in place
- Value addition including sour milk, yoghurt and cheese preparation explored. Support establishment of home industries that process and add value to milk. [30]

Improving quality and hygiene practice, handling and shelf life, is an effective means of directly promoting the nutritional status of women and children. Agencies involved in the dairy sector are replacing plastic containers with aluminium alternatives.[31] These are easier to clean, and facilitate the removal of harmful bacteria. This is an initial step in a programme which envisages a complete upgrading of the milk chain. The ultimate intention is to provide more fresh milk for sale, which fetches a much higher price for producers and traders than soured milk. Collection points for milk are located near dry season grazing areas. These have been equipped with improved cooling facilities, sometimes with small refrigeration units, but more commonly with larger charcoal lined rooms which can reduce temperatures significantly. Pasteurization techniques are being piloted to extend the longevity of milk, which unlike the traditional boiling, involve no adverse effects on quality or taste. Testing of milk prior to pooling is taking place, using standard international tests. Speed in delivering fresh milk to markets is being encouraged through improved management practices. Women predominate in milk marketing and those active in urban markets are often from the destitute urban poor or IDP populations. Improvements to locally sourced milk will therefore increase incomes for these female traders,

[30] FAO Somalia Position paper on Livestock sector in Somalia (2010 – 2015)

[31] Momanyi S and Jenet A, A Study on Hygiene Practices and Market Milk Chain of milk and milk products in Puntland, Somalia. VSF Germany.

providing a stable income. Income from milk marketing is not greatly affected by fluctuations as the value of milk actually rises during times of shortage, making up for reduced supplies. Through developing the local milk chain, it is hoped to provide a stronger and safer commercial alternative to the use of imported dried milk for child and infant feeding.

There are no cultural or environmental reasons why nutrient rich cheese and butter could not be produced within Somalia. Should producers require, the necessary techniques could relatively easily be introduced via specialist international agencies. However it is currently more profitable to sell fresh milk than to convert large amounts into either butter or cheese. Milk is much more likely to be used to benefit child nutrition. Butter and cheese would invariably be exported.

Very few interventions to date have specifically aimed at increasing milk supply in the diets of pastoral children and of those which have, few have provided actual evidence of the impact on the nutritional status of children. This evaluative component should be encouraged in future project design.

3.3 Livestock

3.3.1 Re-stocking

The LEGS Drought Contingency Planning Model recommends that re-stocking be implemented during the recovery phase. Re-stocking involves selecting beneficiaries with previous herding expertise who wish to return to pastoralism. This requires a start up package of a sufficient number of animals, to justify cost-effectiveness in terms of pastoral labour. Added to this the need for initial feed and medicines, re-stocking can be an expensive undertaking. Re-stocking is therefore seen as a risk, where newly restored pastoralists, if faced with protracted drought could face destitution once more. Furthermore, where large scale restocking is being implemented, care must be taken to ensure there is not further degradation of pasture and water resources.

Experience among Kenyan Somali groups, however suggests that restocking can be successfully implemented, through community based projects, where there is an effective locally representative committee, responsible for project management. A related lesson is to purchase animals from better off pastoralists in the same area to re-distribute. The volume of animals is not therefore locally increased, avoiding intensified pressure on water and pasture. More modest efforts can be directed towards destitute pastoralists in peri-urban areas. The provision of six or seven small ruminants would allow poorer households to start re-building their assets once again. Provision of animals is less of a risk in peri-urban areas due to the greater proximity and reliability of local water supplies. Goats are least expensive to provide initially, and milk from goats more than any other is likely to be consumed by children in the household, rather than sold for income.

3.3.2 Feeding

Supplementary feeding of livestock using high quality concentrate or cultivated fodder is well known strategy for improving livestock production, including milk production. Logically provision of animal feed, should prevent the pastoralists from falling into crisis and destitution. Hence the LEGS guidelines indicate that feed should be given during the alert phase of an impending drought, as well as during the emergency itself. However it is argued that without a proper cost benefit analysis, it is impossible to assess impact. Indeed it is preferred that such an assessment should precede distribution of supplementary feeding. A cost benefit analysis of livestock feeding for Somali and Borana pastoralists during the 2007 drought in southern Ethiopia, indicated programme success in terms of increased milk productivity. Informants stated that this milk was fed to children. However the impact on nutritional status was not recorded.

3.3.3 Veterinary

Veterinary support is necessary at any time, during any phase of an emergency or in a non-crisis period. These are clearly applicable to pastoral and agro-pastoral livelihood zones, where interventions will be more cost effective, given the large numbers of animals involved. However animal diseases can spread rapidly from small numbers of unvaccinated animals and veterinary measures are essential anywhere where livestock exist, either in riverine where smaller numbers may be part of a mixed farming system, or in peri-urban areas where one or two goats can be valuable assets for a household, not least as a source of milk for children.

Livestock health and disease is a key determinant of milk supply, however it would appear that few veterinary project evaluations have attempted to quantify the impact of veterinary interventions on milk supply. There appear to be even fewer evaluations of the effect of increasing milk supply through veterinary assistance on child nutrition. A notable exception is the 1995 study by Blakeway of Rinderpest control in Southern Sudan, which showed a significant improvement in livestock productivity and milk availability due to veterinary measures. In terms of benefit cost ratios, the intervention was more effective in providing food to the same population than food aid distribution.

The absence of evaluation is surprising as pastoralists can themselves assess the value of disease control against indicators such as milk production, and can estimate absolute reductions in milk off take per milking by disease. Pastoralists are well aware of the multi-factorial nature of milk production and can describe the relative importance of factors such as rainfall, pasture and conflict for milk supply compared with livestock diseases. Save the Children from the nutrition survey of the Somali rangelands in SE Ethiopia, undertaken in 1991 have cited the opinion of pastoralists that animal health support is the most effective way of ensuring adequate milk in the diets of young children.[32]

[32] Holt J. Lawrence M – An End to Isolation, Save the Children UK, 1991.

3.4 Use of Vouchers

Cash vouchers enabling purchase by those without household gardens, can be used to support vegetable production by small scale growers, providing them with revenue to allow further purchase of inputs, especially fertilizer.

Meat could be added to the voucher package where destocking is taking place ahead of a protracted drought. The FAO Position paper for Somalia 2010 – 2015 looks to identify opportunities for production diversification, including value addition of by products; offal, heads, tongue and low grade meat. There is some interest in using these to improve and safeguard nutritional status and these could be provided through a voucher scheme. There are however issues in ensuring hygiene and food safety standards.

Vouchers can be used in any livelihood zone, depending on the need.

References

Allen LH and Gillespie SR – What Works? A Review of the Efficacy and Effectiveness of Nutrition Interventions; Asian Development Bank, Manila, 2001

Barrett CB, Bell R, Lentz EC, Maxwell DG – Market information and food insecurity response analysis.

Berti PR, Krasevec J, Fitzgerald S, A review of the effectiveness of agriculture intervention in improving nutrition outcomes. Public Health Nutrition: 7(5), 599-609. 2004

Berti PR, Krasevec J, Final Report: Effectiveness of Small Scale Rural Agriculture Interventions Study, Part 1: Nutrition Outcomes – Literature Review and Critical Analysis.

Bhattacharjee L, Kumar Saha S, Nandi BK, Food-Based Nutrition Interventions in Bangladsesh – Experience, of integrated horticulture and nutrition development 2007

Bhutta ZA, Ahmed T, Black RE, Cousens S, Dewey K, Giugliani E, Haider BA, Kirkwood B, Morris S, Sachdev H, Shakar M, ***What works? Interventions for maternal and child undernutrition and survival.*** Lancet Vol 371, Issue 9610, 2008.

FSNAU, FAO, UCL – National Micronutrient and Anthropometric Nutrition Survey, Somalia, 2009

FSNAU – Somali Knowledge Attitude and Practices Study – Infant and Young Child Feeding and Health Seeking Practices. 2007.

FAO Somalia Position paper on Livestock sector in Somalia (2010 – 2015)

FAO Improvement and Sustainable use of Plant Genetic Resources Programme (Phase ll) 2010.

Gibson RS, Yeudall F, Drost N, Mtitumi and Cullinan TR. Experiences of a Community-Based Dietary Intervention to Enhance Micronutrient Adequacy of Diets Low in Anaimal Source Foods and High in Phytate: A Case Study in Rural Malawian Children. The Journal of Nutrition.

Gillespie S, Major Issues in the Control of Iron Deficiency; The Micronutrient Initiative.

Habtemariam Kassa, Ayalew W, Habte Gabriel Z and Gebre Meskel T. Enhancing the role of livestock production in improving nutritional status of farming families: Lessons from a dairy goat development project in Eastern Ethiopia.

Holt J. Lawrence M – An End to Isolation, Save the Children UK, 1991.

Horton S, Alderman H, Rivera JA, Copenhagen Consensus Challenge Paper, 2008

Horton S, Begin F, Greig A and Lakshman A - Micronutrient Supplements for Child Survival (Vitamin A and Zinc) Best Practise Paper, Copenhagen Consensus Paper. 2008.

Jaspars S, From food crisis to fair trade; Livelihoods analysis, protection and support in emergencies. ENN Special Supplement Series No 3 2006

Leroy JL and Frongillo EA – Can interventions to Promote Animal Production Ameliorate Undernutrition – The Journal of Nutrition 137, 2007.

MacColl A, A food based strategy to improve nutrition in emergencies – Improvement of Household Food Security through Home Gardening And Nutrition Education in Southern Somalia Field Exchange Issue 13, August 2001

Maxwell D, Sadler K, Sim A, Mutonyi M, Egan R, Webster M – Emergency food security interventions. HPN Good Practice Review No 10, 2008

Momanyi S, Baseline Report – The ECHO funded Somali Livelihood and Food Security Assistance – SOLAFA, 2009. Programme implemented by Veterinaries Sans Frontieres Germany Puntland State, Somalia.

Momanyi S and Jenet A, A Study on Hygiene Practices and Market Milk Chain of milk and milk products in Puntland, Somalia.

Meenakshi JV, Johnson N, Manyong VM, De Groote H, Javelosa J, Yanggen D, Naher F, Gonzalez C, Garcia J and Meng E – How cost effective is biofortification in combating micronutrient malnutrition? An *ex-ante* assessment? IFPRI HarvestPlus Working Paper 2007.

Ruel MT and Levin CE - Assessing the potential for food based strategies to reduce vitamin A and iron deficiencies: A review of recent evidence. IFPRI 2000.

Sadler K, Kerven C, Calo M, Manske M, Catley A, (2009) Milk Matters: A literature review of pastoralist nutrition and programming responses. Feinstein International Center, Tufts University and Save the Children, Addis Ababa.

Sadler K, Kerven C, Calo M, Manske M, Catley A – The fat and the lean: review of production and use of milk by pastoralists, Pastoralism Vol.1 No. 2 July 2010

Trenouth L, Powel J and Pietzsch S, Fresh food vouchers for refugees in Kenya. Field Exchange Issue 36, July 2009.

Watson C, Catley A, Livelihoods, livestock and humanitarian response: the Livestock Emergency Guidelines and Standards HPN Network Paper No 64 2008

Watson C, Catley A, Milk Matters: Improving Health and Nutritional Status of Children in Pastoral Communities.

Yeudall F, Gibson RS, Cullinan TR, Mtimuni B, - Efficacy of a community – based dietary intervention to enhance micronutrient adequacy of high-phytate maize-based diets of rural Malawian children. Public Health Nutrition: 8(7), 826-836, 2005

Annex VII

Somalia Food Security and Nutrition Response Analysis Support Team (RAST)

Applied Research Brief 2:

Non - Agriculture Based Routes to Nutrition in Emergencies: Implications for Interventions in Somalia.

Nairobi and Rome

February 2011

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

EUROPEAN COMMISSION
Humanitarian Aid

Table of Contents

INTRODUCTION **80**

1. DIRECT FOOD BASED TRANSFERS **81**

1.1 General food distribution (GFD) 81
1.1.1 General food distributions in Somalia *82*
1.2 Alternative approaches to GFD 84
1.2.1 Food for work (FFW) *85*
1.2.2 Cash based interventions *85*
1.2.3 School Feeding *86*

2. MANAGEMENT OF ACUTE MALNUTRITION **87**

2.1 Out Patient Therapeutic Feeding (management of severe acute malnutrition) 88
2.1.2 Management of severe acute malnutrition in Somalia *88*
2.2 Supplementary feeding programmes (management of moderate acute malnutrition) 89
2.2.1 Targeted supplementary feeding programmes (TSFP) *89*
2.2.2 Blanket supplementary feeding programmes (BSFP) *90*
2.2.3 Products for supplementary feeding programmes *91*
2.2.4 Supplementary feeding in Somalia *91*
2.2.5 Alternative approaches to Supplementary Feeding *92*

3. MANAGEMENT OF MICRONUTRIENT MALNUTRITION **93**

3.1 Food Fortification 93
3.1.1 Food fortification in Somalia *94*
3.2 Micronutrient supplementation 95
3.2.1 Micronutrient Supplementation in Somalia *95*
3.3 Vouchers 96
3.4 Home fortification products 96
3.5 Public health measures 97

4. BEHAVIOUR CHANGE COMMUNICATION (BCC) **97**

4.1 Behaviour change in Somalia 97

5. PUBLIC HEALTH **98**

REFERENCES **100**

RAST Applied Research Brief: Non-Agricultural Nutrition Response Option Archetypes[33]

Introduction

This brief focuses on non-agricultural based nutrition response options relevant to the food security and nutrition situation in Somalia. The range of interventions that can be considered is broad, covering both immediate and underlying causes of malnutrition as highlighted by the UNICEF causal framework and includes both curative and preventive approaches. Including this range of interventions gives emphasis to the importance of an integrated approach to responding to the nutrition and food security situation. The main non-agricultural based intervention archetypes are classified and discussed under the following headings:

1) Direct food based transfers
    - 1.1 general food rations,
    - 1.2 food for work,
    - 1.3 school feeding

2) Management of acute malnutrition
    - 2.1 Outpatient therapeutic feeding
    - 2.2 supplementary feeing – targeted and blanket

3) Management of micronutrient malnutrition
    - 3.1 micronutrient supplementation
    - 3.2 food fortification
    - 3.3 home based fortification products
    - 3.4 public health measures (deworming)

4) Behaviour Change

5) Public Health

For each intervention type, this review will discuss:
- key issues
- strengths and weakness and lessons learned as these apply to Somalia
- suitability for different areas and livelihood zones in Somalia

[33] This RAST Applied Research Brief was prepared by Anne Bush, Independent Public Health Nutritionist annebush1@gmail.com and edited by Neil Marsland, RAF Project Manager. The brief was done as part of the Somalia pilot for the ECHO funded Project entitled: "Developing a Response Analysis Framework for Food Security Emergencies".

1. Direct food based transfers

1.1 General food distribution (GFD)

General free food distribution remains the most common response to acute food insecurity in humanitarian crises. Food aid regularly constitutes over half of consolidated emergency appeals. The objectives of GFD are to meet immediate food needs, prevent malnutrition and to protect livelihoods/assets by eliminating 'the need for affected people to adopt negative coping strategies'. Measuring the nutritional impact of food aid is difficult (Shoham 2004) although food aid undoubtedly saves lives in emergencies. The evidence of the extent to which food aid can really support livelihoods and assets is mixed (Jaspars 2006).

Food is distributed based on needs assessment and vulnerability criteria. The targeting of food aid should result in the people most at risk receiving what they need, when they need it and in the amount they need whilst those who do not need it, do not receive (Maxwell et al 2008). The food ration basket usually consists of a staple cereal, a legume, oil or fat. Sugar and iodised salt are also intended but are not always consistently available. The Sphere Project 2004 has set minimum standards for food aid, recommending 2,100 kcal per person per day as minimum energy level the ration should meet with the correct balance of energy, protein, fat and micronutrients, adjusted as necessary to the local situation. Beneficiaries should be provided with access to a range of foods and commodities should be of good quality, safe to consume and acceptable and appropriate to the recipients.

Typically food aid has been imported from donor country sources (in-kind food aid), but more recently it has increasingly been purchased locally within the affected country, or regionally. The decision as to whether to procure locally or regionally or import in-food aid is often political. The Sphere Minimum Standards on Food Aid specify imported food should be used as a last resort, not as a default option.

When are General Food Distributions appropriate?

Levine and Chastre 2004 suggest that free food distributions are the appropriate response when the following three conditions all apply:

1. targeted households lack access to food; and
2. there is a lack of availability of food and inelastic supply (making income support ineffective in helping to increase access to food through the market) i.e. lack of opportunities to buy; and
3. alternative ways of helping people get access to food would either take too long, may not be practical or reliable.

When GFD are not appropriate

The Sphere Guidelines 2004 state that general free food distribution may not be appropriate when:

- adequate supplies of food are available in the area (and the need is to address obstacles to access);
- a localised lack of food availability can be addressed by support of market systems;
- local attitudes or policies are against free food handouts

Criticisms of GFD include:

- can draw people away from usual patterns of life
- can create unrealistic expectations
- may depress production and prices of food in local markets thereby affecting local livelihoods
- produce conflicts between those who receive food and those who don't
- food distribution may be used for political purposes

1.1.1 General food distributions in Somalia

Food distributions have been a feature of the humanitarian response in Somalia since 1991 when ICRC first intervened in the famine situation. Although the operation was successful in reaching the most vulnerable, it did face serious problems of looting and corruption and vying between rival clans for contracts, employment and control, the legacy of which remain today (Jaspars and Maxwell 2008).

In 2008 Somalia was one of the top five recipient countries of emergency food aid, alongside Ethiopia, Sudan, Zimbabwe and Afghanistan (Harvey et al 2010). Currently WFP general food distributions are targeted at rural populations in humanitarian emergency phase and IDPs plus families with malnourished children who are provided with "protection ration" to increase likelihood supplementary food ration is given to the malnourished child and not shared. However, the insecure and politically volatile environment means that food aid targeting and distribution are not without problems (Jaspars and Maxwell 2008). Furthermore, WFP Somalia is currently unable to intervene in South Somalia.

There has been limited analysis of the impact of food aid in Somalia. The current suspension of WFP food aid operations in Southern Somalia has not resulted in a systematic deterioration in nutrition other indicators. But the replacement of WFP programmes by interventions by other agencies and the recent bumper harvest may have mitigated any negative consequences.

One key piece of work by Jaspars and Maxwell (2008) evaluated the targeting of WFP food assistance in Somalia in 2008. Its authors concluded: 'Many factors make it very difficult to judge the impact of targeting, or indeed the impact of the food aid program generally, whether in terms of food security, nutrition or protection. The relative lack of information on food aid end usage, the impact of diversion of food aid, and of widespread sharing, it is clear that the attempts to target food aid in Somalia are fraught with difficulty.'

Strengths of GFD in Somalia

- where criteria for appropriateness are met, GFD can be meet the needs of vulnerable groups in HE or AFLC
- in the short term, GFD can address the immediate food needs of IDPS cut off from their usual means of existence
- humanitarian assistance cereal flours can be fortified providing a complementary approach to addressing the significant public health problem of anaemia and vitamin A deficiency throughout the three zones
- where GFD is targeted to families of malnourished children as a 'protection ration' to increase likelihood supplementary food is not shared amongst family members, sharing at community level is reduced as community perception is such that the family are allowed to keep their ration and not share with other non- targeted families (Jaspars & Maxwell 2008).

Weaknesses

Many of the weaknesses related to general food distribution in Somalia are a result of conflict, insecurity and the complex political environment. These include:

- lack of access by specific agencies to operate in specific areas (WFP in southern Somalia) limiting ability to reach those in most need
- looting and piracy reducing amount of food that can be delivered in country
- at community level, security and staff constraints mean that oversight of what happens to food tends to be left in the hands of community leaders. Fairness of distribution then varies according to the degree of accountability between community leaders and members. However, WFP are currently focusing on reducing the "inclusion and exclusion error" through improved targeting of villages and of beneficiaries within villages.
- lack of access for international staff thereby limiting monitoring
- where GFD is targeted to families of malnourished children receiving a supplementary food ration, it may create a protection risk for the targeted families

Strong community perceptions also affect targeting and distribution. Jaspars and Maxwell (2008) found a general belief among communities that the food ration should be shared and everyone should benefit. It was found that once in the hands of the community the food was redistributed beyond WFP targeted beneficiaries, usually by residential division or by sub clan. This re-distribution limits the number of people in any recipient community who are excluded from aid but also means no one ends up receiving very much.

The impact and appropriateness of GFD in Somalia may also be constrained by the chronic nature of food insecurity and the repeated shocks communities have experienced, often in quick succession.

It can be considered that another weakness of food aid in Somalia its dominance of the humanitarian response. Although food aid is undoubtedly essential, a broader-based response is required, one which provides basic services (health, water, sanitation and education) and livelihoods support with equal priority. Furthermore, in some circumstances food aid has undermined local strategies and coping mechanisms (Grunewald et al 2006).

Suitability for different livelihood groups

Where the criteria for appropriateness are met, GFD can be considered suitable for all livelihood groups in HE or AFLC in the short term. Relative accessibility between the different livelihood groups may be an issue. Food aid was reportedly less accessible to more isolated, nomadic pastoralist communities than settled farming and agro-pastoralist communities in Somalia (Grunewald et al 2006).

Despite the fact that food aid has been a common response to food insecurity among pastoralist communities not only in Somalia but throughout the Horn of Africa, there is limited information on the impact of this response on nutrition outcomes. What is apparent is that rates of malnutrition among children of pastoral communities remain high in spite of this food assistance (FSNAU Nutrition Trends 2001-2008). It has been reported that in some situations food aid has been used as a valuable source of animal fodder (Abebe Cullis et al 2008, Buchanan-Smith and Fadul 2008 quoted in Sadler et al 2009) suggesting indirect benefits in terms of livestock survival and/or milk supply.

Several evaluations of the impact of food distributions on pastoral economy have identified a positive impact (Jaspars 2006). However, food aid alone cannot achieve sustainable livelihoods and in some situations, the extent to which food aid has been able to support livelihoods has been limited due to limited scale and duration. Furthermore, repeated shocks experienced in quick succession in Somalia do not allow sufficient time for recovery. Alternative approaches or a combination of approaches to meeting food needs and supporting livelihoods may be more appropriate depending on the specific context and livelihood group.

1.2 Alternative approaches to GFD

There is increasing recognition throughout the international community that other types of response may also help people to meet their immediate food needs. Examples of alternative responses include:

- subsidised food, when people have some purchasing power but supplies are lacking
- improving purchasing power through employment programmes (including FFW)
- Livestock interventions
- cash based interventions
- vouchers

Such strategies may be more appropriate than food distribution as they preserve dignity, support livelihoods and therefore reduce future vulnerability (Sphere 2004). This review will

briefly discuss FFW and cash based interventions as interventions which have been implemented in Somalia. Livestock interventions have been reviewed in the RAST Applied Research paper No. 1, which looks at agriculturally based interventions. Suitability of different approaches for different livelihood groups will depend on the specific context.

1.2.1 Food for work (FFW)

The principle of food for work is that it uses the asset that many food insecure populations have available - their labour to build community assets and promote community development. Food is part, or all, of the wage paid.

Weaknesses

- FFW are often designed in response to concerns over creating dependency from free food distributions and are not always well thought out or designed (Maxwell et al 2008).
- Factors determining when FFW is effective and can contribute to assets and recovery are complex (Maxwell et al 2008).
- FFW is not appropriate if people are already malnourished or physically weak from an emergency. Therefore it is only suitable in slow onset emergencies where the intervention can be planned and introduced before the community become malnourished.

Food for work in Somalia

Where WFP is operational, FFW/FFA is currently being implemented in AFLC and BFI areas depending on nutritional situation and operational capacity of WFP and partners. WFP is aiming to reach 170,000 beneficiaries per month, with the objective of improving community asset base and resilience to shocks. Evaluations of FFW programmes in Somalia are unavailable (as far as I am aware).

1.2.2 Cash based interventions

Cash based interventions provide assistance in the form of cash, enabling people to decide for themselves what they most need, and to buy it in local markets. Cash may be an alternative or a complement to food aid. Cash can be considered a less bulky and a more discrete option than bulky food aid. However, cash based interventions are obviously dependant on food markets being functional and accessible and are suitable if the crisis is due to lack of access/ lack ability to purchase food rather than lack of availability. A comprehensive review of cash based responses can be found in Harvey 2007.

In terms of the impact of cash based responses on nutrition outcomes, there is little published work. An evaluation of Oxfam GB's emergency response in Zambia where cash grants were used found that beneficiaries able to buy amounts of food roughly comparable to standard food ration (Harvey and Marongwe 2006) and the evaluation suggested an increase in diet diversity. Where cash distributions were used in a pastoral area of Somalia, it was found that households spent a considerable proportion of the income on food, although data on the type of food purchases and impact on nutritional status was not available (Ali et al 2005). In Turkana,

Northern Kenya, beneficiaries of a cash-for-work intervention invested the income in purchasing goats. Although not measured, an impact on nutritional status of children may be assumed through increased milk supply (Kimetrica 2007 quoted in Sadler et al 2009).

Three papers in the literature (Ali et al 2005, Mattinen and Ogden 2006, Majid 2006) provide evidence that cash transfers are a valid option and can be implemented successfully in the volatile and politically complex environment of Somalia. With increased community participation and careful selection of project sites, cash interventions were shown to be successful in terms of diversifying household income sources and enhancing purchasing power (Mattinen and Ogden 2006) and reviving the local economy (Ali et al 2005). Initial concerns over security and inappropriate use of cash were largely proved to be exaggerated (Mattinen and Ogden 2006). These three cash based interventions were targeted at pastoral and agro-pastoral livelihood groups.

1.2.3 School Feeding

School feeding is included within this review as it is a direct food transfer intervention and currently features within the humanitarian response in Somalia, (although its objective is not nutritional). There are 3 main objectives of school feeding programmes (Bundy et al 2009): to address social needs and provide a social safety net during crises; to improve learning and education outcomes and to enhance nutrition.

There is conflicting evidence and diverging views regarding the effectiveness and appropriateness of implementing school feeding programmes, particularly in emergencies. The strongest evidence in favour of school feeding is towards meeting the first two objectives above. Evidence for the benefits of school feeding programmes is stronger when programmes are well designed and implemented and are accompanied by complementary interventions such as deworming, micronutrient fortification or supplementation.

School feeding can be implemented as on site feeding or take home rations. There is a lack of data on the relative effectiveness of each approach. In Somalia, WFP combine approaches with take home ration of oil for girls.

Strengths

- In effect, school feeding programmes involve the transfer to households of the value of the food provided. Therefore in poorer countries, school feeding can be an important social safety net instrument where other options are limited.
- A recent meta-analysis of WFP survey data from 32 countries in SSA (Gelli, Meir and Espejo 2007) found that implementation of school feeding programmes is associated with increased enrolment, particularly for girls.
- If school feeding programmes do improve enrolment and attendance of girls, then the inter-generational benefits can be huge. The odds of having a stunted child decrease by about 4–5 percent for every additional year of formal education achieved by mothers (Semba et al, 2008).
- If foods used for school feeding are fortified with micronutrients, this provides a useful additional channel to address micronutrient deficiencies

- School feeding programmes can provide an entry point for deworming and micronutrient supplementation. Where these approaches are combined, evidence for the beneficial effects on school attendance, cognition and educational achievement is stronger (Bundy et al 2009).

Weaknesses

- Evidence for school feeding programmes improving nutritional status is weak. A systematic review by Kristjansson et al (2007) found a significant but very small impact on growth of school age children (on average 0.39kg more than controls over 19 months)
- Evidence has pointed to the critical window of opportunity for targeting nutrition interventions to the first 24 months of life as the most cost effective option. Providing food to school age children will not reverse the damage of earlier nutritional deficit.
- Enhanced school attendance may not be matched by improved quality of education provided.
- In emergency contexts, school feeding does not address the nutritional needs of the most vulnerable people. As such it may compete for resources with programmes that aim to save lives.

On balance the main objectives of school feeding are as social safety net and to improve educational outcomes. School feeding should not compete with nutrition programmes for younger children which remain the clear priority for targeting malnutrition. The current WFP emergency school feeding programme in Somalia, targeting 85,000 children is implemented according to these objectives and uses a combined approach of providing on site feeding plus and additional take home ration of oil to girls.

Suitability for different livelihood groups

School feeding may be considered less suitable approach for nomadic communities where children less likely to attend regular formal school.

2. Management of Acute Malnutrition

Interventions for the management of acute malnutrition include curative (therapeutic feeding of severely malnourished and supplementary feeding for moderately malnourished) and preventive (supplementary feeding). Traditionally decisions over when to intervene using which approach have been based on nutrition situation as defined by thresholds of GAM and SAM plus contextual analysis. (NB can go into this in more detail if felt appropriate)

2.1 Out Patient Therapeutic Feeding (management of severe acute malnutrition)

According to the Lancet series on Undernutrition 2008, the appropriate management of severe acute malnutrition was one of the interventions reviewed that showed the most promise for reducing child deaths and future disease burden related to undernutrition (Bhutta et al 2008). In recent years, the approach to the management of severe acute malnutrition has shifted from centre-based therapeutic feeding to the widespread adoption of community-based management of acute malnutrition (CMAM), often referred to in Somalia as Out Patient Therapeutic Feeding or OTP. CMAM approach focuses on the early detection of severe acute malnutrition within the community. Children between 6 and 59 months presenting with severe acute malnutrition and life threatening complications are referred for admission to in patient therapeutic care. Uncomplicated cases are treated on an out patient basis attending weekly or fortnightly basis for follow up and ration. CMAM is now supported by UNICEF, WHO, WFP and UN SCN as the most appropriate strategy for the management of severe acute malnutrition.

Strengths of CMAM approach compared to standard management of acute malnutrition approach using therapeutic milks in a centre based setting:

- It reduces huge opportunity costs of patients and carers of having to remain away from family and livelihoods/income generating activities for up to one month
- Reduces exposure to disease and therefore minimises risk of cross -infection
- In Patient Therapeutic Feeding Centres are costly and difficult to set up, require substantial infra structure and skilled and experienced staff
- Increases number of children who can be treated
- Reduces dropout rates (Collins et al 2006)
- Mean cost of CMAM has been estimated to be USD 203 per child treated of which RUTF was 36% of costs (O Bachman 2009). The cost per life saved was estimated at USD 1760 and cost per DALY gained USD 53 which is comparable to other priority child health care interventions such as measles immunisation or vitamin A supplementation.

Weaknesses

Still require in-patient stabilisation centres for the treatment of complicated cases. This is a particular constraint in Somalia where coverage of in-patient facilities is limited.

2.1.2 Management of severe acute malnutrition in Somalia

The emergence of the CMAM approach has facilitated significant improvements in geographical coverage of programmes for the severely malnourished. UNICEF Somalia is currently supporting at least 436 OTP. (NB if available insert programme data on effectiveness, % programmes meeting Sphere standards). Recently Somali Guidelines for the Management of Acute Malnutrition have been developed which reflect the expansion of the CMAM approach and which importantly include field guides and training materials aimed at capacity building of local partners and improving quality of programme delivery. As highlighted in the Basic Nutrition Services Package (BNSP) for Somalia, the challenge now is to increase client coverage and use

the nutrition programming infrastructure to expand access to nutrition related essential services – IYCF, health, WASH.

Suitability for different livelihood groups

The management of severe acute malnutrition is curative therefore the approach is the same regardless of livelihood group. The reduced opportunity costs to patients and carers of the CMAM approach means it is more suitable for all livelihood groups.

2.2 Supplementary feeding programmes (management of moderate acute malnutrition)

Over the last forty years, supplementary feeding programmes (SFPs) have remained the main approach to the management of moderate malnutrition (Shoham 2010). SFPs can be implemented as either dry take home rations or onsite feeding. In terms of the dry take home ration approach, there have been recent innovations in the development of new products which have implications for the effectiveness of the intervention (see section below on products). In Somalia SFPs typically provide a dry take home ration. There are two types of SFPs – targeted and blanket.

Levine and Chastre (2004) suggest SFCs are appropriate where:

1. the child's malnutrition is caused by an individual lack of access to food of sufficient quality and quantity; and
2. the food quality of the SFC ration is the correct one for the child: and
3. there is reason to believe the food is actually consumed by the child

2.2.1 Targeted supplementary feeding programmes (TSFP)

The aim of **targeted supplementary feeding programmes (TSFP)** is to treat moderately acute malnourished children and prevent deterioration to severe acute malnutrition and thereby prevent an increase in mortality. Moderately malnourished children are usually identified in the community or referred from the TFC/SC/OTP. Admission is normally based on nutritional status, where weight and height measurements are compared against international growth standards in reference tables. A supplementary food ration is provided to all within the targeted group. Typically, the criteria for starting TSFPs have been GAM rates of 10-14% or 5-9% with aggravating factors.

Strengths

- Provides a supplementary food ration to moderately malnourished children to prevent further deterioration in nutritional status reducing risk of mortality
- Infrastructure and client contact provides an entry point for other key related child health interventions - micronutrient supplementation, immunisation, deworming, nutrition education, hygiene promotion and behaviour change.

Weaknesses

- For TSFP to be effective, it is essential that the household has access to adequate basic food supply to reduce likelihood that the SFP ration is shared with other household members. For this reasons, in Somalia, WFP provides a general food ration to the households of moderately malnourished children in TSFP to 'protect' the supplementary food given.
- A recent review of the effectiveness of emergency SFPs based on 82 programme data sets from 16 agencies found that <40% of programmes achieved SPHERE standards for key indicators. The main reason for this was high defaulting and low coverage. (Navarro-Colorado 2008)
- Relative cost inefficiency of setting up a separate infrastructure from GFD in order to allocate relatively small amounts of food to vulnerable groups.
- Appropriateness of using FBF as the supplement which may have limited impact on weight and physiological health (Perez-Exposito and Klein 2009). New products have been proven to result in improved weight gain compared to FBF (see below).
- Causes of malnutrition may be poorly understood i.e. the problem may not be due to inadequate quantity and quality of food at household level. Care practices or access to healthcare may be the main causal factor in high rates of malnutrition, meaning the distribution of additional food is not the answer.
- High opportunity costs to carers
- Vulnerable to security constraints restricting access.

2.2.2 Blanket supplementary feeding programmes (BSFP)

BSFP aim to prevent widespread malnutrition and reduce excess mortality. BSFP are typically implemented in situations where the prevalence of malnutrition is already very high (usually GAM >15%) or where a specific group is at risk. In Somalia, the approach tends to be to implement BSFP when GAM rates higher than 20%. A supplementary ration is provided to all in the decided vulnerable group irrespective of whether they are malnourished or not. The primary target group is children under five, although BSFP may be targeted to children under three or under two years, according to availability of resources. In case of limited resources, the priority is to reach children aged 6 to 24 months as the key window of opportunity where interventions are proven to have the maximum impact (Shrimpton et al 2001). Pregnant and lactating women often included in BSFP.

Strengths

- Can be set up at the onset of an emergency when general food distribution systems are not adequately in place.
- Can be implemented at specific times for example to address an anticipated increase in rates of malnutrition due to seasonally induced epidemics.
- In case of micronutrient deficiency outbreaks, can be used to provide micronutrient-rich food to the target population.

Weaknesses of BSFP are similar to those cited above for TSFPs.

2.2.3 Products for supplementary feeding programmes

SFP rations are normally based on a premix prepared from blended food or cereal flour and other ingredients, usually including sugar and a vegetable oil to increase energy density, and an additional protein source e.g. soya. Traditional products used are Fortified Blended Foods (FBF): corn soy blend (CSB) provided together with oil and sugar and UNIMIX. The success of RUTF in the management of severe acute malnutrition led to the development of similar products for the management of moderate acute malnutrition – ready to use supplementary food (RUSF). These products are part of the group of so-called lipid based nutrition supplements (LNS) which are fortified with multiple micronutrients and in which lipid is the primary source of energy.

Various research programmes are underway to investigate the efficacy and effectiveness of LNS in treatment and prevention of moderate malnutrition. To date, LNS have been proven to improve linear growth of young children (Matilsky et al 2009) and most recently in a study in Niger LNS has proven more effective than CSB in the treatment of childhood moderate acute malnutrition. LNS resulted in higher weight gain, a higher recovery rate, shorter length of stay and lower transfer rate to the therapeutic feeding programme compared to CSB pre-mix (Nackers et al 2010). A major area of contention so far under evaluated is the cost effectiveness of approaches using LNS. The products themselves are costly but with higher efficacy, better coverage, lower drop out rates, lower opportunity costs (do not require cooking) and reduced programme costs, on balance LNS may prove more cost effective than SFP using traditional FBF.

Other new products under development are CSB+ (for pregnant & lactating women, children 2-5 years) and CSB++ (for children under two), which may improve the effectiveness of fortified blended food in the future.

2.2.4 Supplementary feeding in Somalia

SFPs in Somalia have typically been of the take home dry ration approach using FBF. Whilst there have been no formal evaluations, various factors can be considered to have limited the effectiveness of SFPs to date. These include:

- inadequate general food distribution (inadequate food security at household level),
- inadequate understanding of specific causes of malnutrition in a given context, whether it is due to low food quantity and quality or due to inadequate care practices or public health or WASH issues
- SFPs have tended to be delivered in isolation of other complementary responses egg immunisation, deworming, micronutrient supplementation, hygiene promotion etc. More recently there is increasing recognition of need for a more integrated response (see Somali BNSP, Somali Nutrition Strategy)
- The traditional use of CSB: it has proven acceptability, low cost (?) and limited pipeline issues but CSB has a low energy density compared to stomach capacity of child and a high phytate content, inhibiting micronutrient absorption,
- In the Somali context it is rarely possible to blend CSB with oil and sugar at distribution (as is usual practice), thereby limiting the energy density of the given ration

- Security constraints limit supervision – weak supervision has been associated with reduced success of SFPs (Navarro-Colorado 2008)
- Supplementary food aid may be diverted or sold, a practice associated with the provision of unpopular commodities and with the cost to the family of transporting the ration back home (Grunewald et al 2006).

Use of LNS in the management and prevention of moderate malnutrition in Somalia may prove particularly useful. LNS in the form of the product 'Plumpy Doz' has been used in Somalia under operational research conditions. However with high prevalence of acute malnutrition and limited contacts with beneficiaries, evaluating and documenting impacts have proved difficult.

More recently LNS (RUSF) is now being used increasingly in WFP-run SFPs. In October 2010, 70% of programmes used RUSF and in the coming months WFP plan to scale up the use of LNS to 100% to include central region. As yet there has no evaluation on the impact of this change in programming in Somalia. However, preliminary results of WFP use of RUSF in Mogadishu in partnership with NGOs SAADAC and Oxfam Novib are encouraging and RUSF shows clear logistical and programmatic advantages in security situations in Somalia. Transportation and storage are cheaper, there is reduced risk of contamination and distribution process is easier. The preliminary results of an acceptability study are also encouraging and beneficiaries demonstrated almost universal knowledge on purpose, dosage and key messages. Furthermore, the programme has noted an increase from 50% cure rate to over 90% between October 2009 and January 2010. The defaulter reduced from around 45% to less than 5% in same period. Analysis of cost effectiveness is needed.

2.2.5 Alternative approaches to Supplementary Feeding

In the light of findings of Navarro-Colorado (2008), the Emergency Nutrition Network (ENN) and Save the Children UK are leading work looking at coverage, impact and alternative approaches to supplementary feeding programmes. The replacement of CSB with a more effective product within the traditional design of SFPs is one alternative which has already been shown to improve nutrition outcomes. However, it may be that the traditional SFP design may not be the most appropriate approach in every context (Shoham 2010). At a recent high level international meeting on moderate malnutrition consensus was reached that there needs to be increasing momentum within international nutrition community to investigate alternative approaches. At least four 'alternative' approaches could be studied:

- Modified/Expanded General Ration with CSB++ or LNS without an emergency SFP
- Cash/voucher intervention to allow purchase of basic ration and appropriate foods like CSB ++ or LNS
- Combination of cash and food, e.g. Productive Safety Net Programme in Ethiopia
- Blanket distribution of specialised food to under 3yr/under 5 year olds at critical points of agricultural calendar.

The potential advantages of using alternative approaches to SFPs include: greater coverage of under-three/five population and impact at population level if use main food or cash distribution system; cheaper for implementing agencies; opportunity costs for carers are lower. In Somalia, the practice of selling of supplementary food ration may be reduced by the use of LNS as a replacement for unpopular commodities or by a cash-based intervention. However, the potential disadvantages are: poor targeting to malnourished children with rations shared or cash not spent on food; no mechanism to ensure medical inputs and lower recovery rates.

3. Management of micronutrient malnutrition

The Somalia Micronutrient survey 2009 has provided importance evidence on the nature and scale of micronutrient deficiencies throughout the three zones. The prevalence of nutritional anaemia and vitamin A deficiency among both children and women represent a serious public health problem according to WHO classification. Prevalence of anaemia and vitamin A deficiency were the highest in SCZ, suggesting a region specific approach is required.

Of the different approaches to combating micronutrient malnutrition, the best way is to ensure the consumption of a balanced diet. This encompasses increasing dietary diversification through increased production, preservation and marketing of micronutrient-rich foods combined with nutrition education. This approach is complex and has a long term time scale but is more sustainable. It has been reviewed in more detail in John's paper. In the shorter term, micronutrient supplementation and food fortification and deworming have been proven both highly effective and low cost interventions. With their high benefit to cost ratio, these interventions have been identified as among the top ten cost-effective solutions to global challenges (Copenhagen Consensus 2008). The different approaches listed should be regarded as complementary, with their relative importance depending on local conditions and the specific mix of local needs.

3.1 Food Fortification

Food fortification refers to the process of adding micronutrients to foods to improve their overall nutritional content. Typical food vehicles are salt, wheat flour, maize flour, rice, sugar and oil.

Strengths

- Able to deliver nutrients to the population without requiring changes in food habits/ consumption patterns.
- Can provide nutrients that are not obtainable in sufficient doses from local foods, such as folic acid for the prevention of birth defects.
- Usually socially acceptable,

- Is a safe, cost-effective way of improving micronutrient status of large target populations relatively rapidly (WHO FAO Guidelines on Food Fortification with Micronutrients 2006).

The Copenhagen Consensus paper on best practices in Food Fortification estimates that the cost per person per year of flour fortification is USD 0.12 and the benefit to cost ration is 8:1.

Weaknesses

- the fortified food(s) needs to be consumed in adequate amounts by a large proportion of the target individuals in a population.
- It is necessary to have access to, and to use, fortificants that are well absorbed yet do not affect the sensory properties of foods.
- Food industry and technology needs to be developed enough
- Mechanisms for food safety and quality control standards need to be in place

3.1.1 Food fortification in Somalia

This is a new area for Somalia which requires preliminary work before going to scale. Activities and outputs were agreed and are identified in the nutrition strategy, commencing with the commissioning of a food fortification expert. The following three approaches were agreed: fortification of food aid; community level fortification of locally available food in low access zones; and importation of fortified foods (for example pasta). An Interagency team (WHO, UNICEF, WFP) attended the Harmonisation Workshop for Flour Fortification in April 2010 in Nairobi and agreed upon an action plan.

Strengths

- with a large percentage of the population receiving humanitarian assistance, fortification of cereal flours distributed through the general food ration will reach a significant proportion of the target populations
- Even in a good year, Somalia imports 60% of its cereal requirement therefore fortification of imported cereal flours presents an important vehicle for improving the micronutrient intake of a significant proportion of the population.
- Fortification of flour at the community level may be a useful approach in low access areas.

Weaknesses

- weak authorities and a lack of food safety and quality control standards
- lack of local technical capacity, industry and infrastructure

Suitability for different livelihood groups

One of the main vehicles for food fortification is cereals, therefore this approach will target those groups consuming a largely cereal based diet and may be less suitable for addressing micronutrient deficiencies in pastoralist communities.

3.2 Micronutrient supplementation

Supplementation is the term used to describe the provision of relatively large doses of micronutrients, usually in the form of pills, capsules or syrups. In developing countries, supplementation programmes have been widely used to provide iron and folic acid to pregnant women, and vitamin A to infants, children under 5 years of age and postpartum women. Because a single high-dose vitamin A supplement improves vitamin A stores for about 4–6 months, supplementation two or three times a year is usually adequate. However, in the case of the more water-soluble vitamins and minerals, supplements need to be consumed more frequently.

Strengths

- Supplies an optimal amount of a specific nutrient or nutrients, in a highly absorbable form,
- Often the fastest way to control deficiency in individuals or population groups that have been identified as being deficient
- Highly cost efficient: Vitamin A and zinc supplementation provide the best returns according to Copenhagen Consensus. Annual investment of USD 60 million would yield benefits worth USD 1 billion per year. Vitamin A supplementation in sub Saharan Africa costs USD 1.20 per person per year with a benefit to cost ratio of 17:1; while zinc supplementation costs USD 1.00 per person per year with a benefit to cost ratio of 13.7:1.

Weaknesses

- Needs effective supply chain management (not always a feature of developing country health systems)
- Poor compliance by the beneficiaries is consistently reported as being the main barrier to success.
- Requires effective delivery mechanism, may need multiple channels to reach effective coverage levels (community based, health facility, out reach)

3.2.1 Micronutrient Supplementation in Somalia

The Basic Nutrition Services Package for Somalia identifies the distribution of appropriate micronutrient supplements to their respective target populations should be the minimum level of service provision, considered immediately feasible and appropriate in all areas of Somalia

with international and national guidance and resources available. In theory there should be no difference in suitability between livelihood groups.

3.3 Vouchers

One leading view is that food transfers should be used when food intake is prioritized for nutritional purposes.[34] However evaluations of projects in Somalia and elsewhere[35] point to successful use of vouchers when addressing micronutrient objectives. Their use is a preferable way of supplying a full range of micronutrients than multi-nutrient mix supplementation, as there is no risk of chemical reaction between different nutrients. However the amounts provided on a daily basis through increased micronutrient rich foods are less than through supplementation. Voucher schemes linked to micronutrients need sufficient time to show effectiveness and demonstrate impact.

Micronutrient deficiencies, vitamin A are affected by the seasonality, especially during drought and periods of food shortage. Once such events occur, fresh fruit and vegetables and milk are likely to be in short supply in local markets. A timely intervention may be to implement vouchers, allowing purchases, whilst supplies are still available, enabling vulnerable groups to increased body stores of micronutrients before a protracted drought impacts. VSF Germany provide vouchers to children < five years from the start of protracted drought periods. These are distributed within Garowe in Puntland, and allow beneficiaries to purchase milk, meat, vegetables, as well as energy foods. Beneficiaries have a strong preference to buy milk. The intervention is accompanied by an awareness raising component. Impact is measured through anthropometry, as well as the use of the Household Dietary Diversity Score (HDDS). The voucher of two litres per week has guaranteed nutritional diversity for households with one or two children[36]

Vouchers can be used in any livelihood zone, depending on the need.

3.4 Home fortification products

[34] Barrett CB, Bell R, Lentz EC, Maxwell DG – Market information and food insecurity response analysis.

[35] Trenouth L, Powel J and Pietzsch S, Fresh food vouchers for refugees in Kenya. Field Exchange Issue 36, July 2009.

[36] Momanyi S, Baseline Report – The ECHO funded Somali Livelihood and Food Security Assistance – SOLAFA, 2009. Programme implemented by Veterinaries Sans Frontieres Germany Puntland State, Somalia.

This refers to multiple micronutrient powders which are used for in-home fortification of foods egg "Sprinkles". Effectiveness studies have shown the significant efficacy of this approach especially in low income countries with high rates of infant mortality, anaemia and diarrhoea. Cost per death averted is estimated to be USD 406 and cost per DALY saved to be USD 12-20 (Sharieff et al 2006). In Somalia there may be particular challenges regarding distribution mechanisms, appropriate use and consumer compliance which could affect effectiveness. In theory there should be no difference in suitability between livelihood groups.

3.5 Public health measures

Micronutrient deficiencies can also be addressed through the control of infectious diseases. In particular deworming has been proven to be a highly cost effective option (Copenhagen Consensus 2008).

4. Behaviour change communication (BCC)

BCC needs to be a systematic approach to creating awareness, understanding and adoption of appropriate practices throughout the community, not only for the caregivers themselves but their support networks and surrounding influencers. Behaviour centred programmes that are informed by research on local food, local feeding behaviours and practices and barriers to optimal feeding can be both effective and sustainable.

Community based nutrition promotion was ranked 9th in the Copenhagen Consensus 2008 results of most cost effective solutions to development challenges. The promotion of early initiation and exclusive breastfeeding (0-6 months) was identified as one of the most effective interventions for reducing the burden of child morbidity and mortality in the Lancet series (Bhutta et al 2008). Behaviour change communication strategies to improve complementary feeding practices have been proven effective in improving growth outcomes in young children.

Educational strategies should focus on imparting the knowledge and develop skills to maximise use of locally-available, high-quality foods, as well as food safety, cultural beliefs and intra-family food distribution. Delivery should be through multiple channels: individual, community and mass media integrated into the programmes that reach mothers and children i.e. nutrition programmes, schools, community based initiatives and MCH and outreach services.

4.1 Behaviour change in Somalia

Results from both KAP 2007 and Micronutrient Survey 2009 highlight the need for widespread behaviour change to improve infant and young child feeding and care practices in order to address underlying causes of malnutrition in Somalia. Areas where behaviour change is crucial in Somalia include the promotion of early initiation and exclusive breast feeding (0-6 months). Exclusive breastfeeding from 0 to 6 months is only practised by 13% of mothers. Among

pastoralists mothers in Somali region of Ethiopia the rate was as low as 6.6% (quoted in Sadler et al 2009). Among pastoralists, it is common practice for animal milk to be introduced when the infant is just a few days old. More generally, the active promotion and advertisement of breast milk substitutes throughout Somalia is a major obstacle to improving infant feeding practices, requiring a cross the board approach. Not only do the knowledge attitudes and practices of caregivers need to be changed but also those of local traders and advertisers, community and religious leaders.

Another important area for behaviour change communication is the promotion of appropriate and timely complementary feeding for young children. However, as evidence from the Lancet series on undernutrition concluded, such strategies alone may have limited impact among the food insecure in Somalia unless food or food supplements are also provided.

One example of a successful approach in Somalia is the Trials of Improved of Practices (TIPS) approach which has been being piloted in Hiran and Gedo, areas that were identified in KAP study as being particularly vulnerable for IYCF. This project aims to identify and implement the most acceptable practices in the region in improving infant and child feeding practices. The method involves discussion with the mothers and caregivers in moving towards recommended IYCF over three household visits. The approach aims to move from ideal recommendations on improved IYCF to practical recommendations, informed by local conditions and behaviours. (NB awaiting communication from FSNAU on any evaluation of this approach.)

Suitability for different livelihood groups

Behaviour Change is suitable for all livelihood groups. However, an understanding of the local context and specific issues that need addressing is crucial. There will be differences in approach, content of messages and delivery mechanisms depending on livelihood group. There is evidence to suggest that behaviour change interventions may not be effective in pastoralist communities but this is based on only one impact assessment of breastfeeding interventions in pastoralist women in Somali region of Ethiopia which found limited changes in behaviour and practice (quoted in Sadler et al 2009). Many issues will cut across sectors egg good hygiene promotion.

5. Public Health

The Lancet series on Child Survival 2003 identified package of low cost feasible interventions which if implemented at scale will prevent around two-thirds of child deaths in low and middle income countries (Jones et al 2003).

Overall, coverage of these essential public health interventions in Somalia is low and reflects poor access to quality health services and widespread inappropriate health seeking behaviours, particularly in south central zone (KAP 2007). Access and coverage of interventions can be addressed through health system strengthening, while improving health seeking behaviours is one aspect of behaviour change communication. Improving coverage of feasible evidence-based public health and WASH interventions will have a direct effect on reducing immediate

and underlying causes of malnutrition in Somalia among all livelihood groups. Approaches to address public health problems that reach out to pastoral populations need to be considered egg vaccination campaigns, child health days to be conducted at water points or on market days.

References

Ali D, Toure F and Kiewied T. Cash relief in a contested area: Lessons from Somalia. HPN Network Paper number 50 March 2005

Bhutta ZA, Ahmed T, Black RE et al. Maternal and Child Undernutrition 3: What works? Interventions for maternal and child undernutrition and survival. *The Lancet Series,* Vol. 371, published online 17th January 2008

Bundy D, Burbano C, Grosh M, Gelli A, Jukes M and Drake L. Rethinking School Feeding: Social Safety Nets, Child Development and the Education Sector. World Bank and WFP 2009

Caldwell R and Hallam A. The cost of selective feeding. Field exchange 2004 (Special Supplement 2)

Collins S, Dent N, Binns P. Management of severe acute malnutrition in children. *Lancet* 2006; 368: 1992-2000

Dewey K, Adu-Afarwuah S. Review article: Systematic review of the efficacy and effectiveness of complementary feeding interventions in developing countries. *Maternal and Child Nutrition*, 2008, 4:24-85.

Field exchange Issue 31 September 2007 Emergency School Feeding Programmes: A summary of WFP evaluation.

FSAU Somali Knowledge Attitude and Practices Study (KAPS) Infant and Young Child Feeding and Health Seeking Practices December 2007,

FSNAU, FAO & UCL National Micronutrient and Anthropometric Nutrition Survey Somalia 2009

FSNAU Nutrition Trends in Somalia (2001-2008) A Meta analysis study report (DRAFT)

Gelli, A., U. Meir, and F. Espejo. 2007. "Does Provision of Food in School Increase Girls' Enrollment? Evidence from Schools in Sub-Saharan Africa." *Food and Nutrition Bulletin* 28 (2): 149–55.

Grunewald F, Robbins K, Nicholson N and Adico A (2006) Somalia: Real Time Evaluation of the 2006 Emergency Response. Final report

Harvey P (2007) Cash-based responses in emergencies. HPG Report No 24 ODI January 2007

Harvey, P. and N. Marongwe (2006) *Independent Evaluation of Oxfam GB Zambia's Emergency Cash-Transfer Programme*, Overseas Development Institute report for Oxfam.

Harvey P, Proudlock K, Clay E, Riley E and Jaspars S. Food aid and food assistance in emergency and transitional contexts: a review of current thinking. Humanitarian Policy Group Synthesis Paper June 2010.

Horton S, Alderman H, Rivera JA, Copenhagen Consensus 2008 Challenge Paper: Hunger and Malnutrition, Copenhagen Consensus Center, May 2008

Horton S, Shekar M, McDonald C and Mahal A. Scaling Up Nutrition: What will it cost? World Bank 2009

Jaspars s. From food crisis to fair trade: Livelihoods analysis, protection and support in emergencies. ENN Special Supplement Series number 3, March 2006

Jaspars S and Maxwell D. Targeting in Complex Emergencies: Somalia Country Case Study. Feinstein International Centre July 2008.

Jones G, Stekete RW, Black RE, Bhutta ZA, Morris et al. How many child deaths can we prevent this year? Lancet 2003; 362: 65-71

Kristjansson, E., V. Robinson, M. Petticrew, B. MacDonald, J. Krasevec, L. Janzen, T. Greenhalgh, G. Wells, J. MacGowan, A. Farmer, B. J. Shea, A. Mayhew, and P. Tugwell. School Feeding for Improving the Physical and Psychosocial Health of Disadvantaged Elementary School Children." *Cochrane Database of Systematic Reviews 2007 Issue 1*

Levine S and Chastre C Missing the point: An analysis of food security interventions in the Great Lakes. HPN ODI Network Paper Number 47 July 2004

Majid N. Alternative interventions in insecure environments: the case of cash in Southern Somalia. Humanitarian Exchange Magazine Issue Number 37 March 2006

Maxwell D, Sadler S, Sim A, Mutonyi M, Egan R and Webster M. Emergency Food Security Interventions. HPN ODI Good Practice Review Number 10 December 2008

Matilsky DK, Maleta K, Castleman T and Manary MJ Supplementary Feeding with Fortified Spreads results in higher recovery rates than with a corn/soy blend in moderately wasted children. J Nutr 2009; 139: 773-9

Mattinen H and Ogden K. Cash based interventions: lessons from Southern Somalia. *Disasters 2006, 30(3) 297-315*

Nackers F, Broillet F, Oumarou D, Djibo A, Gaboulaud V, Guerrin PJ, Rusch B et al Effectiveness of ready-to-use therapeutic food compared to a corn/soy-blend-based pre-mix for the treatment of childhood moderate acute malnutrition in Niger. *J Trop Paed*

Navarro-Colorado C, Mason F and Shoham J (2008) Measuring the effectiveness of Supplementary Feeding Programmes in emergencies HPN ODI network paper number 63 September 2008

O Bachmann M. Cost effectiveness of community-based therapeutic care for children with severe acute malnutrition in Zambia: decision tree model. *Cost Effectiveness and Resource Allocation* 2009, **7**:2

Perez-Exposito AB and Klein BP. Impact of fortified blended food aid products on nutritional status of infants and young children in developing countries. *Nutrition Reviews* Vol. 67(12):706–718

Sadler K, Kerven C, Calo M, Manske M, Catley A, (2009) Milk Matters: A literature review of pastoralist nutrition and programming responses. Feinstein International Center, Tufts University and Save the Children, Addis Ababa.

Semba, R. D., S. de Pee, K. Sun, M. Sari, N. Akhter, and M. W. Bloem. 2008. "Effect of Parental Formal Education on Risk of Child Stunting in Indonesia and Bangladesh: A Cross-Sectional Study." *Lancet* 371 (9609): 322–8.

Sharieff W, Horton SE, Zlotkin S. Economic Gains of Home Fortification Program; Evaluation of "Sprinkles" from the Provider's Perspective. Canadian Journal of Public Health Jan-Feb 2006, p1

Shoham J (2004) Assessing the impact of Humanitarian Assistance: A review of methods in the food and nutrition sector. HPG Background paper ODI.

Shrimpton, R, Cesar G. V, Mercedes de Onis, Rosângela Costa Lima, Monika Blössner, and Graeme Clugston. 2001. "The Worldwide Timing of Growth Faltering: Implications for Nutritional Interventions." *Pediatrics* 107: e75.

The Sphere Project (2004). Humanitarian Charter and Minimum Standards in Disaster Response, Oxford: Oxford Publishing

World Bank Repositioning Nutrition as Central to Development, a strategy for large scale action, World Bank 2006, ISBN-10:0-8213-6399-9

Young H and Jaspers S (2006) The meaning and measurement of acute malnutrition in emergencies: A primer for decision makers. HPN ODI network paper number 56 November 2006