What is MSF calling for?

- Treatment of severe acute malnutrition with therapeutic RUFs must be scaled up. Countries must develop protocols that support community-based management of severe acute malnutrition. Countries must adopt and implement the new WHO Growth Standards.
- Funding schemes must be developed to support Ministries of Health to integrate treatment of severe acute malnutrition into their protocols and to purchase therapeutic RUFs at a price that will not break budgets.
- Donors need to review the quality of food aid addressed towards rapidly growing young children to ensure that distributions include foods that meet their specific nutritional needs.
- Academic and operational research must increase in order to drive the development of new complementary and supplementary foods and programme strategies aimed at meeting nutritional needs of young children, women of reproductive age and people with tuberculosis and HIV/AIDS.

CAMPAIGN FOR ACCESS TO ESSENTIAL MEDICINES

MEDECINS SANS FRONTIERES

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To find out the latest about MSF's Malnutrition campaign, and other Access Campaign activities, please visit our website: **www.msfaccess.org**

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STARVED FOR ATTENTION

WAKE UP TO THE CRISIS OF MALNUTRITION

Without access to a wide range of essential nutrients, **9 children will continue to die every minute** of causes related to malnutrition. MSF calls for food aid to change and for a nutrient rich diet to be made available to children to save millions of young lives.

GIVE CHILDREN
WHAT THEY NEED TO GROW

MEDECINS SANS FRONTIERES

What is the malnutrition crisis?

Malnutrition is the underlying cause of death for between three and five million children under five every year. Images of starving children in emergency settings are part of the public conscious, but the reality is that the vast majority of children suffering from malnutrition do so in silence, far away from the public eye.

Insufficient diets are a fact of every day life for hundreds of millions of children. The signs of malnutrition are so common - a short child or a child who has lost some weight - that we don't see these children as sick or suffering. But they are. When a child's diet fails to give her/him all the nutrients the body needs to maintain normal functioning, not only does growth falter, but susceptibility to common diseases increases. This is why a common cold or bout of diarrhea can kill a malnourished child.

Malnutrition is a medical emergency. MSF teams see the devastating impact of childhood malnutrition every day, having treated more than 150,000 children per year in 2006 and 2007. Malnutrition weakens resistance and increases the risk of dying from pneumonia, diarrhoea, malaria, measles or AIDS - five diseases that are responsible for half of the nearly ten million deaths in children under five every year[1]. Persistent high rates of child mortality in sub-Saharan Africa and South Asia will not be reduced if malnutrition is not addressed more aggressively.

Childhood malnutrition receives insufficient international attention. Despite its overwhelming contribution to child mortality and its impact on long-term health, the treatment and prevention of malnutrition has not been a high enough priority in international and national public health planning and programming.

Current approaches to address malnutrition have serious limitations. In places where highly-nutritious foods are not available, or where people do not have the money to buy such foods, behaviour-change approaches to malnutrition that focus on education about proper food choices, hand-washing and breastfeeding are not enough to address the problem.

> ***"Eating millet porridge every day is the equivalent of living off bread and water. With luck, toddlers here might have milk once or twice a week. Young children are so susceptible to malnutrition because what they eat lacks essential vitamins and minerals to help them grow, remain strong and fight off infections."***
>
> Dr. Susan Shepherd, MSF Medical Coordinator for the nutritional programme in Maradi, Niger, 2007.

Such strategies are insufficient because mothers in the Sahel, the Horn of Africa or Asia don't just need advice about how to feed their children. They need access to energy-dense, nutrient-rich foods, including animal-source foods to provide the 40 essential nutrients a young child needs to grow and be healthy. Exclusive breastfeeding meets nutritional needs until six months of age, and beyond that, young children need the addition of foods that include dairy, eggs, meat or fish.

Addressing the long-term challenges of poverty and food security is important - but addressing the needs of malnourished children today requires specific and targeted strategies to ensure children under two have access to the minimum nutrition they require. Existing interventions that fail to ensure the nutritional needs of children under two are met must be overhauled and new strategies that target these children need to be devised.

UN recommendations call for children with severe acute malnutrition to receive treatment through community-based nutrition programmes, without being admitted to a health facility or therapeutic feeding center, unless the child has a medical complication. These recommendations must not be allowed to remain a dead letter.

Simple, highly-nutritious ready-to-use foods (RUFs), specifically designed to address the nutritional needs of young children, have greatly expanded the potential for effective nutritional interventions. Therapeutic treatment programmes with ready-to-use foods (RUFs) allow the vast majority of seriously malnourished children to receive treatment at home, under the supervision of their mother or other caregiver, instead of in hospital. MSF and others have documented the successes that can be achieved through use of RUFs - high cure rates with high coverage, as well as low mortality and default rates.

However, according to MSF estimates, only 3% of the 20 million children suffering from severe acute malnutrition each year receive the treatment they need[2].

RUFs also hold great promise for reaching children earlier, before their growth starts to falter, or to help them catch up after illness. Current programmes to prevent and address less-severe forms of malnutrition are inadequate, because they don't provide the right foods. Between six and 24 months of age, young children need energy-dense, nutrient-rich foods to support them during a period of rapid growth and development. This concentration and diversity of nutrients requires a diverse diet including animal-source foods, which are expensive and often not accessible, making children particularly vulnerable to food insecurity.

However, international food aid continues to supply fortified blended flours that don't contain animal-source foods. The fact that milk was removed from these flours targeted at young children for economic reasons in the late 1980s indicates a deadly double standard in which nutritional science is ignored. Donors and UN agencies must revisit the food that is given as a part of food aid programmes.

New strategies of delivering essential nutrients must be developed, and scaled up. RUFs should be placed in the larger context of innovating strategies that can help families give the youngest children the nutrient-rich diets they need. Other strategies, such as providing income support to households should also be pursued.

"Starved for Attention", MSF's malnutrition campaign is advocating for specific and targeted strategies to ensure children under two in malnutrition hotspots have access to the minimum nutrition they require. The campaign is calling on donor governments to change current food aid programmes to meet the nutritional needs of young children and develop approaches to providing food supplements. MSF is also highlighting the need for increased research and development into a range of supplemental foods adapted to young children's needs.

1 UNICEF Statistics: http://childinfo.org/areas/childmortality/

2 MSF's estimate based on RUFs needed to treat all cases of severe acute malnutrition (258,000 tons for 20 million children at an average of 12.9 kilos per child) and total estimated consumption in 2007 of 8,500 tons.

Why do children become malnourished?

Children become malnourished when they do not receive the adequate nutrients their bodies require to resist infection and maintain growth. When nutritional deficiencies become too significant, a child will begin to 'waste' - to consume his/her own tissues to obtain needed nutrients. Wasting is a sign of acute malnutrition.

In some regions of the world, such as in Africa's Sahel, wasting is particularly frequent among children during the 'hunger gap' period, between harvests.

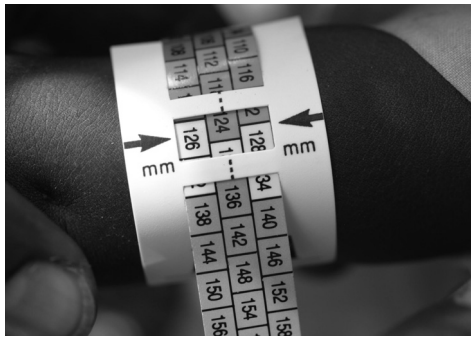
The World Health Organization (WHO) estimates that there are 20 million young children with severe acute malnutrition at any given point in time[3].

What are the nutritional needs of a growing child?

Breast milk is the only food that a child younger than six months of age needs. After six months, children require more energy and essential nutrients than breast milk alone can provide. This includes proteins and essential fats, as well as about 20 different vitamins and minerals such as calcium, potassium, zinc and iron.

A World Health Organization (WHO) multi-country study leading to the development of the WHO Child Growth Standards (2006) has shown that all young children across

Photo © Ton Koene



The nutritional status of a child is checked by using the MUAC (Middle-Upper-Arm Circumference) bracelet at an MSF therapeutic feeding centre in Biu Hospital, Borno Dtate, Northern Nigeria.

all regions can attain a similar standard of height and weight and development with optimal nutrition, good healthcare and a healthy environment.[4] Therefore the nutritional needs of rapidly-growing children everywhere in the world are essentially the same.

How are these needs met in developed countries?

In developed countries, young children eat a variety of nutrient-dense foods such as meat, dairy, fish and eggs, as well as fruits and vegetables to meet their nutritional requirements, as they continue to breastfeed. Even if infants don't eat meat, infant foods and cereals are fortified with vitamins and minerals, especially iron and zinc, in order to meet their nutritional needs.[5]

Milk is a good source of all essential nutrients (except iron) and is an important part of most children's diets after one year of age.

In resource-limited settings, diets consist primarily of breast milk in addition to plant-source foods, with little added fat. These diets lack iron, zinc and calcium in particular and nutrients are not as easily absorbed from plant foods as they are from meats, fish, poultry, eggs or dairy. However, these animal-source foods are usually prohibitively expensive or simply not available.

What are the limitations of fortified blended foods?

Fortified blended foods, such as corn soy blend (CSB) have long been used in food assistance programmes to prevent nutrient deficiencies. The composition has remained largely unchanged despite better knowledge about how to meet the nutritional needs of young children.[6]

Animal (dairy) protein is best suited to maximizing growth of young children. The composition of CSB, being an exclusively plant-based food without any dairy component, is not ideal to facilitate growth of children during the first few years of life.

CSB also contains a number of elements that limit the body's ability to absorb the nutrients that are present. Additionally, preparing CSB requires clean water, which is often not available in resource-limited settings. CSB also needs time for cooking and bears the risk of being over-diluted.

Why do ready-to-use foods work?

Experience by different organizations, including MSF, has shown that a very successful way to deliver essential nutrients to malnourished children is with ready-to-use foods (RUFs). This is an effective treatment because each packet delivers 500 calories in the form of a dense nutrient spread that contains fortified milk powder and delivers the 40 essential nutrients that a malnourished child needs to reverse nutrient deficiencies and gain weight.

Further, RUFs are simple to use in resource-limited settings as an efficient and safe way to provide milk to young children: they contain no water and are thus resistant to bacterial contamination, they come in individually-wrapped airtight foil packets and have a long shelf life; they don't require preparation and are easy to transport and use in hot climates.

Most critically, the vast majority of malnourished children can take this treatment at home, under the supervision of their mother or caregiver, instead of in hospital. This allows programmes to reach many more children, while at the same time minimising the risk of contracting an infection in hospital.[7]

Malnutrition must be addressed before it reaches a life-threatening stage. The quality of complementary foods provided to children after six months of age in resource-limited settings requires reexamining. If any of the 40 essential nutrients are deficient in a young child's diet, the body's defences are weakened and the likelihood of falling seriously ill from a minor infection increases.

3 Community-Based Management of Severe Acute Malnutrition. A Joint Statement by the World Health Organization, the World Food Programme, the United Nations Standing Committee on Nutrition and the United Nations Children's Fund. May 2007. http://www.who.int/child-adolescent-health/New_Publications/CHILD_HEALTH/Severe_Acute_Malnutrition_en.pdf

4 http://www.who.int/childgrowth/standards/en/

5 Guiding Principles for Complementary Feeding of the Breastfed Child. PAHO/WHO 2003 http://www.paho.org/English/AD/FCH/NU/Guiding_Principles_CF.htm

6 Corn Soya Blend – Ten Minutes to Learn About... Series, Vol 1 No 5, World Food Programme, October 2007, available from nutrition@wfp.org.

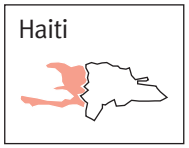
7 Community-Based Management of Severe Acute Malnutrition. A Joint Statement.Op.Cit.

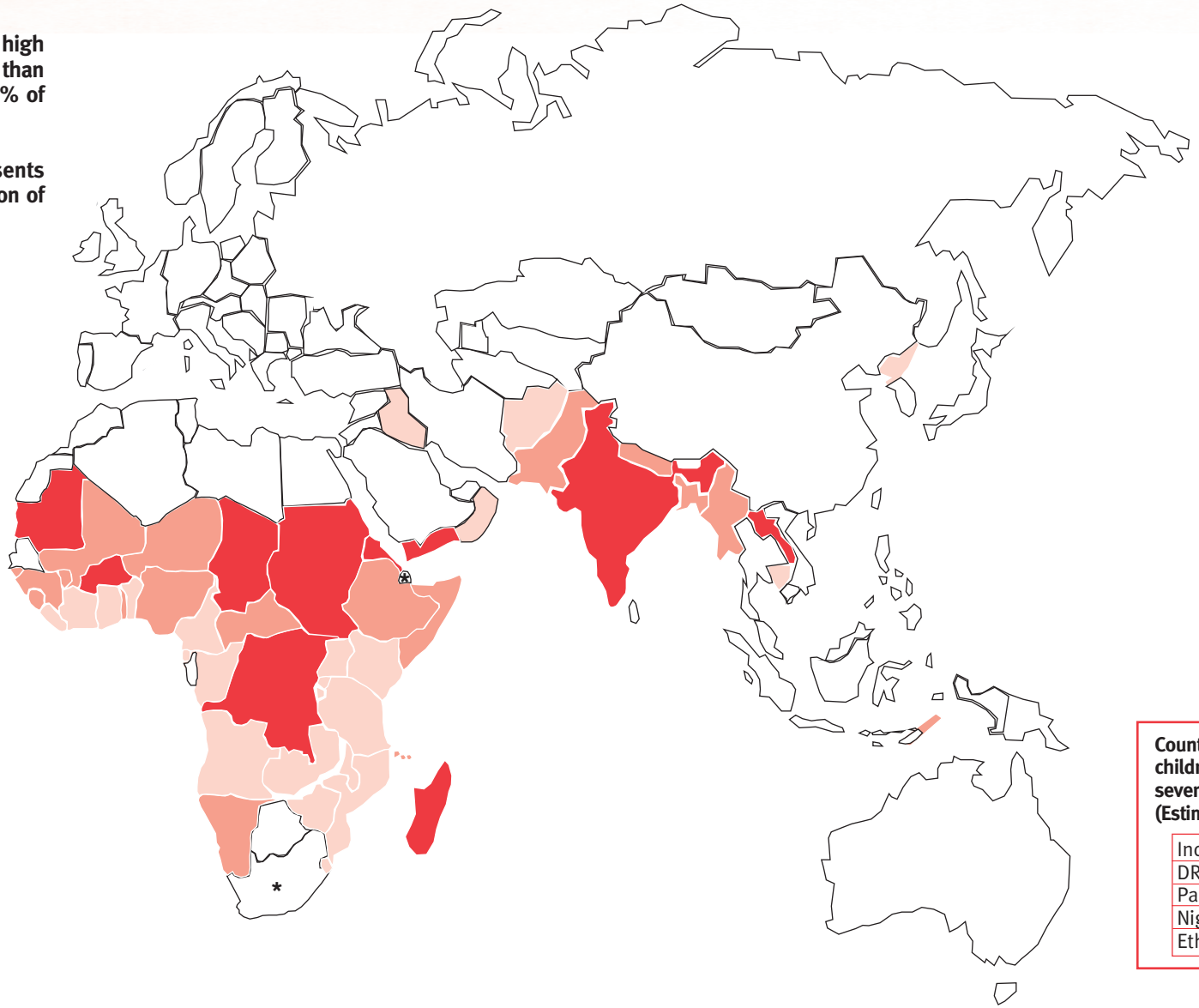
Malnutrition Hotspots

The 50 shaded countries have a high under-five mortality rate (greater than 50 per 1,000) and greater than 30% of stunting[8] in under-fives.

The following legend represents wasting[9] in the under-five population of these countries.

- **Countries with more than 15% acute malnutrition[10]**
- **Countries with more than 10% acute malnutrition[11]**
- **Countries with more than 4% acute malnutrition[12]**
- *** No data**





Countries with the most children under-five with severe acute malnutrition. (Estimates in millions)

India	8.0
DRC	1.3
Pakistan	1.2
Nigeria	1.1
Ethiopia	0.6

8 Stunting – Growth retardation, indicated by low height for age (height for age <-2 Z according to WHO 2005 Growth Standards).
9 Wasting – Emaciation or thinness as measured by low weight for one's height (weight for height <-2 Z according to WHO 2005 Growth Standards)
10 Burkina Faso, Chad, Democratic Republic of Congo, Eritrea, India, Lao People's Democratic Republic, Madagascar, Mauritania, Sudan, Yemen.
11 Bangladesh, Central Africa Republic, Comoros, Ethiopia, Guinea, Guinea Bissau, Haiti, Mali, Myanmar, Namibia, Nepal, Niger, Nigeria, Pakistan, Sierra Leone, Somalia, Timor-Leste, Togo.

12 Afghanistan, Angola, Benin, Burundi, Cambodia, Cameroon, Republic of Congo, Côte d'Ivoire, Equatorial Guinea, Ghana, Iraq, Kenya, Democratic People's Republic of Korea, Liberia, Malawi, Mozambique, Rwanda, Tanzania, Uganda, Zambia, Zimbabwe.

Sources for map: Population Reference Bueau 2007 World Population Data. WHO Analyses of national nutritional surveys done 2001-2006. UNICEF – The State of the World's Children 2008

MSF's experience in Maradi, Niger

Scaling up treatment of severe acute malnutrition since 2001

MSF has been working intermittently in Niger since 1984, and in 2005, a year of exceptional food insecurity in Niger, MSF treated over 60,000 severely malnourished children using therapeutic ready-to-use foods (RUFs). 38,000 severely malnourished children were treated in Maradi alone, with a cure rate above 90%.[13]

Photo © Michael Goldfarb

Mothers and their children line up early in the morning at a MSF distribution point in the Guidan Roumdji district in August 2007. Mothers receive four containers per month of a ready-to-use food called Plumpy'Doz, and add three tablespoons every day to their child's regular diet, enriching it with a complete daily dose of essential nutrients and 250 calories.

Expanding outpatient care to moderately malnourished children (2006)

MSF extended the use of therapeutic RUFs through the outpatient strategy to moderately malnourished children in two different districts of Maradi region. Nearly 65,000 children were treated, 92.5% of whom suffered from moderate malnutrition and 7.5% from severe malnutrition. Recovery rates reached 95.5% amongst the moderately malnourished and 81.3% amongst the severely malnourished.[14] The seasonal peak of admissions of severe cases observed every year since 2001 when the programme opened in Maradi, did not occur.

This experience suggests that treatment with therapeutic RUFs can prevent the development of severe malnutrition in a large cohort of moderately malnourished children.

> ***I prefer to come here once a week rather than stay in a treatment centre, because I have to take care of the fields and my other children – I have three other children at home.***
>
> Mother, Maradi, Niger

Photo © Michael Goldfarb

An MSF aid worker measures the circumference of a child's mid-upper arm to determine whether he is malnourished. During the hunger gap, the danger of malnutrition is higher; ready-to-use supplements provide enough nutrients to remove that risk.

13 Field Exchange. Emergency Nutrition Network. Scaling up the treatment of acute childhood malnutrition in Niger. Issue 28, July 2006. www.ennonline.net

14 Field Exchange. Emergency Nutrition Network. Management of moderate acute malnutrition with RUTF in Niger. Issue 31, September 2007. www.ennonline.net

Recorded weight gain (5.28 g/kg/day amongst the moderately malnourished) is markedly higher than that generally obtained in "classic" food supplementation programmes using blended flour (generally below 3 g/kg/day).[10] Similarly, defaulter rates were very low compared to classic programmes, with a 3.4% defaulter rate among the moderately malnourished and 10.3% amongst the severely malnourished.

> ***I have no-one to look after my other kids, my oldest girl is only 10 years old, I have no-one to help me. Without this place I wouldn't have sought help, even if my child was very sick, because I can't leave my other children alone for weeks.***
>
> Mother, Maradi, Niger

Reaching more children with a two-tiered approach (2007)

MSF began using the WHO 2006 growth standards[11] to define admission criteria for treatment in 2007. This standard identifies more, and younger, acutely malnourished children. WHO standards allow us to better reach those malnourished children most at risk of death. Children suffering from severe acute malnutrition are treated with therapeutic RUFs in outpatient feeding centres. Only children with complicating conditions still need to be hospitalised.

The second component of MSF's new approach involves distribution of supplemental RUFs, which complements regular meals and compensates for deficiencies in their regular diet. In 2007, MSF distributed supplemental RUFs to all 62,000 children from six months to three years of age in one district in Maradi on a monthly basis during the seasonal hunger gap.

Photo © Michael Goldfarb

This mother displays her ration coupon for the supplementary product while balancing a one-month supply on her head. She will add three table-spoons of the paste to the nutrient-poor millet the child normally consumes in order to stave off malnutrition.

15 A Retrospective Study of Emergency Supplementary Feeding Programmes. Dr. Carlos Navarro-Colarado. June 2007. Emergency Nutrition Network and Save the Children UK. Available at http://www.ennonline.net/research

16 For details on the new standards see http://www.who.int/childgrowth/en/

Photo © Michael Goldfarb

Mothers and their children line up early in the morning at a MSF distribution point in the Guidan Roumdji district. MSF distributed monthly supplies of a nutient-rich ready-to-use food to mothers throughout the Guidan Roumdji.

MSF's experience in Dinsor, Somalia

MSF has been operating a treatment programme for acute malnutrition in Dinsor, Somalia since 2002. The programme began with a classical approach of hospitalising children during treatment, regardless of their medical status. However, due to instability in the region, only those living in the town itself sought treatment. Many people in surrounding areas would not risk the journey to the hospital, resulting in a number of children dying at home, from a lack of care better adapted to the situation.

In 2006, drought resulted in a nutritional crisis. The hospital experienced a surge of patients. People infected with tuberculosis were placed next to patients suffering from malnutrition. An ambulatory strategy was therefore adopted, with the creation of four ambulatory centres in areas where malnutrition was detected. Children in Dinsor who did not have medical complications were treated at home with therapeutic RUFs under supervision of their mother/caregiver

What can be done to ensure effective treatment is accessible?

Scaling Up

If the May 2007 UN recommendation of treating severe acute malnutrition with therapeutic RUFs is to be realised, there is a need for 258,000 tons of product per year.[17] Production capacity in 2007 was less than 19,000 tons with orders placed for less than 8,000 tons.

Programs to treat severe acute malnutrition must increase in number, but as this happens, there will be an urgent need to increase RUF production capacity. The enabling factor will be international funding.

Increasing Producers

Currently one brand of therapeutic RUFs, known as Plumpy'nut® is manufactured in France by Nutriset and by its four franchises in Malawi, Ethiopia, Niger and the Dominican Republic.

Other international companies have stated their interest to begin production, however their initial investment will depend on receiving large secured orders. The not-for-profit company Valid Nutrition is active in developing local production capacities in a number of countries in Africa and Asia, each one based upon recipes that use locally available ingredients. To date, local production facilities exist in Bangladesh, Ethiopia, Malawi and Zambia.

Reducing the Price

At a current cost just below three euros per kilo, the total cost of producing enough RUFs to treat the 20 million children that WHO estimates are severely acutely malnourished would amount to 750 million euros.

Currently, the cost to treat one child is nearly 39 euros. The cost of existing products has increased because of the rising price of milk. The price of milk powder increased dramatically in 2007, from 2,000 euros to more than 4,000 euros per metric ton.

Despite the rising cost of raw materials, there are ways to bring down the price. These include the scaling up of production, the development of alternative packaging, the creation of a product based on alternative raw ingredients and the possibility of tax exemptions. Lowering the cost will have an impact on demand for therapeutic RUFs.

The development of high value nutritional products to complement the diets of vulnerable children between the ages of six months and two years must also become a priority. What is key is for the product to contain the essential nutrients that are required by rapidly-growing children. There is also a whole range of possibilities for the development of products to accompany the medical treatment of pathologies such as HIV and tuberculosis.

17 MSF's estimate based on RUFs needed to treat all cases of Severe Acute Malnutrition (258,000 tons for 20 million children at an average of 12.9 kilos per child).