

EXECUTIVE SUMMARY

The aim of the research was to establish associations between prevalence of acute and chronic malnutrition and its causes at the household level, with particular emphasis on caring practices. The recommendations are designed to guide future programming for Save the Children (UK) and a wider group of organizations concerned with improvements in child malnutrition.

The research was designed using the UNICEF Conceptual Framework on the causes of malnutrition. Household surveys and FGDs were used to collect information on health, caring practices and food security. Fieldwork was undertaken in 2 Livelihood Zones (LZ): pastoral and agro-pastoral in Shinile and Dambal districts of Shinile zone between September 2005 and July 2006; two rounds in each LZ. These are current, secure operational areas for Save the Children (SCUK). The quantitative survey of 3738 households included 4293 children under 36 months. The practices of child feeding were compared to international standards on breastfeeding duration, exclusive breast feeding, feeding frequency and dietary diversity. Wealth was assessed by animal ownership (for pastoralists) and by a combination of animal ownership and land cultivation (for agro-pastoralists). The data were analysed, wherever possible for their associations with malnutrition of children. In addition, information to support the research was gathered from key informants at each kebele and FGDs with mothers, men and children. Background information was collected from district officials.

The research results indicate rates of wasting (low weight for height in children under 3 yrs) changed seasonally and were highest in the second pastoral survey following the bad *jilaal* dry season (21.3 % overall and 2.7% severe). Average for 3 rounds was 15.9% overall and 1.8% severe. Stunting (low height for age) was more consistent across the seasons with 19.6 % overall stunted and 4.1% severely stunted in the 3 rounds. Underweight (low weight for age) was on average 30.1% overall and 6.8% severely underweight in the 3 rounds². Wasting was higher on average than national Demographic Health Survey (DHS) data for 2005 and stunting was less.

Wasting, stunting and underweight all increased with age, particularly from 6-12 months. At this age illness is at its highest rate, weaning foods have either not started or are of inadequate quality and mothers start to leave the children for extended periods with other carers. Catch up growth is inadequate thereafter although levels of wasting improve after about 24 months. Boys tend to be more malnourished than girls at most ages, although this is not understood to be related to any differences in practices or conditions but rather to biological differences.

Prevalence of wasting was higher on average in poorer groups (17.5%) compared to the better-off (12.5%) ($p = 0.024$) although there was no discernable difference for stunting. Milk consumption was greater in the better-off group but feeding frequency of solid food was only related to wealth in one survey round when average feeding frequency was high (first agro-pastoral survey). During the harsher seasons, we hypothesise that more sharing of resources between better-off and poor minimized the differences. There is strong community support and sharing of resources that offer some protection against the vulnerable food security situation. Dietary diversity, on the other hand, was more related to wealth in each survey, the better-off

² The first survey round was not included in the analyses due to initial problems with age and weight assessments

having greater capacity to provide a diverse diet to young children. Poorer children were also at greater risk of common childhood illness (shown by differences in diarrhoea and fever).

Breastfeeding practice did not follow international recommendations for exclusive breast feeding for the first 6 months (only 6.6% of infants were exclusively breast fed), mostly due to the common practice of giving animal milk early. Breastfeeding also stops early; more than half the children are no longer breastfeeding at 20 months. Animal milk forms an important part of the diet of the children and for those over 6 months is an important protective factor for wasting. For the younger children under 6 months it is a risk factor for underweight. Solid and semi-solid foods are started later than the recommended 6 months. This is due to a lack of special weaning foods, as well as methods to prepare suitable foods, time constraints and a belief in the benefits of milk. Frequency of feeding and diversity of weaning foods do not meet international recommendations for most children. For each age group less than 20% met these recommendations and less than 10% of children consumed vegetables, legumes, fruit or meat on the survey day. Although not assessed biochemically, the type of diet consumed by these children is likely to result in micronutrient deficiencies and anaemia. Low consumption of these foods was related to lack of money, market availability and lack of priority given to these foods.

One hypothesis resulting from the research is that the consumption of animal products could be contributing to lower rates of stunting compared to other regions of Ethiopia where animal products are not as available. The availability of animal products, especially milk is the positive aspect of diets that needs emphasizing, and the communities are well aware of this and prize milk above most other foods.

Another key association was identified between child morbidity and both stunting and wasting. There were high rates of diarrhoea (23%) fever (28%) and cough (32%) in children. The odds ratios (OR) for wasting and diarrhoea was 1.6 and for wasting and fever 1.7 in a multiple logistical regression model. The direction of causality is not clear for these associations: illness causes malnutrition and malnutrition also causes illness.

Vaccination coverage was poor, particularly for BCG (5%) and health services in general are lacking in the communities surveyed. Consequently, long distances have to be covered to reach functioning facilities and children are not taken for medical attention until all local remedies have failed, and then only if funds are available. Hygiene and sanitation conditions are poor and clean water is rarely available. Poor hygienic conditions were particularly relevant for younger children who are most vulnerable to infections.

Most women carers were uneducated and illiterate, and their knowledge of good caring practices and causes of diarrhoea limited. The statistical association between knowledge and malnutrition was weak, however, suggesting that other resources were needed to apply good knowledge.

The workload of mothers is considerable and includes on average 2 hours collecting water per day (more during the dry season) and 2 hours collecting wood as well as income generation and other domestic activities. Mother's time constraints affect feeding and care in several ways: the women tend to keep breastfed children with them as much as possible during daily tasks, but the older children may be left with an older sibling or female relative for part of the day. Collecting

water for long hours is associated with the number of meals the mother can consume, her nutritional status and her ability to practice exclusive breast-feeding. Mother's chronic illness and nutritional status are associated with child malnutrition. Mother's illness was particularly related to young child malnutrition (OR of 2.4 for underweight when the mother was chronically ill). Maternal care is therefore related to child care and hence nutrition of the child.

Poor food security is a basic cause of malnutrition that is a major constraint to sufficient household food security and hence adequate feeding practice; this was particularly apparent in the harsh conditions of the dry season in the pastoral areas in early 2006 when the whole Somali Region was experiencing severe drought. At this time, in addition to poor food security, more children and mothers were ill. This shows that emergency consideration should always be given to health issues when there is a food crisis.

There were some differences between pastoralists and agro-pastoralists that either improve or worsen the risk of malnutrition. Pastoralists had, less fever & cough and spent less time away from children; factors that would benefit nutrition. On the other hand, they had smaller households, less vaccination coverage, were further from markets and health facilities and started weaning foods late; factors that would worsen malnutrition.

There were some differences between the causes of stunting and wasting. This is important because, although all these potential causes of malnutrition need to be addresses, some issues relate to wasting and hence more transient problems (e.g. fever, mothers illness) and some to stunting and hence more constant problems (e.g. diarrhoea, vaccination, mothers nutrition).

The constraints of food availability, economic resources, time, knowledge, health services, hygienic environment, health and nutrition of the mother all have an impact on the nutritional status of children. There are clearly many factors that limit good nutrition from the 3 main underlying causes: insufficient household food security, inadequate mother and child care, insufficient health services and an unhealthy environment. In order to tackle malnutrition the issues from all the underlying causes identified above will need to be addressed. It is difficult to give priority to any issue when all need to be satisfied to improve malnutrition.

SCUK's recommendations for programmes

1. Due to the high rates of acute malnutrition and seasonal differences, assessment and treatment of acute malnutrition and continuation of nutrition and early warning information systems will be necessary, followed by response.
2. Poverty is linked to the main causes of malnutrition, hence, livelihood initiatives, delivered through livestock and rangeland management, but possibly including alternative income sources, e.g. cash transfers and support to micro-enterprise. Livelihood initiatives should take into consideration women's work load, so any initiative aimed at women should not reduce time for care of children.
3. Child and maternal morbidity were important determinants of malnutrition, therefore support to health services, particularly Maternal and Child Health and health extension, immunization and vitamin A supplementation.

4. Shortage of clean and sufficient water is necessary to achieve improved hygiene as well as for animals, therefore safe water and sanitation programme to improve hygiene, prevent infections and also reduce the time required by women to fetch water
5. Dietary diversity was very poor, therefore, an initiative to improve dietary diversity is necessary. This may be approached through support to markets, small scale home gardening and education linked to improved income generated through livelihoods initiatives.
6. Informal education to improve knowledge on nutrition and health. This should emphasize breast feeding information, how to prepare weaning foods and increase dietary diversity using local foods, nutrition during pregnancy and lactation, hygiene education, HIV prevention. If possible all household members including men, women and older children should be included.
7. The workload of women, women's health and their decision-making in the household are key issues related to malnutrition, therefore, gender initiatives to empower women as decision makers within the communities is necessary through support to women's groups.

There are strong links between these recommendations, for example, a livelihood component would also support women if their workload was reduced, similarly water provision would not only improve hygiene but could be used for livestock, small irrigation and reduce women's time. Health services could improve both child and maternal health, enabling women to provide better care. With nutrition education, the demand for a more diverse diet could increase.

The immediate, underlying and basic causes need to be addressed to prevent chronic malnutrition and to guard against shocks. This will require action at all levels: national, regional, district, kebele and household. This report has focused on the types of programmes that could be implemented by SCUK with partners at the local level, but coordinated and integrated policies that focus on the issues that are particular to pastoralists and agro-pastoralists will be necessary to have lasting benefit.