Malnutrition in a land of plenty

Key findings from research in East Kasai province, the Democratic Republic of Congo

Introduction

Why is it that a fertile and agriculturally productive region that can produce a variety of foods is the very same region where child stunting has reached a staggering rate of 50%? Child hunger and undernutrition is a persistent problem in the Democratic Republic of Congo (DRC), despite its lush hills and valleys. One out of ten children under five suffers from acute malnutrition, and half of all children are chronically malnourished. More than half a million children die each year in the DRC, with undernutrition as a major contributing factor. It ranks eighth in the list of countries with the largest numbers of stunted children. And it is one of just three countries that together account for 40% of all under-five deaths (the other two being India and Nigeria).

Tackling children’s undernutrition is vital to achieving the Millennium Development Goals (MDGs) nationally and globally, particularly the targets for MDG 1 (to eradicate extreme poverty and hunger), MDG 4 (to reduce child mortality) and MDG 5 (to improve maternal health). Improvements in human development indicators in the DRC can contribute significantly towards global achievement of these goals, due to the heavy burden of undernutrition that exists within the DRC’s large and growing population.
Save the Children is committed to tackling the root causes of undernutrition, and reducing the number of unnecessary child deaths around the world. We have been carrying out research in a number of countries to provide a deeper understanding of the rural household economy to inform discussions and decision-making on food security and nutrition, and specifically, to analyse whether families who rely on subsistence agriculture can afford a nutritious diet.9

**Aims of the research**

This study seeks to gain a deeper understanding of people’s livelihoods in the DRC’s East Kasai province, in order to explore the reasons behind such high rates of child undernutrition in what is an agriculturally productive region. This summary presents our key findings, and concludes with recommendations for policy-makers and practitioners about how to tackle children’s undernutrition and improve household food security in the province.

We hope that our research findings will help policy-makers and practitioners concerned with agriculture, food security and nutrition, and social protection programmes, in the DRC and beyond, to base their analyses on the fullest possible knowledge of the practical choices facing families and communities. As an operational agency, Save the Children is taking forward the recommendations in both our advocacy and programming work.

Chronic undernutrition is often an outcome of food insecurity and poverty. Food security implies that nutritious food is available (that is, the family grows their own food or has money to buy food), and is used effectively for children’s growth and development. However, food security and improved diets are not simply a matter of producing a greater volume of food. This case study shows that this is both a simplistic and erroneous conclusion.

**DRC key facts**

- DRC is one of the poorest countries in the world, ranking 176th out of 182 countries on the Human Development Index. Almost six in every ten people (59%) live below the international poverty line ($1.25 a day).3
- The country has been devastated by decades of conflict, which has severely limited its economic and social development, despite an abundance of natural resources (the natural resources are actually one of the main sources of conflict).
- Almost 1.9 million people are still displaced from their homes – around half of them children.4
- The severity of hunger in the DRC is categorised as “extremely alarming” according to the Global Hunger Index. With three-quarters of the population malnourished, the country has the highest proportion of malnourished people worldwide. DRC is also the country with the biggest increase in its GHI percentage between 1990 and 2010.5
- Malnutrition is an underlying cause in nearly half (48%) of all child deaths.6
- Even in the five provinces that are not affected by conflict, including East Kasai, malnutrition still claims the lives of 700 children every day, according to the Ministry of Health.7
- One child in every five dies before their fifth birthday, making a total of more than half a million needless deaths each year.8

Save the Children is taking forward the recommendations in both our advocacy and programming work.
How people make their livelihoods

The province of East Kasai is sparsely populated, with an estimated 7.6 million people. In recent years it has seen significant population growth (around 67% between 1994 and 2005) due to natural increase and the return of the so-called ‘refugees’ of Katanga. Most people depend on subsistence farming for their livelihoods, and agriculture accounts for around 43% of gross domestic product (GDP). In Kabinda, where our study was carried out, maize and cassava are the staples. Most families also rear small animals and produce palm oil, fruits and vegetables, some of which are sold on local markets in nearby towns or in the provincial capital, Mbuji Mayi. For many years, East Kasai benefited from the development of the diamond mining industry around Mbuji Mayi, but this activity has been declining in recent years, further limiting people’s livelihood options.

Methodology

The study took place in November 2009 in the remote and landlocked agricultural area of Kabinda district, in East Kasai province, and more precisely in the 45km around the town of Kabinda using two complementary methodologies (the Household Economy Approach (HEA) and the Cost of the Diet (CoD) method).
After the identification of a relatively homogenous area in terms of livelihoods activities and agro-geological patterns, we selected eight villages and the central market of Kabinda for the field research. The team used participatory methods, including focus group discussions by wealth group (HEA) and interviews with mothers and traders (CoD). About 380 people contributed to provide the information in our analysis. The results were cross-checked to verify consistency of the different information provided.

However, it is important to note that there are some limitations of the methodology and analysis. There was a slight discrepancy between the findings of the HEA and the CoD with regard to the cost of staple food throughout the year (data are collected one year backwards). There is also a margin of error in the CoD due to the complexity of the food and price list (for instance, it was difficult to put a costing on some of the wild foods people consume). There is a need for further research to complete this analysis and gain a more thorough understanding of the affordability of food all year round in the area.

Key findings

1. Widespread availability of food does not necessarily result in a balanced and nutritious diet for children

The study showed that widespread availability of food does not automatically result in a nutritious diet for children. In East Kasai, households produce a wide range of foods (cassava, maize, cowpea, vegetables, palm oil and fruits), which are available to barter or purchase, and they also engage in fishing and small-scale animal husbandry. People also consume a wide variety of wild foods available locally (eg, flying ants, ferns, mushrooms, larva and game). In addition, although trading is limited, significant quantities of salted and dried fish are imported from neighbouring provinces and countries. Yet, when we consider the nutritional value of food items against the nutritional needs of different family members and the actual volume of food that people eat, the nutrient needs of infants aged between 12 and 23 months (specifically for calcium, iron and zinc) are not being fully met from locally available foods for all wealth groups – even the wealthiest households. With regard to calcium, this gap extends to all family members.

2. Children’s low consumption of nutritious foods is not primarily a result of childcare practices or cultural norms

In some countries or regions, socio-cultural factors can affect the dietary choices families make (eg, certain foods may be prohibited). However, our research shows that children’s low consumption of nutritious foods in East Kasai is not adversely affected by prevailing socio-cultural practices for feeding infants and young children. There are no significant taboos affecting food consumption, except a few minor taboos that apply to women during pregnancy (for example, pregnant women do not eat monkey meat). However, these are unlikely to affect a person’s nutritional intake and status. Children have a similar diet to adults, which is quite diverse, and they are often prioritised for more nutritious food (such as eggs) when they are weak or ill, provided that the family can afford these items. In addition, the food items that families typically buy (mainly non-staple items) to complement the food they grow are nutritious and essential to improve their diet.

One of the biggest constraints in terms of ensuring optimal feeding practices for infants and young children is the low level of breastfeeding in the area. Data show that across the country, only 36% of infants are exclusively breastfed till the age of six months,17 which is what the World Health Organization (WHO) recommends for a child’s optimal growth, development and health.
3. Families cannot afford the nutritious diet needed for their children’s healthy growth and development

The major finding of this study is that none of the families surveyed – even those from better-off households – can afford a nutritious diet for themselves and their children. There is a huge gap between the cost of a nutritious diet (using local prices and foods) and household income, particularly for the poorest households. This has major implications for households, particularly their ability to provide their children with the nutrients they need to grow up healthy, do well at school and become economically productive adults.

There is a stark contrast between the cost of a nutritious diet – that is, one that meets an individual’s requirements for energy, fat, protein and micronutrients – and a diet that meets energy requirements alone. **A diet that provides sufficient energy for children is four times cheaper than a diet that provides the required nutrients for optimal growth and development of children.** While families in East Kasai might be able to provide a diet that meets their energy requirements alone, they are less likely to be able to afford a diet that provides the essential nutrients required for children’s healthy growth, including calcium, vitamin B12, iron and zinc (see Figure 1). This is undoubtedly contributing to the high levels of child stunting in the region.

The data enables us to draw the following conclusions:
- The poorest families (categorised in the study as ‘very poor’ and ‘poor’) comprise almost two-thirds of the population of the area. They can barely afford a diet that fulfils their energy requirements, let alone one that includes the essential nutrients critical for children’s healthy growth and development. Their diet is particularly lacking in protein and fat (especially during the ‘lean season’, from October to December).
- Most people, including better-off households, do not have access to essential micronutrients all year round.
- Animal products – essential for a nutritious diet are particularly expensive because they are scarce in the area. In a diet that provides the full nutrients a child needs, almost half of the cost relates to animal products (see Figure 2).
4. Households’ broader economic constraints affect children’s survival and development

Households’ essential needs go beyond food requirements. In East Kasai, five years of conflict have resulted in people’s homes and villages being burnt, their orchards being damaged or destroyed, and their livestock killed or dispersed. Most houses, schools and other community facilities are desperately in need of repair.

Rebuilding livelihoods and replacing physical assets takes time and money. Only the wealthiest families can afford to invest in this reconstruction process (see Figure 3). For most families, the conflict has inflicted a level of damage that is virtually impossible to recover from without external support. For the poorest households, the cash they earn through their crop production and other livelihood activities is not enough to allow them to buy new livestock or rebuild their homes and villages.

The survey also reveals that parents have to make tough choices, such as whether to send their children to school or provide them with more nutritious foods. Other studies have highlighted the fact that stunting leads to poorer performance at school\(^9\) and absenteeism, so even if parents in the poorest families regard education as very important and make sacrifices to send their children to school, the likelihood of their children reaching secondary school is low.

Families from all wealth groups spend little on healthcare, often because health centres are remote, fees are expensive and the quality of care is basic and patchy. This has significant implications for children’s nutrition because children who do not receive effective treatment for malaria, diarrhoea and other common diseases are more likely to become malnourished.

All wealth groups rely on subsistence farming for the majority of their food needs except for the poorest families who live close to the main town (Kabinda) and rely less on growing their own food, and more on earning money to buy food. Figure 4 shows production of cassava, maize and palm oil covers at least 80% of households’ calorie requirements.

A food security assessment or other similar analysis that focuses simply on access to food may judge all
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Figure 3: Proportion of household expenditures of the different wealth groups

Figure 4: Sources of food
of these families to be food secure and not in need of assistance. However, as illustrated above (see section 3) current food intake – particularly for poor and very poor families, who, as we have seen, comprise about two-thirds of the total population – is not sufficiently nutritious to allow them to maintain a healthy and active life, which is the commonly used definition of food security.

5. Poverty and deprivation are widespread, but there is also significant inequality within communities

As stated earlier, in this remote and landlocked area, livelihoods options beyond agriculture are scarce. However, politicians in the DRC often regard returning to cultivate the land as a solution to the economic difficulties facing different areas of the country, as evidenced by the repatriation programme for Katanga ‘refugees’ in the early 1990s, and the response to the recent decline of the diamond-mining sector in Mbuji Mayi.

But there is a wide variation in what the sector can offer, depending on the resources available to households engaged in agriculture. Our findings reveal the wide gap between the income levels of different wealth groups, even though all groups rely heavily on subsistence farming (see Figure 5).

As Figure 5 shows, better-off households generate almost ten times more income than the very poor households, and they generate eight times the amount from agricultural activities alone than the poorest households do. This is all the more surprising given that access to land does not seem to be a big constraint. Key determining factors include: a household’s capacity to cultivate land (the labour available); capacity to invest and secure production in areas with high-value returns (such as palm trees, animals, pulses, etc); and capacity to invest in agricultural inputs.

Social factors also affect underlying inequalities, but these were difficult to define during the assessment.

**Figure 5: Sources of income**

<table>
<thead>
<tr>
<th>Wealth group</th>
<th>'000 Congolese francs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very poor, close to town</td>
<td>200</td>
</tr>
<tr>
<td>Very poor, far from town</td>
<td>200</td>
</tr>
<tr>
<td>Poor</td>
<td>400</td>
</tr>
<tr>
<td>Middle income</td>
<td>600</td>
</tr>
<tr>
<td>Better off</td>
<td>1,600</td>
</tr>
</tbody>
</table>

Key
- Agricultural production
- Animal production
- Sale of wild products
- Casual agricultural labour
- Transport activities
- Trading
- Other
and would require further investigation. To give an example, some households benefited from decisions by church committees to provide them with free or cheap casual workers to cultivate their land, while others did not benefit from this so-called community ‘solidarity’.

6. There is a greater need for policies and infrastructure to support the development of agriculture and other sectors

Despite its large potential for agricultural production, the district suffers from a critical lack of effective policies and investments in rural development and poverty reduction. Communities are broadly self-reliant, with very limited infrastructure, or alternative sources of social and economic support.

What needs to be done?

Some of the challenges revealed by our research findings, as outlined above, are structural and are underpinned by the broader challenges facing the DRC. However, key changes to policy and programmes, made in consultation with the population of East Kasai, could make a big difference in reducing poverty and helping to tackle the staggering level of child undernutrition. Efforts to tackle stunting, as the key to children’s physical and mental development, would be a very positive first step that can create models for use in other areas of the country.

We recommend a package of interventions, led and supported by adequate institutional arrangements enhancing actions across ministries and sectors. This package of interventions should address the complex reasons for household food insecurity, and tackle the causes of child undernutrition in a systematic way. In East Kasai, such a package should include the following elements:

1. Providing zinc and other supplements to address critical deficiencies in children’s diets

Children’s diets (particularly children from the poorest families) lack critical micronutrients, especially iron and zinc (see below), and vitamin B12 and calcium. Vulnerable groups such as women and children need micronutrient supplements or fortified products to ensure they have sufficient iron and zinc in their diet. A multiple micronutrient intervention like Sprinkles might also be considered. Any such products must be appropriate and affordable, and must not undermine local food production systems.

• Iron: Care needs to be taken when providing iron supplements to vulnerable groups, as they have actually been associated with a rise in child mortality in areas where malaria is endemic. Families who receive iron supplements must also therefore be given access to insecticide-treated nets, malaria treatment and deworming. In addition, parasites (worms) are a significant problem in this area of the country, and can aggravate iron-deficiency anaemia among children and pregnant women.

• Zinc: There is thought to be a strong association between zinc deficiency and risk of stunting. Given the high prevalence of stunting in the province and the findings from our study, we recommend that zinc supplements are introduced for vulnerable groups of women and, more especially, children. According to the 2007 Demographic and Health Survey, there is a high prevalence of diarrhoea in East Kasai. Improving children’s zinc intake, combined with providing clean water, could help to reduce this prevalence. However, it is also important that people have access to oral rehydration therapy for the treatment of diarrhoea.
2. Investing in nutrient-rich agricultural products, and supporting livestock rearing

There is a critical need for greater investment to support agriculture and livestock production in the area. In particular, policies should **promote the local production of food with improved nutritional value**, especially among the poorest groups. This should lead to a progressive improvement in people’s diet in a sustainable manner, not least because the country has plentiful land that is cultivable and productive. There is a need for greater support for intensification of agricultural activities through the use of fertilisers, improved seed varieties and optimum agricultural practices (with regard to crop rotation, preparing and weeding land, etc). For example, optimising yields would increase the level of food production, which would counter market shortages and hence contribute to keeping prices more stable. Surpluses could also be sold to generate more cash income.

Animal production including fishing and small animal rearing could improve diets if households received appropriate animal husbandry support and had access to productive capital and inputs, especially veterinary services. The Ministry of Rural Development, which has skilled staff would require new financial resources to provide this level of support and target it to the most vulnerable households.

3. Boosting households’ purchasing power to enable them to meet basic needs and invest in rebuilding livelihoods

3.1 Using social protection measures and policies alongside nutrition education

Increasing the purchasing power of very poor and poor families is fundamental to any response that aims to reduce child hunger and malnutrition. There are only two ways to increase household purchasing power: reduce key areas of expenditure (eg, on food, health and education) or increase incomes, or both. We propose four key policy changes to achieve this goal for households in East Kasai:

- lump-sum payments for families to invest in rebuilding their livelihoods
- predictable social transfers to support pregnant women and mothers feeding young children
- supporting households with education-related costs (eg, paying for uniforms, books, etc).
- removing user fees for healthcare so that it is free at the point of access.

More broadly, there is a need for a comprehensive package of development policies and social protection measures that are pro-poor and child-focused, in order to achieve a significant improvement in child development indicators in the province.

Social protection measures and other interventions can have more impact on dietary in-take by including education on nutrition as part of the intervention. Behavioural change to improve hygiene, sanitation, and infant and young child feeding can be reinforced through messaging while the intervention provides the financial means for different and informed choices by households.

3.2 Policies should favour increased marketing of locally produced food

As well as intensifying and diversifying agricultural production, policies should support increased marketing of locally produced foods. Crop surpluses that are sold need effective demand to generate income for the vendor. More detailed analysis of the value chain and marketing opportunities for different crops is required. There is also a need for investment in transport infrastructure (roads and other services) to improve trade opportunities and strengthen demand for certain goods within the province. This can help to reduce the cost of
imported food (mainly fish and cereals) as well as stimulate the sale of surpluses (oil, maize, pulses, etc) to markets in urban areas.

4. Supporting exclusive breastfeeding

There needs to be a considerable increase in the rate of exclusive breastfeeding for an effective reduction in levels of undernutrition among infants and young children. An assessment of constraints to optimal breastfeeding practices should be carried out to design measures that are specific to each context, in partnership with the Ministry of Health. All other policies and programmes in the region that may involve the participation of women (such as development of extra livelihoods activities, cash or food-for-work schemes, etc) should work to support this goal.

5. Treating children with severe acute malnutrition

Community-based management of severe acute malnutrition in East Kasai and across the rest of the country must become the norm. Efforts should take into consideration learning from existing programmes that treat severe acute malnutrition. Health services need more resources so that they can quickly identify and treat children with acute malnutrition. Mobile treatment clinics would be an effective way of reaching remote villages. There is a need for further assessment of the feasibility of this intervention in specific areas to design the most effective activities.

Concluding remarks

This study has unearthed key constraints affecting the in-take of nutritious foods and broader causes of poverty that together culminate in high levels of child undernutrition in East Kasai Province. A broad approach is necessary to tackle child undernutrition however we recognise the package of measures recommended is ideal and may not be entirely feasible in the immediate term.

Two options could be considered to start addressing the issues identified: some components of the package such as micronutrients supplementation, a pro-poor nutrient rich agriculture, and a more effective treatment of severe acute malnutrition may be more likely to be implemented in a first phase, particularly due to the growing interest on these topics in the country. Alternatively another option would be to undertake rigorous operational programme research that includes the various interventions but carefully tests their individual and integrated impact on child undernutrition in order to determine the best sequence of interventions in a resource poor setting that can be built upon and improved over time. This paper and the research findings should lead to a dialogue between the government, civil society and other partners in order to explore those options.

Finally it would be naïve not to expect these causes of undernutrition to be key factors that are felt more widely than East Kasai Province however more research is necessary to understand the variation in causes of undernutrition that might exist and to improve policies and programmes accordingly.
République démocratique du Congo, 2005.

Rural Niger and nutrition are: J Holt which is typically caused by inadequate diets and/or acute infection.

12 These are actually internally displaced people who were expelled from Katanga province, notably to East Kasai, in the early 1990s.

1 Stunting is the physical manifestation of chronic undernutrition. It contributes towards child mortality and impairs growth, resulting in a child being shorter than the average height for his or her age. The physical and mental impairments associated with stunting significantly limit the individual’s life chances. It therefore undermines human and economic development.

2 Acute malnutrition is the result of a rapid loss in body weight, which is typically caused by inadequate diets and/or acute infection.


7 UNICEF Hunger Index, 2003


12 These are actually internally displaced people who were expelled from Katanga province, notably to East Kasai, in the early 1990s.


14 The DRC has substantial reserves of copper, cobalt, diamonds, gold, silver, zinc, columbite-tantalum (coltan), bauxite, iron ore and coal.

15 HEA is a framework for systematically analysing how people obtain food, non-food goods and services, and how they might respond to changes in their external environment, like a drought or a rise in food prices. It describes the economy of a defined population of households, and allows comparison between wealth groups. For more information, see: FEG Consulting and Save the Children The Practitioners’ Guide to the Household Economy Approach, FEG Consulting, Save the Children and the Regional Hunger and Vulnerability Programme, 2008 www.savethechildren.org.uk/en/54_4200.htm.

16 The ‘Cost of the Diet’ is a method developed by Save the Children UK to calculate the minimum amount of money a family will have to spend to meet their energy, protein, fat and micronutrient requirements, using locally available foods. It was developed primarily to aid understanding of the gap between household income and expenditure in settings where social protection is likely to be the solution to improving childhood malnutrition. The Cost of the Diet: A practitioner’s guide is available on request at: www.savethechildren.org.uk/en/54_9288.htm


18 The calculation of energy requirement is based on the minimum average energy requirement of 2,100 kcals per person per day.

19 “Meat, poultry, fish or eggs should be eaten daily, or as often as possible. Vegetarian diets cannot meet nutrient needs at this age unless nutrient supplements or fortified products are used.” Pan American Health Organization/WHO, 2003, ‘Guiding principles for complementary feeding of the breastfed child’, www.paho.org/English/AD/FCI/DU/Guiding_Principles_CF.pdf

20 Save the Children UK, Hungry for Change: An eight-step, costed plan of action to tackle global child hunger, Save the Children, 2009

21 “Severe acute malnutrition is defined by a very low weight for height (below –3z scores of the median WHO growth standards), by visible severe wasting, or by the presence of nutritional oedema.” See: www.who.int/nutrition/topics/malnutrition/en/index.html (accessed 15 August 2010)

We’re the world’s independent children’s rights organisation. We’re outraged that millions of children are still denied proper healthcare, food, education and protection and we’re determined to change that.