PRACTICAL TOOLKIT FOR PEOPLE IN NEED'S

INTEGRATED PROGRAMMING FOR IMPROVED NUTRITION

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IPIN

PEOPLE IN NEED CZECH REPUBLIC

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LET'S LEARN & SHARE TOGETHER!

To achieve maximum impact, this toolkit as well as the entire IPIN approach needs to continue evolving based on the latest field-based experience as well as useful research findings. Help us to achieve this by sharing useful experience & know-how – e-mail PIN's Senior Advisor for Nutrition at ipin@peopleinneed.cz and share through PIN's Yammer.

KEY MESSAGES

- **DID YOU KNOW?** **Undernutrition underlies 3.1 million child deaths annually, hampers the healthy development of people's bodies and minds, causes children to perform worse at school and reduces their earnings in adulthood. All unnecessarily, due to causes which are totally preventable.**

- **THE FIRST 1,000 DAYS CHANGE EVERYTHING:** **Nutrition which children receive during the period from conception to their second birthday - the first 1,000 days - influences their entire lives. Even if their diet and health improves later in life, the damage done during this period is largely irreversible.**

- **ALL SECTORS IMPACT ON NUTRITION:** **Poor sanitation, limited food diversity, inadequate health services or low political commitment all contribute to undernutrition. Multi-sectoral causes require multi-sectoral responses which concerns all of us, irrespective of our specialization.**

- **PEOPLE IN NEED (PIN) RESPONDS TO UNDERNUTRITION:** **To make its work on reducing undernutrition more effective and easier, PIN has consolidated its existing experience, the best practices of other agencies and latest research findings and developed its own approach - Integrated Programming for Improved Nutrition (IPIN). IPIN recognizes that tackling undernutrition requires a multi-sectoral response and therefore encourages all of PIN's missions and their partner organizations to implement well-designed, integrated programs preventing and treating undernutrition. In doing so, PIN supports the main policies and initiatives, such as Scaling Up Nutrition (SUN).**

- **SUPPORT FOR YOUR PROGRAMMING IS READY:**

This toolkit, recommended e-learning courses, dozens of carefully selected guidelines, experience from PIN missions, support of PIN's Senior Advisors and much more is available to help you to integrate IPIN into your programming and effectively contribute to reducing undernutrition. Just use it and move forward!

CONTENT

LIST OF ABBREVIATIONS

BCC	Behavioural Change Communication
BMI	Body Mass Index
CHW	Community Health Worker
CMAM	Community-based Management of Acute Malnutrition
CTC	Community-based Therapeutic Care
CZDA	Czech Development Agency
DFID	UK Department for International Development
EC	European Commission
ECHO	European Commission's Humanitarian Aid and Civil Protection Department
ELO	PIN's internal data management system
ENA	Emergency Nutrition Assessment
FANTA	Food and Nutrition Technical Assistance
FAO	Food and Agriculture Organisation
GMP	Growth Monitoring and Promotion
HC	Health Centre
HDDS	Household Dietary Diversity Score
HFA	Height for Age
IBFAN	International Baby Food Action Network
IDD	Iodine Deficiency Disorders
IDDS	Individual Dietary Diversity Score
IEC	Information, Education and Communication
IFPRI	International Food Policy Research Institute
IPIN	Integrated Programming for Improved Nutrition
IYCF	Infant and Young Child Feeding
KAP	Knowledge, Attitude and Practices
MAM	Moderate Acute Malnutrition
MDG	Millennium Development Goal
MoH	Ministry of Health
MUAC	Mid-Upper Arm Circumference
NGO	Non-governmental Organization
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
PIN	People in Need
PLW	Pregnant and Lactating Women
RUTF	Ready to Use Therapeutic Food
SAM	Severe Acute Malnutrition
SMART	Standardized Monitoring and Assessment of Relief and Transitions
UNICEF	The United Nations Children's Fund
USAID	US Agency for International Development
WASH	Water, Sanitation and Hygiene
WFA	Weight for Age
WFH	Weight for Height
WFL	Weight for Length
WFP	World Food Program
WHO	World Health Organization

INTRODUCTION

Did you know that the nutrition which children receive during their **first 1,000 days influences their entire lives**? Existing evidence clearly shows that children which are well-nourished during this period develop stronger bodies and minds, perform better at school, earn more in adulthood and contribute more to the development of their countries. However, as Alliance2015's Global Hunger Index shows, undernutrition is every year depriving millions of people of these essential life opportunities.

While nutrition is often perceived as a health or agricultural topic, IFPRI's research suggests that improved sanitation can achieve a considerably higher impact than increasing households' consumption of calories.[1] Similarly, a survey showed that children whose mothers attended secondary school had an up to four times lower risk of stunting.[2] Addressing undernutrition is clearly a goal requiring the **active participation and mutual cooperation of people working in all sectors**.

People in Need's approach to nutrition - **Integrated Programming for Improved Nutrition (IPIN) -** is based on the recognition that undernutrition is caused by multiple factors which cannot be addressed by a single-sector intervention. IPIN therefore encourages you to **integrate in your mission's programming nutrition-oriented cooperation among high-impact sectors** both within PIN as well as with Alliance2015 and other partners. Looking at each stage of your country office's programming through the **'nutrition lens'** enables you to employ the expertise of people working in different sectors and work together on **achieving the same goal**. Such an approach is the most effective way for addressing undernutrition and is gaining increasing support from implementing agencies as well as donors.

PIN and its partners' existing expertise in food security, WASH, education and health gives us **an excellent opportunity to make positive and lasting impact** for the future of thousands of families and the countries they live in. This toolkit helps you to materialize this opportunity – its practical, evidence-based guidance enables you to incorporate nutrition into your programming and **apply the most effective solutions** for achieving maximum positive outcomes. It is based on PIN's existing experience, guidance and lessons shared by experienced agencies and findings from dozens of researches (as credited in the references).

We hope that you'll enjoy reading this toolkit and find it useful. Before you immerse yourself in the provided guidance, take a few minutes to watch an inspirational video from PIN's Alliance2015 partner – click here. Remember also that whenever you need support in your nutrition programming, you can contact PIN's Senior Advisor for Nutrition.

Jan Mrkvička
Director of PIN's Relief and Development Department

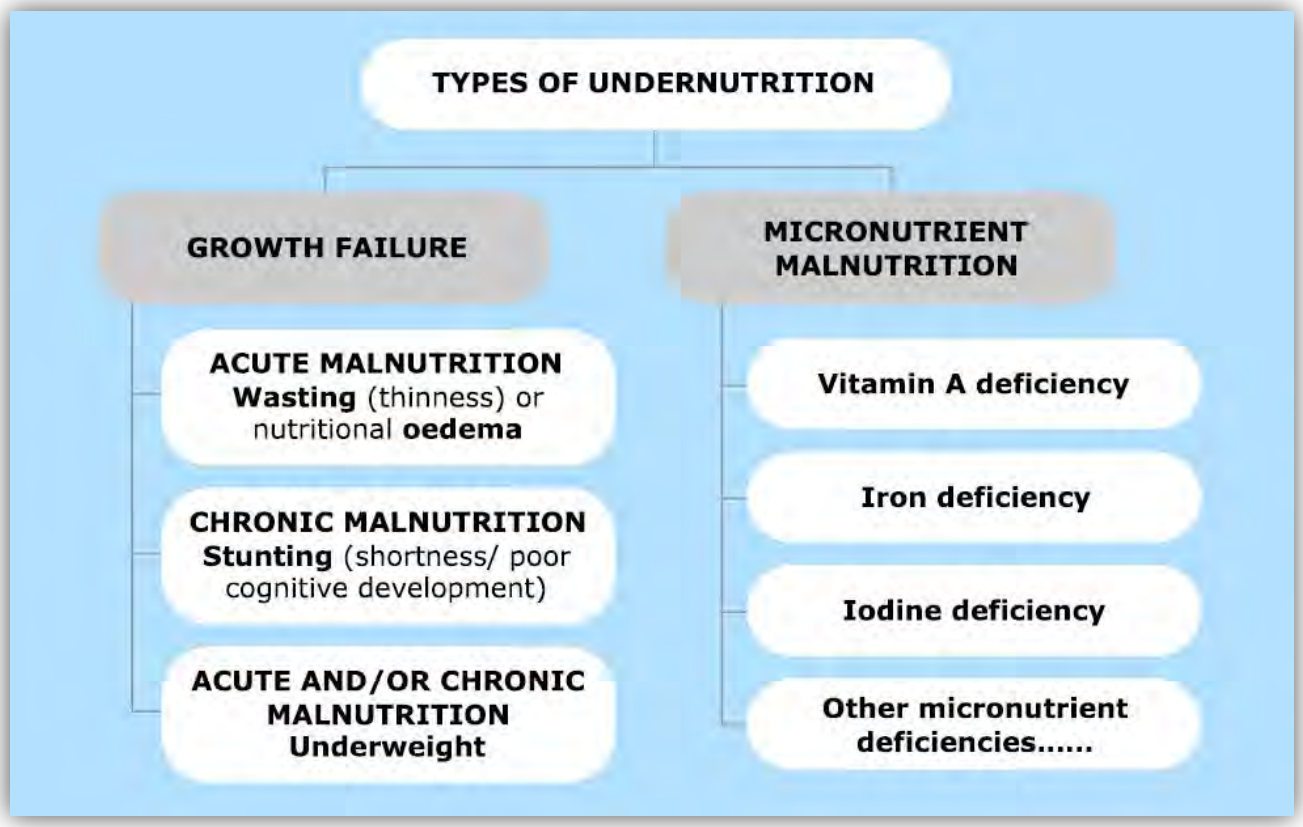
Petr Schmied
PIN's Senior Advisor for Nutrition

1. NUTRITION FOR DEVELOPMENT

This chapter defines the main types of malnutrition, helps us to understand which phase of life we should target to achieve the best impact, describes the current state and causes of malnutrition in developing countries and explains the value of good nutrition for development.

1.1 WHAT IS MALNUTRITION?

Malnutrition is a term encompassing both undernutrition and obesity. In this toolkit we deal with undernutrition only. UNICEF defines undernutrition as the *outcome of insufficient food intake and repeated infectious diseases*. Being dangerously thin for one's height (wasted), too short for one's age (stunted), underweight for one's age, and/or deficient in vitamins and minerals (micronutrient malnutrition) are all classed as undernutrition. These often overlap - for example, a stunted child may also be wasted and have micronutrient deficiencies.[3] Undernutrition can be identified by anthropometric indices (underweight, stunting, and wasting) and/or by the missing micronutrients in poor diets.[4]



Wasting (Acute Malnutrition)

Moderate and severe forms of acute malnutrition (leading to wasting) occur as a result of rapid weight loss, or a failure to gain weight within a reasonably short period of time. Wasting occurs more frequently with infants and young children, often during the stages where complementary foods are being introduced to their diets, and children are typically more susceptible to infectious diseases. Acute malnutrition can result from food shortages (e.g. after a failed harvest or floods), a recent bout of illness, inappropriate child care or feeding practices or a combination of these factors.[5] With wasting, a child does not consume enough food or absorb enough to get the calories or nutrition it needs, and as a result its body begins to digest muscle to meet the need for protein, minerals and energy[6] and its *weight is too low for its height.*

Acute malnutrition is divided into two types:

- Moderate Acute Malnutrition (MAM) – MAM is defined by a weight-for-height indicator between -2 and -3 standard deviations (so called 'Z scores') of WHO Growth Standards or by a mid-upper arm circumference (MUAC) between 11.5 cm and 12.5 cm (see toolkit's M&E chapter).
- Severe Acute Malnutrition (SAM) – is defined by a weight-for-height indicator below -3 standard deviations from the WHO Growth Standards, MUAC below 11.5 cm, oedema or marasmic-kwashiorkor. SAM is the

most dangerous form of malnutrition characterised by a massive loss of body fat and muscle tissue. It kills 0.5-2 million children annually. **Types of SAM:**

- *Marasmus* – is characterized by *severe wasting* of fat and muscle which the body breaks down to make energy. The child looks very thin and has little fat or muscle (look at the shoulder girdle, arms, legs and ribs). The body tries to conserve energy as much as possible which decreases its capacity to respond to infections. Many children get marasmus between the ages of 6 and 14 months. Marasmus is the most common form of acute malnutrition in nutritional emergencies and, in its severe form, can very quickly lead to death if untreated.
- *Kwashiorkor* – is characterized by *bilateral oedema* affecting the lower legs and feet and progressing to the arms, hands and face (children look fat or swollen). Kwashiorkor is an excessive accumulation of fluid in body tissues, which results from severe nutritional deficiencies. Such children may not lose weight when developing acute protein-energy malnutrition because the weight of this excess oedema fluid counterbalances the weight of lost fat and muscle tissue. Kwashiorkor is very important to distinguish because the risk of death for children with kwashiorkor is higher than it is in children with just wasting or thinness. Other common signs of kwashiorkor include thin, sparse, and pale hair that falls out easily; dry scaly skin (which may result in open wounds); puffy face; children are irritated. See page 29 for info on recognizing oedema.
- *Marasmic-kwashiorkor* – is a combination of both wasting and oedema.[7]

Stunting (Chronic Malnutrition)

Stunting, or low height-for-age, is an anthropometric measure of linear growth that indicates chronic restriction of a child's potential growth and is associated with deficits in cognitive development, poor performance in school and reduced productivity in adulthood. Stunting occurs over time, unlike acute malnutrition. A child who is stunted or chronically malnourished often appears to be normally proportioned but is actually shorter than normal for his/her age. Stunting can start before birth and is caused by poor maternal nutrition, poor feeding practices, poor food quality as well as frequent infections leading to malabsorption of nutrients and slowing down of growth.[8] The body adapts to a long-term lack of nutrients by giving priority to the needs of vital organs and functions rather than to growth in height.[9]

Micronutrient Deficiency

A long-term lack of nutritious food, or having an infection such as worms (helminths), can result in a lack of vitamins and minerals in a child's diet. Micronutrient deficiencies represent a serious risk to a child's health: they account for one-third of all malnutrition-related child deaths, and 10% of all child deaths. Nearly all deaths linked to micronutrient deficiency are due to a lack of vitamin A, zinc or iron. [10]

LEARN MORE:

- Nutrition Course – short and very useful course, available at www.globalhealthlearning.org/course/nutrition-introduction
- Helen Keller International (1999), Nutrition Reference Manual, 58 p.
- Save the Children (2012), A Life Free From Hunger, 77 p.
- Chapter 2 from UNICEF's excellent on-line training - www.unicef.org/nutrition/training

1.2 FOCUS ON THE FIRST 1000 DAYS

While it is recognized that nutrition is important throughout a person's life, **the most critical period in a person's development are the first 1000 days of life** - beginning with conception, through a mother's pregnancy and up until the age of two. This is when undernutrition can cause long-lasting damage to a person's physical and cognitive development. Even if a person's diet improves later in life and any health issues are resolved, **damage done during this period to the mental and physical development is largely irreversible**. Ensuring good nutrition in the first 1000 days can have a life-changing impact on a child's future and help break the cycle of poverty. This period is therefore the **priority for PIN's nutrition programming** (also for many others – see www.thousanddays.org).

1.3 UNDERNUTRITION IN NUMBERS

- Malnutrition is the underlying cause of the death of 3.1 million children each year[11] – one-third of the global total of children's deaths.
- One in four of the world's children are stunted. In developing countries this figure is as high as one in two. That means their body and brain has failed to develop properly because of malnutrition.
- Global progress on stunting has been extremely slow. The proportion of children who are stunted fell from 40% in 1990 to 27% in 2010 – an average of just 0.6 percentage points per year.
- 80% of stunted children live in just 20 countries, including those where PIN works (DRC, Ethiopia and others).
- 19 million babies a year start life with a low birth weight due to poor growth in the womb, having a lower chance of achieving healthy physical and cognitive development.
- In 2004, vitamin A deficiency accounted for almost 670,000 child deaths.
- 42% of pregnant women suffer from anaemia which increases the risk that mothers and their babies will die at childbirth or that the baby will have a low birth-weight or pre-term delivery. Anaemia is estimated to contribute to more than 115,000 maternal deaths and 591,000 perinatal deaths globally per year.[12]

To better understand the impact these statistics have on people's lives and to what extent undernutrition is damaging the development potential of poor countries, read the following section: *Nutrition's Value for Development*.

1.4 NUTRITION'S VALUE FOR DEVELOPMENT

Both in 2008 and 2012, the Copenhagen Consensus (a group of world-renowned economists), agreed that **combating undernutrition is the best development investment**.[13] At the same time, nutrition is in recent years receiving considerably more attention from development donors (between 2008 and 2011, funding for nutrition went up by 60%[14]) and implementing agencies. The main reason why undernutrition is becoming such a high development priority is an improved understanding of its potential to significantly contribute to addressing the main development challenges.

The overview below illustrates how undernutrition constrains improvements in some of the key development sectors. There is robust evidence proving that better nourished populations have considerably higher potential to support the development of their countries. By addressing undernutrition we directly contribute to achieving the main development priorities, across many sectors and layers.

Nutrition for Education

Undernutrition impairs cognitive development and can result in poorer performance at school. Stunted children, compared with non-stunted children, are less likely to be enrolled in school, more likely to enrol late, to attain lower achievement levels or grades for their age, and have poorer cognitive ability or achievement scores.[15] Iodine deficiency, which affects one-third of school children in developing countries, leads on average to a loss of 10–15 IQ points. In Zimbabwe, malnutrition is judged to have reduced lifetime earnings of individuals by 12% due to its impact on educational achievement.[16] Preventing undernutrition in the first 1000 days of life is therefore crucial for enabling people to fulfil their potential.

Nutrition for Health

Undernutrition contributes to 35% of the illnesses suffered by children under 5.[17] Undernutrition in childhood increases the risk of chronic illness in adulthood (such as diabetes, cancer, heart disease or obesity), with serious consequences for adult health, productivity and survival. Girls affected by stunting in the 1000 days period grow up to be smaller and in turn, have smaller, stunted babies that are more likely to be undernourished.[18] Ensuring healthy nutrition in the first 1000 days of a child's life therefore represents one of the best buys for a person's healthy and productive future.

Nutrition for Economic Growth

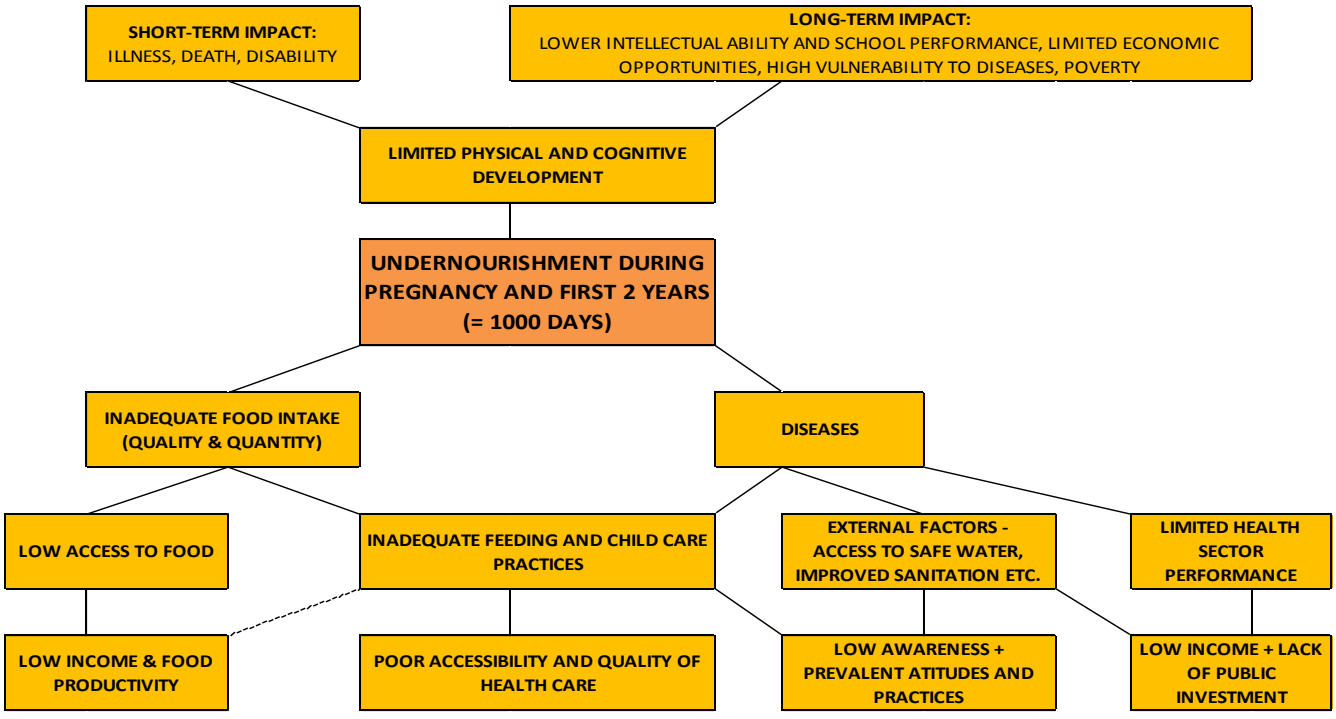
The most severe impacts of undernutrition in the first 1000 days such as permanent mental and physical disability, higher susceptibility to illnesses, lower productivity and lower IQ all negatively impact on countries' development. Undernutrition is estimated to lead to losses in poor nations' GDP of as much as 2–3% per annum. Globally it is estimated that the direct cost of child undernutrition is between $20 billion to $30 billion per year.[19] While improving nutrition can have a positive impact on economic growth and development, the reverse relationship is not as straightforward – a growing economy does not guarantee an improvement in nutrition. Additional country-specific solutions are needed to improve nutrition, especially for the poorest and most vulnerable children.

1.5 WHAT CAUSES UNDERNUTRITION?

At the most immediate level, *undernutrition is the outcome of inadequate dietary intake and repeated infectious diseases*. Its primary causes are influenced by food access, health sector performance, water and sanitation, and the way a child is cared for (for example, whether the infant is breastfed or whether basic hygiene practices are used). These intermediary causes of malnutrition are influenced by low income and food productivity, limited public investments in health care service and WASH, low awareness and importantly prevalent attitudes and practices.

Undernutrition has often been viewed as a problem of limited food availability and a solution for addressing undernutrition has often been to increase food production. Such a perception is very simplistic and ignores a wide range of contributing factors which nutrition interventions need to address in order to achieve a tangible reduction of undernutrition. For PIN's programming it is essential that our program implementation teams *understand the real causes of undernutrition* and that PIN's interventions are based on proper, factual analysis. A large amount of well-written, country specific studies describing the main nutrition-related issues and their causes are available on the Internet – investing time in using these resources can significantly improve the impact of your intervention.

CAUSES AND IMPACTS OF UNDERNUTRITION DURING THE FIRST 1000 DAYS



1.6 MYTHS ABOUT (ADDRESSING) UNDERNUTRITION

There are a number of myths, simplifications and misunderstandings about (addressing) undernutrition that can lead to poorly designed strategies, unrealistic expectations and other wasted opportunities. Let's therefore have a look at what the existing evidence says about the most common misconceptions.

Food production projects improve nutrition

Food production projects have for decades assumed that increased production leads to improved nutrition. However, there is very little evidence confirming such an assumption. Recent USAID and DFID-funded reviews of the impacts of food security projects concluded that although the projects improved the production and consumption of nutritious food, the studies couldn't identify a direct impact on the nutritional status of the children. This mainly means three things: 1) project designers' strategies focused more on increasing production than decreasing undernutrition; 2) very few food security projects had SMART indicators enabling the assessment of the project's value for improving nutrition; and 3) food production projects often aren't well linked to other interventions (e.g. WASH projects helping to reduce nutritional loses, nutrition counselling projects etc.) and since they address only a part of the problem, their potential to tangibly reduce undernutrition levels is fairly low. More food doesn't necessarily mean better nutrition. To reduce undernutrition, food security projects need to be more nutrition-sensitive and better integrated with other actions.

Nutrition projects are mainly for emergencies

Most undernourished children and pregnant women do not live in emergency situations. A number of them indeed require urgent assistance; however, the biggest and most effective job that needs to be done is to address the factors that make people undernourished. Improving hygiene and sanitation, strengthening health systems, diversifying agricultural production, increasing awareness on healthy nutrition and other development-oriented interventions are crucial for a long-term reduction of undernutrition and its devastating effects.

Children are undernourished because their families cannot secure enough food

Although poverty and limited access to food is one of the key causes of undernutrition, undernutrition is also prevalent among children living in more 'food-secure' households. These children may eat enough, but if they don't eat the right type of diverse foods or if they experience significant nutrient losses due to infections, they may still become undernourished.

Nutrition is a new (health) topic and isn't related to my education/ WASH/ livelihoods programming

Nutrition is caused by and has significant impacts on a number of sectors other than health. Low nutrition awareness at schools, poor hygiene and sanitation, limited diversity of people's food sources are all among the main causes of undernutrition. There is strong evidence that due to impaired cognitive development, children who have been undernourished are less likely to be enrolled in school and more likely to perform poorly than their well-nourished peers. Lower IQ and educational attainments, higher susceptibility to illnesses and lower productivity reduce people's potential to secure decent livelihoods and contribute to the development of their countries. Undernutrition is clearly a challenge which impacts all sectors and People in Need's IPIN approach therefore encourages people working in different sectors to take part in our multi-sectoral responses.

Undernutrition will be addressed by mass food & bio-fortification methods

Vitamin A enriched sweet potatoes, iodine fortified salt, iron fortified fish sauces and flour have all achieved excellent results in reaching a large number of people at a low cost. Fortification is indeed one of many promising means for addressing micronutrient deficiencies. At the same time, let's realize that it tackles only some of the factors contributing to undernutrition and raises a number of questions: Will people accept the taste of fortified foods? Are farmers willing to select and pay for seeds of bio-fortified crops? Can the most vulnerable households access these products even at the rural markets? Is the risk of damage to the environment (such as expansion of monocultures) too high?

Cooking demonstrations and teaching about good diet alone will improve nutritional status

Cooking demonstrations and nutrition education sessions are attractive and easy to organize events. However, if implemented over a period of several weeks/ months only and not complemented with interventions addressing other causes of undernutrition, it is unrealistic to expect them to result in any positive changes in people's nutritional status.

2. NUTRITION IN YOUR PROGRAMMING

This chapter outlines the first steps for incorporating the IPIN approach into your programming. It outlines the key information you should get familiar with, explains the approaches which donors and implementing agencies are focusing on and provides guidance on integrating nutrition in your mission's strategic plan.

2.1 UNDERSTANDING (UNDER)NUTRITION IN YOUR AREA

Understanding (under)nutrition in the area of your operation is the first step for incorporating nutrition into your programming. At the beginning it is useful to realize that in the previous years there may have been dozens of institutions working on similar programs to those you're considering – they published statistics, wrote manuals, produced IEC materials, trained staff, developed curriculums for behavioural change communication, generated best practices and also failures. Therefore, the best way in which to start your nutrition programming is to invest enough time in conducting a proper review which will prevent you from reinventing the wheel or repeating the mistakes which others have made. Such a **review should be conducted during the programming and emergency preparedness phase** - before you start designing your project or before a disaster strikes. In total, two weeks of an expat's and a national staff's time are required to conduct a full review. However, if your programming focuses on a particular cause of undernutrition only (e.g. WASH/ food production), reduce the scale of the review and tailor it to make it more specific to your sector.

Look for	Focus on	Sources of Information
Statistics	Trends over time related to: ▪ % of stunted/ wasted/ underweight children; ▪ prevalence of low birth weight ▪ micronutrient deficiencies (vitamin A, iron, zinc) ▪ proportion of infants aged 0–6 months fed exclusively with breast milk ▪ sector-specific statistics (e.g. concerning WASH)	▪ National Demographic and Health Surveys ▪ statistics at WHO, UNICEF and WB's websites ▪ anthropometric studies conducted by INGOs ▪ sector-specific data from available reports *Note: make sure that you consider the seasonal variations as this improves programmes' effectiveness*
Secondary information	▪ causes of undernutrition and the key issues in the given country (incl. their seasonality) ▪ existing national nutrition strategies & their priorities ▪ (sub)national institutional structures dealing with undernutrition ▪ donors' in-country support to improving nutrition	▪ research studies by other NGOs ▪ Google search ▪ Ministry of Health, Ministry of Agriculture etc. websites ▪ donors' websites, strategies and calls for proposals
Meetings with experienced NGOs and UN agencies	▪ roles and effectiveness of existing national institutions responsible for dealing with nutrition ▪ existence of coordination/ technical working groups ▪ main ongoing & planned nutrition national programs/ projects in your target area ▪ nutrition priorities to address ▪ existing (sub)national systems for treatment of SAM ▪ availability of ready to be shared IEC materials, country specific guidelines, evaluation reports, contacts for trainers, in-country consultants ▪ possibilities for cooperation	▪ you may start with Alliance2015 partners working on undernutrition ▪ consult both international and national NGOs (where available) ▪ meet with UN agencies and more important INGOs only once you get a fair understanding of the topic
Meetings with relevant authorities	▪ main ongoing national (nutrition) programs ▪ existing health centres' support to addressing undernutrition ▪ existing strategies for addressing undernutrition ▪ existence of coordination/ technical working groups ▪ possibilities for cooperation ▪ availability of IEC materials, trainers, guidelines	▪ start with provincial level (health/ WASH…) authorities ▪ based on contacts provided by INGOs or provincial authorities, contact relevant departments at the Ministries ▪ other Ministries such as Ministry of Rural Development or Ministry of Agriculture may also have their own nutrition-related agenda (e.g. WASH promotion)

While this information will help you to get a general understanding of (under)nutrition in your area, once you decide to develop a project proposal you'll need to conduct an assessment involving local communities, health care providers and local authorities. This assessment is described in the chapter *'Practical tips & tricks for design, implementation and M&E'*.

2.2 WHAT DO YOU WANT TO ACHIEVE?

Donors and implementing agencies call for the implementation and scaling up of **two complementary approaches to addressing undernutrition**:

The first one is direct ***'NUTRITION-SPECIFIC INTERVENTIONS'***:

- The most common **objective of nutrition-specific interventions** is to reduce the prevalence of undernutrition among pregnant and lactating women and children under two (often up to five years of age).
- The approach uses a **combination of the most cost-effective interventions** which have proven to deliver the best impact on child and mothers' nutritional status – such as those interventions identified in 2008 and 2013 by *The Lancet* medical journal: the promotion of breastfeeding, complementary feeding, micronutrients and others.[1]
- Commonly used **indicators** are: prevalence of underweight/ stunting/ wasting in children aged 6-24/59 months, prevalence of low MUAC in pregnant women and children aged 6-24/59 months and prevalence of low birth weight as well as prevalence of anaemia among pregnant women and children under-five.
- Emergency interventions intensively providing Ready to Use Therapeutic Foods (RUTF) and other **treatment can record measurable results after several months only**. These results may, however, to a large extent not be sustainable as such an approach doesn't address the underlying causes of undernutrition.
- Development-oriented interventions aiming to achieve a long-term reduction of undernutrition through **addressing its key causes may take at least 3.5 (preferably 4-5) years** to demonstrate an overall decrease of undernutrition in the given area. They require multi-sectoral, intensive community-based work with a well thought out behavioural change strategy.

The second is the broader multi-sectoral ***'NUTRITION-SENSITIVE INTERVENTIONS':***

- Nutrition-sensitive interventions are often 'ordinary' sectoral (e.g. WASH, food security) projects whose designers made the effort to ensure that they also specifically **address one or more causes of undernutrition**.
- Undernutrition is caused by several factors related to different development sectors (health, WASH, agriculture...) and its reduction therefore **requires a multi-sector response**. Unless closely cooperating with other nutrition projects, sector-specific projects therefore usually don't claim to have a measurable impact on the reduction of wasting, low birth weights or other indicators of undernutrition.
- They aim to improve the dietary diversity/ increase consumption of micronutrient rich foods, reduce diarrheal diseases, enhance practices of optimal nutrition and care, sustain pregnant women and infants' nutrition intake during sudden disasters (e.g. floods), and other **factors that help women and children to be well nourished**.
- Improvement of nutrition doesn't necessarily need to be included in the project objectives (e.g. in a case where your donor emphasizes other priorities) but needs to be well integrated in the project's strategy and in its indicators (so that you're able to **prove which causes of undernutrition you have addressed and to what extent**).
- Nutrition-sensitive interventions can be, for example, projects focusing on integrating nutrition into school curriculums, WASH projects, agricultural projects focusing on diet diversification, cash-based projects paying higher attention to pregnant women and families with children under 2 or projects strengthening health systems. Virtually **all sectors offer a number of opportunities for addressing the causes of undernutrition**.
- While addressing the specific causes of undernutrition is certainly important, it doesn't necessarily lead to a measurable reduction of undernutrition in the most vulnerable groups. For example, the benefits of a diet diversification project may be compromised by a large nutrition loss due to poor hygiene and sanitation practices, inadequate child care or poor availability of basic health services. **Nutrition-sensitive projects bring the biggest benefits when they're closely interlinked with projects focusing on other causes of undernutrition** – e.g. a food security project combined with a WASH project. This doesn't mean that you need to do the entire job - if your programming is, for example, focused on food security, look around for NGOs with sound expertise in WASH and explore the possibilities of joint (nutrition-sensitive) programming.

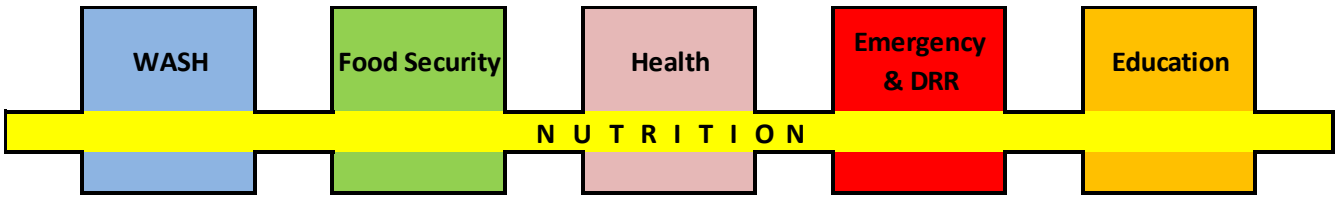
[1] Lancet's recommendations are available in Lancet (2008) *What works? Interventions for maternal and child undernutrition and survival* or for short summary see Save the Children (2012). An updated list of the key interventions was published by the Lancet in 2013.

2.3 INTEGRATE IPIN INTO YOUR MISSION STRATEGIC PLAN

Undernutrition is one of the most serious challenges undermining people's development. PIN's **Integrated Programming for Improved Nutrition (IPIN)** approach is based on the recognition that well-designed, multi-sectoral programs addressing the key causes of undernutrition simultaneously are essential for fighting poverty and strengthening people's resilience. IPIN has been **developed by consolidating PIN's existing experience** in the priority sectors, best practices of other agencies and latest research findings. This approach is to be gradually integrated **into the development and emergency programming and responses of its missions**, where it is relevant.

Among the main interlinked components of **introducing IPIN** are:

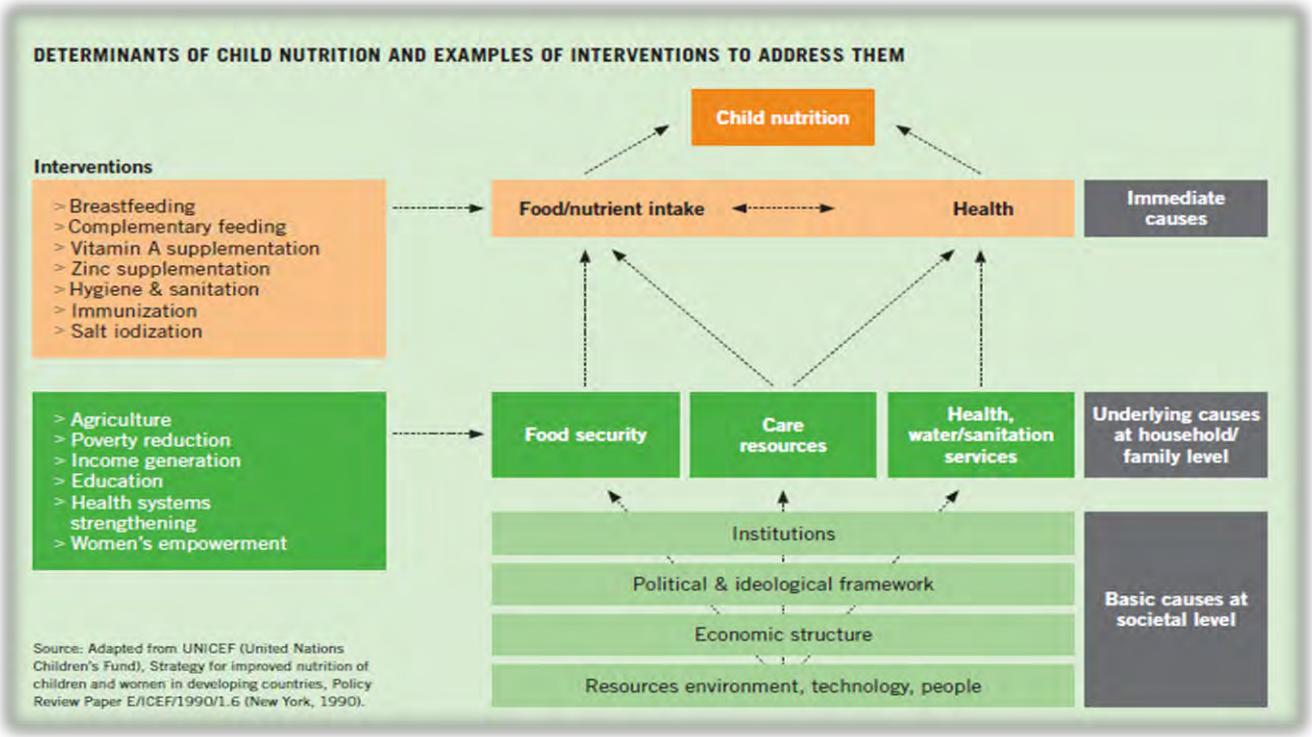
- ✓ **ANALYSE:** PIN commits itself to making an effort to analyse problems related to undernutrition in every country ranked in the Global Hunger Index as serious, alarming or extreme (see here). This process needs to be a part of a **missions' strategic planning** and result in specific decisions for their future nutrition programming. See guidance on conducing assessment in section 2.1.
- ✓ **FOCUS:** Based on the analysis, the mission needs to define to what extent and how it will focus on implementing nutrition-specific and nutrition-sensitive interventions (see section 2.2). Such analysis also needs to assess the intervention from the **value-for-money perspective** and **justify why the selected approach is expected to bring the desired impact**. A decision not to consider undernutrition at all must be justified to and approved by PIN Relief and Development Department management.
- ✓ **SET INDICATORS:** Every strategic plan needs to define realistic and measurable indicators indicating progress in the integration of the IPIN approach. **Indicators proposed for nutrition-specific interventions are**: % of projects specifically targeting beneficiaries at risk of undernutrition; % of projects monitoring nutritional status of beneficiaries; % of projects interlinked with broader nutrition-oriented interventions etc. **Indicators suggested for nutrition-sensitive interventions are**: no. of nutrition-sensitive projects; no. of established partnerships for multi-sectoral nutrition-sensitive projects; regular monitoring of indicators related to the causes of undernutrition; no. of children and mothers benefiting from nutrition-specific interventions.
- ✓ **INTEGRATE NUTRITION WITH YOUR PROGRAMS:** As the diagram below indicates, **nutrition should be perceived as an integral part of PIN's programs in the relevant sectors and be considered in all phases of the program cycle.** The practical recommendations in the following chapter will help you to do so. Considering the fact that effective nutrition-related interventions require 4-5 years for achieving a measurable impact, missions should consider them as programmes (not isolated projects) and design their M&E systems as a part of programme-specific strategy.



- ✓ **FOCUS GEOGRAPHICALLY:** The core principle of the IPIN approach is to **ensure that different sector interventions target and benefit the same people in the same areas**. By doing so, nutrition-related components in PIN's "traditional" sectors can be perceived as a part of the mission's 'nutrition program' with its own M&E, bringing much higher impact for nearly the same costs.
- ✓ **PARTNER:** Since it often may not be within PIN's capacities to implement in the same areas programs focusing on all or most of the hi-impact sectors, the IPIN approach encourages you to cooperate with other agencies, for example Alliance2015 members. **Different programs of different agencies in the same area can then be linked together as one joint program** effectively addressing undernutrition. Such harmonization of different NGOs' programming needs longer-term planning with your partner institutions, so that your funding and programming priorities enable you to work together.
- ✓ **SEEK HQ's SUPPORT:** Your headquarters line managers and PIN's Senior Advisors are ready to assist you with introducing IPIN to your mission's programming. **Get in touch with us** and let's find the best possible ways to move forward!

3. BEST PRACTICES IN NUTRITION-ORIENTED PROGRAMMING

UNICEF's Conceptual Framework below represents **the main principle of People in Need's IPIN approach** – undernutrition is caused by a number of interlinked factors and if PIN wants to achieve positive changes in children's nutritional status, its interventions need to **engage several key sectors at the same time**. This chapter therefore describes how different sectors can effectively contribute to reducing undernutrition, the main challenges, and which indicators can help us to measure our achievements. This toolkit provides the essential know-how only, alongside lists of useful resources and an encouragement to contact PIN's Senior Advisors when required.



3.1 PREVENTION OF UNDERNUTRITION:

Out of thirteen essential health interventions identified by the Lancet medical journal to be most effective in tackling undernutrition, twelve focus on prevention.[20] Dozens of other preventative solutions from WASH, food security, education and other sectors have proven to address undernutrition. The following guidance shows you **how your sector programming can use these lessons and achieve maximum impact on reducing undernutrition**.

3.1.1 HEALTH

The health and **nutritional status of mothers and children are closely interconnected**, starting from the mother's pregnancy through breastfeeding and the introduction of complementary feeding. While providing a mother and her child with adequate food may seem the main concern, the **child care practices** of mothers and other caretakers as well as the quality of health care they receive is of equally important concern. The following guidance provides you with useful know-how for translating your health-related interventions into improved nutrition for mothers and their children.

ADEQUATE INFANT AND YOUNG CHILD FEEDING (IYCF)

According to WHO, adequate infant and young child feeding means that *"… infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health. Thereafter, infants should receive nutritionally adequate and safe complementary foods, while continuing to breastfeed for up to two years or more."*[21] Of all preventive health and nutrition interventions, IYCF – an umbrella term for the different activities involved in feeding a child from birth to the age of two – has the single greatest potential impact on child survival.[22] The respected medical journal Lancet estimated that each year, over 1.3 million young lives could be saved with universal exclusive breastfeeding and 587,000 more with adequate complementary feeding for children from 6 to 24 months old.[23]

THE CHALLENGE: While promotion of breastfeeding has in many countries recorded gradual success, **transition from breastfeeding to complementary feeding remains a high-risk period for infants** – mothers sometimes completely stop breastfeeding and provide food which isn't of sufficient nutritional value. Micronutrient deficiencies, so called 'hidden hunger', account for 10% of all children's deaths out of which nearly all are due to a lack of vitamin A, zinc or iron.[24] Caretakers' child care practices are equally important – while families often follow a number of healthy practices, the prevalence of harmful traditional beliefs and practices ranks **behavioural change campaigns among the main priorities and an essential component of your health interventions**.

➢ EARLY INITIATION OF BREASTFEEDING

Breast milk is the best food for babies, providing them with all the nutrients and water they need. A WHO 2007 study confirmed that *infants who are put to the breast soon after birth are more likely to start breastfeed soon after the delivery and keep breastfeeding for a longer period of time*.[25] Furthermore, initiation of breastfeeding within the first hour of birth is estimated to **prevent 22% of neonatal deaths**.[26] The milk available in the first days after delivery, colostrum, contains more antibodies than later milk and gives babies the first "immunization", protecting them against most of the bacteria and viruses which surround the babies at the time of birth.[27] However, due to colostrum's yellow colour and consistency, caretakers often perceive the milk as 'spoilt' and mothers don't provide it to their newborns.

WHAT DOES (NOT) WORK?

- WHO's main recommendation for mothers and health staff is to: *"Place babies in skin-to-skin contact with their mothers immediately following birth for at least an hour and encourage mothers to recognize when their babies are ready to breastfeed, offering help if needed."*
- Many countries have already developed curricula for **training of health centre (HC) staff** and in some cases also traditional birth attendants – contact UNICEF and MoH and discuss the possibility of providing practical trainings.
- Invest in **understanding caretakers' perception of early breastfeeding** – for example, a belief in Cambodia which is fortunately diminishing, is that colostrum causes diarrhoea, is sour and dirty and babies should therefore receive water mixed with sugar instead. If you don't understand such perceptions, your health promotion campaigns may fail.
- Train and support community health volunteers or HC extension staff in **organizing health promotion campaigns for women of reproductive age** including promotion of the early initiation of breastfeeding.
- If you (plan to) run a **health promotion through mobile phones**, include a message promoting early breastfeeding.

INDICATORS

- % of children born in the last 24 months put to the breast within 1 hour of birth
- % of mothers aware of the importance of early initiation of breastfeeding

➢ EXCLUSIVE BREASTFEEDING FOR THE FIRST SIX MONTHS

Exclusive breastfeeding means that babies are given breast milk only (no other liquids or solids), frequently and on demand (both day and night). Breast milk is a safe, hygienic and free source of energy, nutrients, and fluids. It contains disease-fighting substances and vitamins that support the body's natural immune system. Other infant feeding products significantly increase deaths from diarrhoea and respiratory diseases.[28] Promotion of exclusive breastfeeding was evaluated as the most effective preventive intervention with a potential to decrease mortality among children by 13%.[29] WHO therefore recommends *"…exclusive breastfeeding for six months, with introduction of complementary foods and continued breastfeeding thereafter"*.[30] Learn more in WHO (2004) *Nutrition Essentials*.

WHAT DOES (NOT) WORK?

- Most important is to explain to the caretakers the **meaning of not feeding any other liquid or food than breast milk** and feeding in a way that gives the infant adequate breast milk to meet her/ his energy needs.[31] Since not only mothers but also health workers are often used to providing water, introducing complementary foods too early or substituting breast milk with cow or sweetened condensed milk, your intervention should **focus primarily on well thought-out behavioural change communication that addresses the real beliefs and attitudes of the target population** (consider cooperating with a social marketing agency).
- Train and support HC staff, community health volunteers or women's groups in providing **breastfeeding counselling** both before and after the delivery (individual counselling is proven to be more effective than larger scale 'lectures' by HC staff). In addition to mothers, include also other influential caretakers - grandmothers, fathers or aunts. UNICEF and MoH may provide you with useful packages such as the **Baby Friendly Community Initiative** (BFCI).
- Consider sending voice **messages on adequate breastfeeding practices through mobile phones** (PIN Cambodia, MAMA program in Bangladesh and several African programs can provide required know-how and ideas).

- Commercial producers of **breast milk substitutes** have used often aggressive marketing campaigns, suggesting to mothers that infant formulas are equivalent to human milk and that the bottle is a standard way to feed a baby. To reduce the potentially **life-threatening effects of formula marketing**, WHO developed the *International Code of Marketing of Breast-milk Substitutes* restricting marketing of formulas, baby bottles, pacifiers and other products. Consider options for supporting the implementation of this voluntary code. See the International Baby Food Action Network (IBFAN) website for more information on The Code: www.ibfan.org.
- Financial pressure to start working outside the home within several months after delivery can contribute to low rates of exclusive breastfeeding among women. Consider **advocating with the main employers (e.g. garment factories) and the government for creating conditions to enable (exclusive) breastfeeding** such as paid maternity leave, providing paid breaks for breastfeeding (often required by law), setting up functional and accessible nursing rooms and promoting breastfeeding among workers.

INDICATOR

- % of infants aged 0–6 months fed exclusively with breast milk

➢ **APPROPRIATE COMPLEMENTARY FEEDING AND CONTINUED BREASTFEEDING FOR TWO YEARS**

The prevalence of malnutrition rises rapidly in infancy, as does the frequency of illnesses. The **transition from exclusive breastfeeding to complementary feeding is a particularly risky period** and it is a time when malnutrition starts in many infants.[32] Appropriate feeding between 6 and 24 months of age means giving children enough nutrients from a combination of breast milk and complementary foods that are hygienically prepared and fed, and taking special measures to feed children appropriately during and after illnesses.[33] In reality, complementary foods are often introduced either too often or too late, have little nutritional value or aren't hygienically prepared.

WHAT DOES (NOT) WORK?

- The main practices to be promoted concern adequate **frequency** of feeds, their sufficient **amount**, nutrient **density & diversity** and effective **utilization** of eaten food (e.g. by preventing infections from unhygienic food).
- Train, coach and support health centre staff, community health volunteers, your outreach staff or (existing or newly established) informal women's groups in:
  - **Counselling for improving child feeding practices** - involves reinforcing and encouraging good practices, assessing feeding problems, discussing possible solutions, and motivating mothers and/or caregivers to try at least one or two modifications in how they feed their infants.
  - **Growth Monitoring and Promotion (GMP)** – involves regular (e.g. monthly) weight and/ or height measuring of children (usually in the community) and targeted promotion of optimal nutrition behaviours. Measurements are intended to help to show health workers and their caretakers whether children are growing adequately (see chapter Measuring Undernutrition), while nutrition education sessions and/or individual counselling aim to improve family/caretaker nutrition practices. GMP sessions can be an effective part of behavioural change communication campaigns, but only if they are accompanied by group or ideally, individual counselling to improve nutrition-related behaviours. Many programs make the mistake of focusing on growth monitoring alone and forgetting growth promotion (nutrition education, counselling, etc.). Remember that the "P" in GMP is perhaps the most important part of the strategy.
  - Conducting **cooking demonstrations** accompanied by nutrition counselling (see FAO's guide below).

INDICATORS

- % of infants 6–8 months receiving (semi)solid or soft foods (measures timely introduction of complementary foods)
- % of children 6–23 months of age who received foods from four or more food groups during the previous day (measures individual dietary diversity)
- % of breastfed and non-breastfed children 6–23 months of age who receive solid, semi-solid, or soft foods the minimum number of times or more (measures meal frequency)
- % of families following at least X out of X essential child feeding practices
- proportion of children 12–15 months of age who received breast milk during the previous day

MICRONUTRIENTS

Micronutrient malnutrition is often referred to as "hidden hunger" resulting from the inadequate intake of micronutrients like vitamin A, iodine and iron. It reduces resistance to infections, affects children's learning capacity, creates disabilities and decreases adults' work capacity.[34] In 2004, vitamin A deficiency alone accounted for 670,000 child deaths.[35]

WHAT WORKS?

- Promote the **consumption of vitamin A and iron-rich foods**, especially among priority groups such as pregnant and lactating women and children 6 to 24 months of age (e.g. through home gardening, behaviour change communication strategies, promotion of fortified foods, consumption of micronutrient supplements).
- Promote the consumption of **iodized salt** for the prevention and control of iodine deficiency disorders (IDD).
- Support health (outreach) staff in **promoting early initiation of breastfeeding** (colostrum is rich in vitamin A), exclusive breastfeeding, and breastfeeding until the age of two or beyond.
- Encourage HC staff to **provide iron tablets** to pregnant and lactating women and **vitamin A capsules** to women after delivery, in accordance with national policies.
- Consult with MoH or UNICEF to explore the possibility of distributing **micronutrient powders** (sprinkles) that can be added to complementary foods for children 6 to 24 months of age.
- Promote (market-based) provision of oral rehydration salts (ORS) supplemented by **zinc** as a treatment for diarrhoea and its associated life-threatening fluid loss and dehydration (zinc can also help prevent future episodes of diarrhoea).

INDICATORS[2]

- % of families following at least X out of X essential child feeding practices
- proportion of children 6 to 23 months of age that consumed vitamin A/ iron-rich foods on the day before a survey
- proportion of children (6–24/ 59 months) receiving iron supplements or micronutrient supplements (sprinkles)
- proportion of children (6–59 months) who received one or two doses of vitamin A supplements the year preceding the survey
- proportion of children (6-59 months) who received deworming treatment in the past six months
- proportion of children with diarrhoea who were treated appropriately with ORS, zinc, and additional fluids

UNDERNUTRITION OF PREGNANT AND LACTATING WOMEN (PLW)

Pregnancy and breastfeeding are periods requiring an additional intake of nutrients which are crucial for babies' healthy growth and reducing the risk of fetal and neonatal deaths. Maternal undernutrition poses serious risks for both mother and child. An undernourished woman is at greater risk of obstructed labour, more likely to die as a result of postpartum haemorrhage and more susceptible to disease. Her child has an increased risk of being born with low birth weight, is more likely to be undernourished later in life, is more susceptible to disease and is at increased risk of mortality. The recommendations provided below are based on WHO's Essential Nutrition Actions framework providing an overview of actions that are proven to reduce the risk of undernutrition during pregnancy and breastfeeding.

WHAT WORKS?

- Train health (outreach) staff in promoting among pregnant & lactating women and their husbands **an increased consumption of nutrient-rich foods** while addressing harmful beliefs.

[2] Note: select just those indicators which are most relevant to your project and data availability

- Encourage women to attend **ante-natal checks** in local health centres.
- Encourage HC staff to provide mothers with vitamin A, iron and calcium **supplementation**.
- Consider promoting key messages through **mobile phone-based voice messaging**.

INDICATORS[3]

- proportion of babies born with weight lower than 2,500 g
- proportion of non-pregnant women with a BMI < 18.5 kg/ m^2
- proportion of women of reproductive age who consumed iron tablets (for 90 or more days, according to national policy) during their last pregnancy *(note – sufficient iron intake is also crucial in the years preceding pregnancy)*
- proportion of women of reproductive age who consumed iron tablets (for 42 or more days, according to national policy) after their last delivery
- proportion of women of reproductive age who received deworming medication during their second or third trimester of last pregnancy
- proportion of women of reproductive age who went to at least one ANC visit with a trained professional during their last pregnancy
- proportion of women who went for at least four ANC visits to a trained health professional during the last pregnancy

COMPLEMENTARY HEALTH INTERVENTIONS

➢ **HEALTH SECTOR STRENGHTENING:** The main stakeholder responsible for improving people's nutrition is (in addition to people themselves) the state and its health and other institutions. Due to their lower capacity, their role is often substituted by NGOs which can weaken them. The **main crosscutting focus of PIN's interventions therefore needs to be strengthening the capacity of the health sector** especially, from grassroots to policy level. Cooperate as closely as possible with the health authorities and support them in ensuring that most health services are delivered by them and in good quality (including the influential topic of health staffs' attitudes towards their clients).

➢ **FAMILY PLANNING:** Existing evidence shows that with decreasing birth interval lengths, esp. **below 24 months**, the risk of stunting increases. Women may not have recovered their nutritional status, which can contribute to preterm birth and low birth weight. Furthermore, too narrowly spaced pregnancies also mean that children are breastfed for too limited a time only. Family planning interventions therefore have great potential to enable women to recover and be healthy for their next pregnancies.[36]

*Since family planning is a relatively complex topic requiring long-term funding, a well thought out behavioural change strategy, supply & marketing of contraceptives and support of many stakeholders, adding an extra 'family planning' activity to your project may not result in the impact you desire. You'll likely achieve a better impact if you **support an existing initiative** of the Ministry of Health or an organization with a strong expertise.*

➢ **PROMOTION OF DEWORMING**: promote among HC staff and child caretakers the use of deworming tablets for children to reduce hookworm and other infections which cause anaemia or deplete their bodies of much needed nutrients.

LEARN MORE:

- WHO (2013) *Essential Nutrition Actions*, 90 p.
- WHO (2010) *Indicators for assessing infant and young child feeding practices*, 12 p.
- Helen Keller International (1999), *Nutrition Reference Manual*, 58 p.
- WHO (2004) *Nutrition essentials. A Guide for Health Managers*, 235 p. – pick the topics you need
- www.fantaproject.org and www.iycn.org – practical know-how from USAID's nutrition programs
- WHO's on-line *Library of Evidence for Nutrition Actions*, at www.who.int/elena/titles/en
- FAO (2011) *Promoting Improved Complementary Feeding*, 43 p.

[3] Note: select just those which are most relevant to your project and data availability

3.1.2 WATER, SANITATION AND HYGIENE

The main undernutrition-related impacts of using unsafe water, poor sanitation and inadequate hygiene practices have for long been considered to be life-threatening diarrheal diseases causing children to *lose consumed nutrients*. Recent research suggests another, even more important, factor – a disorder of the small intestine known as tropical enteropathy which *reduces the body's ability to absorb consumed nutrients*.[37] This means that the impact of poor WASH on children's nutritional status is probably considerably higher than was assumed and **improving access to safe water and sanitation while improving hygienic practices may be one of the most effective strategies for reducing undernutrition**. Washing hands with soap reduces the risk of diarrhoea by 42-47% and the risks of severe intestinal infections by 48%.[38] Since the main source of pathogens are human faeces (one gram can contain 10 million viruses and one million bacteria), increasing the use of improved sanitation and washing hands when near faeces, is of major importance. Food protection from pathogens-transmitting insect and ensuring access to safe water further reduces the risk of diarrheal and other diseases.

THE CHALLENGE: Despite many **people being generally aware of the importance of washing their hands, not many of them actually practice it**. People usually wash their hands when they are visibly unclean (e.g. after eating), however, washing hands after defecating or before food preparation and consumption often isn't widely practiced. Low availability of soap or water usually isn't the main reason for why people don't wash their hands. Among the main reasons are: people don't have easy-to-use facilities for hand washing; hand washing isn't an ingrained habit; people aren't convinced of hand washing's benefits; not washing hands isn't seen by others as inappropriate etc. This also largely applies for not using sanitation facilities where an additional factor is a poorly developed supply market.

WHAT DOES (NOT) WORK?

- Addressing WASH is primarily about changing the behaviours and attitudes of people & communities, not just constructing more toilets.
- People have their own opinions, beliefs and accustomed practices concerning hygiene and sanitation. We cannot expect that this will be changed by a one-off session lecturing on universal hygiene messages. Invest in understanding people's perspectives and use it for designing your promotion campaign.

- Many NGOs think that increasing a person's knowledge is enough to get them to change behaviours. However, this often doesn't work (e.g. we all know that exercising is good yet many of us prefer to sit by our computer or watch TV). What changes people's behaviour is more their **emotions and connections, not necessarily knowledge**.[39]
- Market-based approaches, such as **sanitation marketing**, are often more cost-effective and achieve larger scale.
- Consider having **families with undernourished children as the main target group** of your WASH project.

NUTRITION-SPECIFIC INDICATORS[40]

- % of children under 59 months with **diarrhoea** in the last 2 weeks (more than 3 loose stools passed in a 24h period)
- % of people using **safe drinking water** (from protected source (e.g. borehole), rainwater, boiled/ filtered water)
- % of child caregivers and food preparers with appropriate **hand washing behaviour** (appropriate hand washing includes the time at which it is done and the technique used)
- % of people using **hygienic sanitation facilities** (defined as facility enabling safe disposal of excrements, typically a toilet or latrine; and hygienic means there is no faeces on the floor or seat and there are few flies)

LEARN MORE:

- UNICEF (1999) *A Manual on Hygiene Promotion*, 79 p.
- WaterSHED's *website* www.watershedasia.org and its *sanitation marketing video* - click here
- UNICEF WASH website with useful resources - www.unicef.org/wash/index_43084.html
- PIN (2010) *WASH Manual*, 36 p. + annexes
- If required, feel free to contact PIN's Resource Person for WASH

3.1.3 FOOD & INCOME GENERATION

Continuous access to nourishing food is among the main preconditions for preventing undernutrition. While many people acquire food through their own production, those living in urban areas or with no land depend on cash. Projects focusing on improving people's access to food therefore need to **consider both food and income generation**.

Evaluations of agricultural projects showed that increased food production often doesn't translate into better nutrition. Our main focus therefore needs to be on **ensuring that increased and more diverse food production and/ or higher income actually leads to a better nutritional status.**

THE CHALLENGE: WFP estimates that **850 million people in developing countries go hungry**. Three quarters of them live in rural areas where the majority of hunger occurs not in conflicts or natural disasters but in annually **recurring hunger seasons.**[41] Increased urbanization and diminishing land ownership of smallholders cause more people to be fully dependent on the money they are able to earn. While people often manage to secure sufficient amounts of food, its nutritional **quality and utilization is often limited** (lacks protein, vitamins and minerals).

WHAT DOES (NOT) WORK?

- Rather than simply increasing food production, **focus on ensuring that the more vulnerable household members especially consume diverse food.** Promote the consumption of locally acceptable crops containing lacking micronutrients (e.g. specific vegetables & legumes; check their nutritional value with local UNICEF or MoH). **Homestead food production** (home gardening, poultry raising) is often used for ensuring that main food groups are represented in people's diet. Promotion of **optimal practices in harvesting, storage and processing** further helps to increase the benefits of produced crops.
- Consider having **families with undernourished children as the main target group** of your livelihoods project (local health staff may have lists of the families or can help with conducting measurements to identify them).
- Existing evaluations show that while food production projects usually achieved an increase in incomes and/ or consumption of specific foods, there is **limited evidence that they also improved nutrition**. The best impact-achieving livelihoods **projects are complemented by appropriate nutrition counselling** (incl. adequate feeding practices for your children or promotion of hygienically safe and nutritious cooking methods) **and WASH/ health interventions.**
- **Address seasonality** to ensure food and **nutrition security all year round** by, for example:
  - supporting food preservation and homestead food production consumed during the 'hunger season';
  - providing predictable transfers of cash or food covering the lean season (esp. during/ after an emergency);
  - supporting more intense outreach of health staff to timely identify children at risk of serious undernutrition.
- Where relevant, consider **training agricultural extension workers** on promoting essential nutrition messages.
- Consider **promoting biofortified crops** (iron enriched rice; zinc enriched wheat; vitamin A enriched sweet potato).
- Agri projects targeting & **empowering women** (through know-how, assets) tend to impact better on nutrition.[42]
- Be aware that projects requiring mothers to be away from home may **negatively affect their childcare practices** and children's nutritional status (this applies especially in the urban areas where substitute childcare is essential).

INDICATORS

- % of individuals have improved their dietary diversity score (IDDS – see below) from X to X food groups
- % of respondents with knowledge of at least X key nutrition messages promoted by the project
- % of 6-23m children & PLW consuming an increased quantity of iron-rich food/ other promoted micronutrients

LEARN MORE:

- ACF (2011) *Maximizing the Nutritional Impact of Food Security Interventions,* 76 p.
- FAO (2011) *Guidelines for Measuring Household and Individual Dietary Diversity Score*, 23 p.
- USAID's Food and Nutrition Technical Assistance Project - www.fantaproject.org
- IYCN (2011) *Nutrition & Food Security Impacts of Agriculture Projects,* 12 p.
- PIN (2010) *Food and Livelihoods Security in Emergencies*, 37 p.
- if required, contact PIN's Senior Advisor for Nutrition

3.1.4 EDUCATION

Existing evidence shows that children whose **mothers attended secondary school** compared with those with no schooling or primary education only have a **much lower prevalence of undernutrition** (thanks to improved care practices, better economic prospects and delaying the first pregnancy)[43]. Schools are furthermore an excellent venue for behavioural change communication campaigns focusing on essential nutrition, family planning and hygiene practices. Since they **don't directly address the first 1,000 days**, it is important that students and teachers are encouraged to further disseminate the main messages in their families and communities. Nutrition sensitive education interventions can be particularly effective in the communities where your or other agencies implement a nutrition (sensitive) project as it **complements and reinforces the promoted messages.**

WHAT WORKS?

- Work with relevant education and health authorities on **introducing the topics of nutrition, family planning and hygiene promotion into existing school curriculums**. There are a number of documented best (and poor) practices which you can learn from (incl. in PIN), especially on 'school WASH'.
- Help to ensure that schools have **adequate WASH facilities** with an effective maintenance system. Ensure that any constructions are complemented by activities motivating students (and teachers) to improve their hygiene practices.
- Promote and enable **girls' school enrolment and attendance** (if required, contact PIN's Advisor for Education).
- **School feeding** programs help both towards better educational and nutritional outcomes (see PIN Angola's work).

INDICATORS

- number (or percentage) of schools whose staff regularly teaches nutrition based on schools' curriculums
- % of teachers in targeted schools which are able to explain effectively at least X out X key promoted messages
- % of students in targeted schools with knowledge of at least X out X key promoted messages
- see more in chapter on WASH
- girls' school attendance and academic attainment (e.g. % of girls who completed secondary school)

3.1.5 GOOD GOVERNANCE & ADVOCACY

The way and extent to which official authorities and donors contribute to improving nutrition has a major impact on the state of undernutrition in the world. Countries with better designed, funded and implemented strategies have achieved significant reductions in stunting, wasting and micronutrient deficiencies. Similarly, local authorities' support to, for example, water and sanitation interventions, can achieve positive outcomes.

WHAT WORKS?

- **Local authorities** often have a budget allocated for local development and established processes enabling citizens to influence the way in which the budget is spent. Consider supporting community representatives, especially women, in **advocating for resources** which can positively contribute to an improved nutritional status (e.g. access to water).
- Depending on PIN's position in the country, gradually develop a closer relationship with **national authorities** enabling us to influence key national level decisions and strategies. Also promote **cross-sector nutrition sensitive projects.**
- Nutrition is a relatively complex topic and many **donors** are open to learning about the most effective approaches, results of good studies or feedback from the implementers and the population of their concern. Therefore, share this data and advocate donors (CZDA, ECHO, EC) for **higher and better designed support** to nutrition projects.
- For more ideas, see USAID's **advocacy tool** for increasing stakeholders' commitment to nutrition - www.fantaproject.org/tools/profiles

INDICATORS

- # of nutrition sensitive investment priorities supported by local authorities
- inclusion of nutrition (sensitive) objectives in relevant sector strategies
- donors' allocations for nutrition and response to provided lessons and recommendations

3.1.6 DISASTER RISK REDUCTION & RESILIENCE BUILDING

In the context of nutrition, **Disaster Risk Reduction** (DRR) is an approach to identifying, assessing and reducing the risk of a potential loss expressed in lives, health status, livelihoods and services that impact on nutrition.[44] A closely related concept of **resilience** then expresses the ability of people and systems to resist, absorb, adapt to

and recover effectively from the effects of a hazard in ways which don't undermine people's nutritional status. In practice, strengthening DRR mechanisms and increasing resilience includes many of the activities which are described in other chapters of this toolkit; however, are just approached and implemented from a different perspective. Examples of such activities are: diversifying livelihoods; strengthening health systems' response mechanisms; improving people's access to water; or supporting safety net systems. Search on-line for specific examples of your interest.

3.1.7 PREVENTION IN EMERGENCIES

During emergencies, people's access to (nutritious) food, water, sanitation, health and other essentials is often significantly reduced, exposing especially children to a higher risk of wasting causing irreversible damage to their physical and mental development. While nutrition responses in emergencies are often understood as specialized treatment oriented interventions, equally important is to prevent children from becoming wasted as a consequence of rapid-onset emergencies. Even if your emergency response doesn't specifically focus on nutrition, several simple modifications in its design can make your work in almost any sector much more nutrition sensitive and reduce the risk of wasting. This brief section therefore provides practical prevention-oriented tips.

WHAT DOES (NOT) WORK?

- Consider focusing your **targeting specifically on families with children under two and pregnant and lactating women**. You'll be able to reach the nutritionally most vulnerable groups and such more considered targeting may also be more attractive to the donors.
- Since pregnant and lactating women have higher nutritional requirements, consider providing them with **greater support** than other groups – higher and/ or more frequent cash transfers, tailored food rations or broader WASH support can all help to reduce the risk of wasting.
- When providing food, if possible, prioritise the distribution of **fortified foods** including required micronutrients such vegetable oil enriched with vitamin A and iodised salt. Contact UNICEF or other relevant agencies and discuss the possibility of providing **micronutrient powders** to pregnant women, lactating women and young children designed to provide the daily recommended intake of the key nutrients.
- Provide logistics, material and other required support to **outreach of local health facilities staff** (or other competent extension workers) to 1) **promote key wasting-prevention messages** to both male and female caretakers and to 2) conduct screening for **identification** of children and mothers at risk of wasting.
- Emergencies increase the risk of bottle feeding and breast milk substitute distributions which may cause serious health hazards (indirectly discouraging breastfeeding; being mixed with unsafe water etc.). It is important to **encourage breastfeeding** and ensure that there are **no untargeted distributions of infant formula, milk powder or liquid milk** in a general food distribution. See page 186 on Guidance Note in 2011 Sphere Handbook.
- For further lessons, read brief ACF (2013) **Nutrition Mainstreaming** In Pakistan Flood Response Programming.

INDICATORS

- see WASH, health and food security Indicators above
- see sector-specific indicators in the **Sphere Handbook**

3.2 REFERRAL OF IDENTIFIED UNDERNOURISHED CASES

Any prevention-oriented projects whose M&E system includes indicators focusing on changes in people's nutritional status will, during its monitoring especially, identify moderately or severely undernourished cases. For prevention projects it is therefore important to have **established cooperation with facilities ensuring required treatment**. This is essential for avoiding situations where your prevention oriented projects identifies, for example, during its outcome monitoring, severely wasted children but will not be able to offer to their families any solution for treatment.

The main providers of treatment services are usually district or provincial hospitals or treatment centres set up by NGOs. These are, however, often located relatively far from patients' homes and families may not be able to cover the **cost related to transport and stay in the treatment centre** (if in-patient care is required). In countries with more developed health and governance systems, local authorities may be willing to cover part of the costs. However, in less developed areas you'll need to face the dilemma of letting the costs be paid by the families or being (unsustainably) subsidized by your own or another agency.

If possible, families of children which completed the treatment should be followed-up by an assessment identifying the main causes of their undernutrition (food insecurity, poor childcare practices, combination…) and provision of assistance (e.g. counselling, improved access to water, vegetable growing) **reducing the risk of the child's relapse**.

For more info on **referral in treatment oriented interventions**, see recommended manuals in the following chapter.

3.3 TREATMENT OF MODERATE AND SEVERE UNDERNUTRITION

Severe acute malnutrition (SAM) contributes to nearly 1 million child deaths each year, largely in non-emergency countries.[45] Its medical treatment has traditionally been restricted to facility-based approaches with limited coverage and impact.[46] In the past decade especially, an increasing number of agencies started recognizing that the majority of children can and should be treated at home, enabling assisting staff to treat with the same budget a much larger number of undernourished children. **Community-based Management of Acute Malnutrition (CMAM)** developed out of this recognition, and gradually became established as the main approach for the treatment of acute malnutrition and is **recommended by PIN to all its country offices** whose programming focuses on addressing undernutrition. In an increasing number of countries, CMAM has already been **integrated in the official health systems**. As the diagram[47] shows, CMAM involves:

1) **community outreach** focusing on timely detection of undernourished cases, referral and an effective counselling;
2) **management of moderate acute malnutrition** (MAM);
3) **outpatient treatment for children with SAM** with good appetite and no medical complications (includes provision of Ready to Use Therapeutic Foods (RUTF; largely PlumpyNut®), often provided by UNICEF);
4) **inpatient treatment for children with SAM** and medical complications in a health facility;
5) **complementing prevention-oriented interventions** (e.g. WASH).

WHAT DOES (NOT) WORK?

- Many countries have already developed or are developing their **national CMAM systems**. Cooperate therefore closely with the **official health authorities**, health facilities' and extension staff and assist them with enhancing their capacities for strengthening the CMAM system (rather than weakening them by creating a parallel system).
- The vast majority of undernourished children are never brought to a health facility. The core component of CMAM is therefore the existence of an effective, **community-based system for the identification and referral** of undernourished children and for ensuring follow-up on treated cases. This requires working with an extensive network of community health workers requiring good supervision (monitoring, coaching, incentives…).
- When considering implementing CMAM, be aware that CMAM is usually very **demanding on logistics** and the numbers of (well-trained) **human resources** needed (esp. outreach workers) – plan and budget generously.
- While CMAM treats undernutrition, it doesn't address the reasons for why people became undernourished, increasing the risk of relapse - **integrate therefore your CMAM project with other prevention-oriented intervention(s)**.

Since useful CMAM guides of other agencies cover well over 100 pages, it isn't within the scope of this toolkit to provide detailed guidance on how to manage CMAM. Refer therefore below to these **best available resources** enabling you to better consider implementing CMAM, to train your staff and to access step-by-step guidance.

INDICATORS

- since CMAM has a larger number of specific indicators, please refer to the SPHERE handbook + publications below
- for an example of 'logframe logic' of CMAM systems, see UNICEF (2013) Evaluation of CMAM, p. 14

LEARN MORE:

- www.cmamforum.org – great source of trainings, guidance, technical briefs and much more
- national guidelines for treatment of SAM (if available) – contact local UNICEF office or MoH
- ACF INTERNATIONAL (2011) *Guidelines for the Integrated Management of SAM,* 133 p.
- Emergency Nutrition Network (2011) Harmonized Training Packages – *Management of MAM/ SAM (HTP 12/ 13)* + number of very useful supporting guidance - www.unscn.org/en/gnc_htp
- FANTA (2008) *Guides and PowerPoints for trainings on CMAM* (French and English) – available from www.fantaproject.org/focus-areas/nutrition-emergencies-mam/cmam-training
- if required, contact PIN's Program Development Advisor for Nutrition

4. PRACTICAL TIPS & TRICKS FOR DESIGN, IMPLEMENTATION AND M&E

This section will help you to select the most vulnerable target groups, conduct field-level assessment, ensure good-quality project design and implementation and set-up a results-oriented M&E system. While this toolkit will help you with the main orientation, recommended resources will provide you with all the detailed know-how you need.

4.1 RECOMMENDATIONS FOR TARGETING

While good nutrition is important for everyone, groups most vulnerable to undernutrition typically include those with increased nutrient requirements:

- **Children** - most growth faltering occurs between 6 and 24 months when the child is no longer protected by exclusive breastfeeding and is more exposed to disease and infection through contaminated food or water.
- **Women of reproductive age, esp. pregnant and lactating women** - there are increased nutrient needs during pregnancy. Inadequate food intake before and during pregnancy can increase the risk of delivering an undernourished baby. When mothers are breastfeeding they require extra energy, which they can get from the reserves they have built up before and during pregnancy and from eating extra food after birth.
- **People living with HIV and AIDS** - HIV infected people are at greater risk of physical deterioration because of a number of factors. These include reduced food intake due to appetite loss or difficulties in eating; poor absorption of nutrients due to diarrhoea; parasites or damage to intestinal cells; changes in metabolism; and chronic infections and illness. Undernutrition and HIV affect the capacity of the immune system to fight infection and keep the body healthy.
- **Older people, people with chronic illnesses or disabilities -** adults with reduced appetite due to illness or old age often face a range of nutritional risks. People with reduced mobility may have reduced access to food and to sunlight (important for the intake of vitamin D).

Influential caretakers (fathers, grandmothers, positively deviant women), health staff, local authorities and other stakeholders are often among the main target groups thanks to their ability to influence (both positively and negative) child and women's nutrition-related practices.

Bear in mind that the risk of undernutrition isn't related to physiological vulnerability only. Groups within the population can be at risk of undernutrition due to geographical vulnerability (displaced populations, inaccessible populations) as well as political vulnerability (minority groups).[48]

Emergency nutrition interventions especially require more detailed considerations concerning targeting. Use the selected resources listed at the end of this toolkit to access the know-how you need.

Guidance for **anthropometric surveys,** which may be required for the targeting of specific households, is provided below in the 'Anthropometric Indicators for the M&E' chapter.

4.2 RECOMMENDATIONS FOR FIELD-BASED ASSESSMENT

This section will help you to prepare for a field-based assessment in the area of your operation. It expects that you already collected the data from a review described in the 'Understanding (under)nutrition in your area' chapter. Conducting this review and using its results is obligatory (especially in situations where your employees have limited experience in nutrition programming) and you shouldn't proceed with a field-level assessment until such a review is completed.[4]

[4] The only exception is a situation when due to sudden disaster, PIN starts working in a new country and it isn't feasible to conduct full-scale review. In this case, reduce its scale and conduct a rapid assessment only.

ASSESSMENTS FOR NUTRITION-SENSITIVE PROJECTS DURING EMERGENCIES

During emergencies, PIN provides various kinds of assistance that aim to meet the immediate needs of affected populations. As was described in chapter 3.1, although the majority of the aid doesn't specifically focus on nutrition, it has excellent potential to be provided in a way that **protects people's nutrition status** (e.g. by providing special cash or in-kind assistance to pregnant women and families with children under 2). Such an approach is easy to implement and needs to be a **standard part of PIN's emergency responses**. An assessment for such response should include:

INFORMATION YOU NEED TO KNOW	SOURCES OF INFORMATION
STATISTICS AND DATA FOR YOUR INDICATORS ▪ number of at-risk people (pregnant women, children under 2) in your target area, their locations and accessibility ▪ affected population's access to their most urgent needs (water and sanitation facilities, food and non-food items…)	▪ Government, UN agencies, NGOs' reports and coordination meetings ▪ reports from health centres (e.g. concerning levels of diarrheal diseases) ▪ rapid assessments conducted by PIN
PRIORITIES OF YOUR TARGET GROUPS ▪ conduct rapid assessment among groups most vulnerable to undernutrition and identify what can be done to sustain or improve their nutrition intake and reduce the risk of infections (causing diarrhoea etc.)	▪ focus group discussions (FGD) with target groups* ▪ consultations with local health care providers
ONGOING & PLANNED RESPONSES ▪ identify Government and NGOs' ongoing and planned responses to a) assess opportunities for cooperation and mutual complementarily (e.g. in the same area PIN provides nutrition-sensitive WASH and other NGO cash/ food transfers aid); b) define target areas and avoid overlapping; c) gain local stakeholders' support	▪ provincial/ district health departments ▪ local health centres (HC) ▪ NGO networks ▪ community health workers

** Try to ensure that FGDs truly represent the target group and identify potential sources of selection bias as much as possible. For example, are focus group participants wealthier than non-participants (e.g. they have free time to participate)? Poorer than non-participants (e.g. they are unemployed)? If you select mothers of children under-two as participants, are you missing the input of other important caregivers such as grandmothers or older siblings? How are the nutrition-related behaviours of participants likely to be different from non-participants?*

ASSESSMENTS FOR NUTRITION PROJECTS ADRESSING THE CAUSES OF UNDERNUTRITION

Projects addressing one or more causes of undernutrition are fairly complex and require a good understanding of the local context. Reviews conducted by USAID, research and development agencies provide strong evidence showing that a large number of nutrition **projects have failed because they didn't make enough effort to understand the factors which influence their results**. The following checklist of what needs to be assessed will help you to minimize such risk.

The checklist doesn't mean that you need to collect absolutely all listed information – a CMAM project may require different data than a nutrition-sensitive WASH project. You can therefore tailor the checklist to your project's needs (while making sure that you didn't omit to assess any important information). **Always make sufficient investment into understanding local perceptions, practices and constraints concerning mother and child nutrition** (see box below).

INFORMATION YOU NEED TO KNOW	SOURCES OF INFORMATION
EXISTING LOCAL LEVEL STATISTICS ▪ collect key undernutrition indicators to realize its scale (consider undernutrition's seasonality), justify your intervention and select target area ▪ number of at-risk people (PLW, children under 2) in your target area ▪ depending on your capacity and the project focus, collect also data on poverty, WASH, agricultural production etc.	▪ provincial/ district Government departments ▪ if statistics are missing, get approx. data and recommendations from local health authorities and NGOs
ONGOING & PLANNED (NUTRITION) INTERVENTIONS ▪ identify Government and NGOs' ongoing and planned nutrition activities to a) assess opportunities for cooperation; b) help to define target areas; c) avoid overlap and ensure complementarily; d) gain local (health) authorities' support	▪ Dep. of Health, Dep. of Women Affairs ▪ NGO networks ▪ local health centres (HC) ▪ community health workers
SERVICES & CAPACITY OF LOCAL LEVEL HEALTH CARE PROVIDERS ▪ identify a) what support local health centres and community health workers provide and b) what capacity they have, especially: - What kind of (if any) system for treatment of severely undernourished	▪ district level health departments ▪ local HCs (chiefs, midwives, nurses) ▪ community health workers ▪ NGOs and others working with HCs

cases exists, how and to what extent does it work? - To what extent are material supplies available (e.g. therapeutic food, antibiotics, Oral Rehydration Therapy (ORT) and zinc)? - What is the level of technical skills of HC staff (related to counselling skills on (under)nutrition, identification and treatment of undernutrition)? - Do/can a) HC staff and/ or b) community health workers conduct community promotion of good nutrition? If so, how and how often? - What could help them to upscale/ improve their existing work?	and CHWs *Note: even if your project focuses purely on prevention, your staff will (e.g. during growth monitoring) encounter undernourished cases and they need to be able to recommend options for treatment*
PERCEPTIONS, PRACTICES AND CONSTRAINTS IN MOTHER & CHILD NUTRITION ▪ Nutrition projects often make the mistake of designing nutrition promotion sessions that are based only on NGO staffs' understanding of good nutrition and childcare. While these campaigns often look nice, they rarely work. The main precondition for a behavioural-change focused project is to understand the existing perceptions, practices and knowledge of our target groups and then promote the positive ones and discourage those which harm. ▪ Examples of topics to assess: - People's understanding of undernutrition, its symptoms and causes; - Existing beliefs about child health (incl. diet, diseases...); - Health and nutrition care and feeding practices; - Different HHs members' involvement in child care and decisions about diet; - Existing knowledge and practice about WASH etc; - Periods of day/ year when caregivers have time to join project activities.	▪ formative study conducted preferably by your team or a consultant ▪ interviews with NGOs with experience in work similar to what you're planning to do ▪ as an example, see Terms of Reference, questions and report of PIN Cambodia's 2012 formative survey (on ELO)
DATA RELATED TO YOUR INDICATORS ▪ A lack of resources may make it impossible to collect baseline data, however, if you want to make sure that your targets for specific nutrition indicators are realistic, consider at least using a smaller sample or use data from your own/ other NGOs' projects. ▪ For specific interventions-related indicators, see chapters 2.2 and 4	▪ data from authorities/ NGOs/ UN agencies ▪ anthropometric surveys (see 4.6) ▪ health facility data (if available) ▪ baseline studies ▪ KAP surveys

WHY SHOULD WE INVEST IN FORMATIVE RESEARCH?

Dietary and care practices are embedded in people's beliefs and habits, and convincing them to change behaviour requires time. Importantly, people have to understand and agree with the benefits of adopting a new behaviour. It is therefore crucial to have a thorough understanding of ***why people behave the way they do and what they are willing to change****.*

Formative research consists of assessing the behaviours, attitudes and practices of a community, and understanding the target group's perspective, which influences their behaviours and determines the best ways to reach them.[49] *Proper understanding of the existing* ***positive practices of local caretakers which you can help to promote*** *as well as* ***harmful beliefs and practices which you help to discourage*** *is essential for the success of your behavioural change activities.*

The following example from PIN's study in Cambodia (2012) helped to identify several harmful practices and misconceptions whose understanding was essential in designing the new project's strategy:

PERCEPTIONS AND PRACTICES	RISKS
▪ *'There are children in the village who are too skinny but their parents are not poor so maybe they have a disease. It cannot be because of food because they eat enough rice.'* ▪ *'If the baby is bigger it makes giving birth difficult, so it is easier to make the baby small when it is in the stomach and then feed the baby."* ▪ *'HC showed me picture with foods which are good for my baby but I don't use it because I cannot put everything from the picture to one meal.'* ▪ *'Imported vegetables are better than those from our village.'*	▪ *Symptoms of undernutrition are attributed to an 'unknown disease' rather than child's diet.* ▪ *Low birth weight puts the child at increased risk of life-long physical & cognitive damage, and in the worst cases death.* ▪ *IEC materials which are clear to you are often misunderstood by the caretakers and don't have the effect you intended.* ▪ *Although people can diversify their diet, they don't do it because they expect it to be too expensive.*

4.3 RECOMMENDATIONS FOR BUDGETING

Nutrition projects generally require similar resources to other emergency or development projects but there are several expenses that you should carefully consider and budget accordingly:

- **Staff costs** – CMAM-based projects, projects addressing main causes of undernutrition as well as sector-specific nutrition-sensitive projects require intensive and often longer-term work with individual families. Make sure that you allocate a sufficient number of staff otherwise they will be forced to implement many activities at low quality. Include also (into direct costs) incentives for community health volunteers and health centres' staff (however, think also about the sustainability of the incentive scheme you propose).
- **Staff training** – if your staff don't have sufficient experience in implementing nutrition projects (promotion of good nutrition, conducting growth monitoring etc.), you'll need to invest in training and coaching, possibly by hiring external trainers from experienced NGOs, Government or consultants.
- **Logistics** – especially CMAM is logistically demanding as it requires ensuring supply channels of RUTF and other commodities, supervision, administration and communication with a large number of community health volunteers and other costs – therefore budget generously.
- **Costs of materials** distributed to the communities – inputs like RUTF are relatively expensive, so budget accordingly.
- **IEC materials** – if appropriate IEC materials aren't available, their production takes time and financial resources.
- **KAP/ baseline/ evaluations** – subcontracting KAP and other studies isn't cheap, so budget accordingly.
- **External consultancies** – spending a few thousand USD on 'technical assistance' provided by an experienced in-country consultant or PIN's Senior Advisor for Nutrition can help you to enhance the quality of the project design, your M&E system and implementation process.
- **Visibility and reporting** – interest in nutrition will be growing and PIN needs to ensure that its work is visible and accountable, its results are known and best-practices well documented for replication.

4.4 RECOMMENDATIONS FOR PROJECT DESIGN & IMPLEMENTATION

There are dozens of different ways for addressing undernutrition and it isn't within the scope of this toolkit to advise on the implementation of each type of nutrition-related intervention. This section therefore focuses on evidence-based recommendations which can be applied across different projects and help to increase their quality:

- **GET THE TIMING RIGHT**: Timing is one of the key factors influencing the effectiveness of your project. There are several issues related to timing:
  1. **Project duration** - projects aiming to reduce and prevent the prevalence of undernutrition by addressing its causes need to be implemented over at least a three and half year period (preferably 4-5 years), especially due to the essential but demanding component: focus on changing people's beliefs and practices.
  2. **Seasonality** – needs to be considered from several main perspectives:
     - **Achieving maximum impact** - most of the world's acute hunger occurs not in conflicts and natural disasters but in the annually recurring hunger seasons.[50] Assess the 'hunger seasonality' in your area of operation and consider whether your intervention can be tailored to tackle the period when people are most food insecure (and become more undernourished), for example by providing people with food and income generating opportunities (either externally driven like cash for work or self-managed like homestead food production).
     - **Designing time frame** – during certain months in a year, roads are impassable due to heavy rain, people are busy with planting or harvesting, large populations migrate for work, or other factors hamper people's participation in the project. Whenever possible, when deciding about projects start and its overall time frame, make sure that during these months you don't have any intensive community work planned and focus on less community-intensive activities (e.g. training of key stakeholders).
     - **Measuring project's results** - objective measurement can become difficult if not impossible if seasonality isn't considered – see below in M&E chapter.
  3. **Scheduling project activities** – whenever possible, adjust the timing of your community events to the preferences of your target group, rather than to the official working hours of your office. More people will participate and you'll be able to achieve better results.

- **SET REALISTIC INDICATORS:** Indicators that are too general, hard to measure or unrealistically ambitious can completely ruin your M&E system, so be sure to pay enough attention to their design. For examples of **indicators check Chapters 2.2 and 3**; for guidance on design of indicators check PIN's Result-based Monitoring Guide; and if any further support is required, feel free to contact PIN's Advisors.

  Be realistic about what your intervention can achieve. For example, a simple home-gardening project may diversify children's diets but if not complemented by other support it is unlikely that it will directly reduce the percentage of undernourished children. As the example below shows, even seemingly more straightforward links like increased access to food leading to improved nutritional intake, are influenced by a number of factors: when only a small part of the production is used for consumption by women and children, when feeding practices are not optimal or when a child's infection leads to major losses of nutrient intake, you may not be able to reach the targets you intended.[51] This is why complementary activities like counselling are important for reaching your objectives.

- **INTEGRATE MORE SECTORS:** Nutrition programming integrating more sectors and addressing more causes of undernutrition is significantly more likely to show a positive impact on the nutritional status of its target group.

- **USE EXISTING RESOURCES:** In all countries where PIN works there are dozens of organizations that may have implemented nutrition projects similar to the one you're considering. This represents an excellent opportunity as it means that there may be many IEC materials and curriculums developed, people trained, failures and best practices generated (and hopefully recorded) and other useful resources available. It takes time to find them, but building on existing best practices and resources instead of reinventing the wheel is certainly a more cost-effective way.

- **REINFORCE AND COMPLEMENT EXISTING WORK:** As was described earlier, successful nutrition programs are relatively complex, require good expertise and a long-term approach. Instead of starting from scratch, you may consider complementing an existing program or strategy of larger stakeholders. For example, if your country of operation has developed a complementary feeding campaign with IEC materials and a clear approach available, consider whether you can take responsibility for its implementation in your area of operation. Similarly, if another NGO (e.g. an Alliance2015 partner) runs a nutrition program, discuss your opportunities for cooperation. You'll often manage to access good know-how and achieve better impact than if you work on your own.

- **INVEST IN UNDERSTANDING:** As was explained earlier, addressing the behavioural determinants of undernutrition is largely about encouraging positive practices and beliefs and changing those which can cause harm. In order to achieve this, we need to understand why people behave the way they do and what they're willing to change. Knowledge, attitudes and practices should be assessed during the project design stage (e.g. through formative research) but if your time is too short, include such an assessment in the time plan and budget of your project implementation period. In emergencies you are of course not expected to spend weeks on assessments, however, rapid assessment of people's preferences, practices and suggestions needs to be part of any sensible response.

THE POWER OF POSITIVE DEVIANCE

Irrespective of whether you approach nutrition from a WASH, agriculture or health perspective, achieving much needed behavioural change is among the main challenges. PIN therefore recommends engaging "positive deviants" – local community members who are already following the practices we intend to promote and have the ability to motivate others to follow their example. Specific advice on the use of the Positive Deviance Approach (PDA) is widely available on the Internet (try www.positivedeviance.org), so go ahead and explore!

- **CONSIDER GENDER:** The different roles of men and women in ensuring good nutrition for their family members have significant implications for the design and implementation of nutrition projects. While women are often the primary caregivers, they may also have less access to required resources and opportunities than men. Nutrition projects may therefore aim to empower women by offering them nutrition counselling, homestead food production support or raising awareness on hygiene. While this is certainly a good way to go in improving nutrition, the role of men has often been ignored or underestimated. In many societies, practices related to diet, spending on food and health care, as well as allocation of time spent on childcare are significantly influenced by men or senior women. Projects

that focus only on mothers and ignore the role of other family members run the risk of failing to secure support for new behaviours among husbands, grandmothers, and other influential members of the household and secondary caregivers. Therefore, make maximum effort to empower women while **not ignoring the role and influence the men have in decisions influencing the care and nutrition** of children and pregnant women.

When deciding about staffing for your project implementation team, consider also whether, for example, women will accept advice on good nutrition or breastfeeding from your male staff or whether men would take seriously a younger female staff when talking about men's childcare responsibilities.

- **TAKE INTO ACCOUNT SPECIAL NEEDS:** Both in the development context and in emergencies, there are certain groups within the population that are more vulnerable and require increased attention (children, pregnant and lactating women, people living with HIV/AIDS, people with disabilities, elderly people). Not considering their special needs may mean that these most vulnerable groups will be completely left out of your assistance or will not receive the support they need. Check recommended resources for more information and guidance.

- **DO NO HARM:** A nutrition-oriented project may have an unintended negative impact on the care practices, food security or nutritional status of men and women. For example, if your project supports women to produce more food for improving their income and access to food, increased labour requirements may mean that women have less time to take care of their young children. Consider therefore similar risks and consult with your target groups.

- **THINK OUTSIDE OF THE BOX:** Think about and assess what is most significantly influencing people's nutritional and childcare practices. If you, for example, realize that women cannot spend much time caring for young children because they're too busy, check whether time-saving technologies such as fuel-efficient stoves or low-cost irrigation schemes would enable women to spend more time on childcare.

- **CONSULT RESOURCE PERSONS AT HEADQUARTERS:** PIN's headquarters staff are ready to consult with you and provide advice on the project's implementation strategy, key indicators, setting up an M&E system or provide project documentation of PIN's existing nutrition projects. Contact your Desk Officer first and if required, relevant Senior Advisor/ Resource Person.

4.5 RECOMMENDATIONS FOR MONITORING AND EVALUATION (M&E)

This chapter provides practical recommendations for conducting baseline studies, ensuring results-oriented monitoring and preparing evaluations of nutrition-oriented projects (especially in the development context; for emergencies see recommended resources below). It should be read together with an M&E Guide providing you with methodological guidance. The following recommendations are based on PIN's existing experience and available best practices from M&E of nutrition projects:

- **LISTEN** – There is a tendency for M&E approaches in the nutrition sector to focus heavily on quantitative data, often missing the importance of the opinions of the people, especially mothers and children, which the interventions are targeting. Most nutrition interventions are closely connected to the way people live their lives: how they access food, how food is shared at household level, the way children are fed and cared for. If the values, perceptions, views and judgements of intended beneficiaries are not considered and incorporated into project design, and it's M&E, there is a risk that **nutrition project may be theoretically ideal but practically off the mark**, limiting quality and effectiveness.[52]

- **GETTING LESS MAY BRING MORE –** One of the reasons why M&E systems are sometime too time consuming and why their analysis is demanding and not always accurate is simply because they collect too much or the wrong type of data. Data collectors often ask questions that sound interesting but have limited value for ensuring the projects' quality. Focus therefore primarily on **data related to the logical framework's indicators** and if you can clearly justify its benefits, focus also on a minimum amount of other data. Complement with a well-focused, qualitative participatory assessment focusing on the **opinions of your target groups**. When conducting the baseline, start with a small pilot, review its results, make a plan on how to analyse the data and only then scale up.

- **KEEP IT SIMPLE** - Monitoring systems are often made too complex for the field workers or other data collectors to understand and implement, compromising the quality and usability of the data collected.[53]

- **CONSIDER SEASONALITY –** A person's nutritional status depends (among other factors) on their access to food, which, especially in rural areas, is closely connected to the annually recurring hunger seasons. Comparing data from a baseline conducted just after the harvest and from an evaluation conducted just before the harvest will tell you very little about the results of your project as you're comparing 2 different situations. Therefore, even if it means postponing the start of your project or asking for a non-cost extension, **your baseline and endline must be conducted at the same periods of the year**, otherwise your evaluation will not provide objective data.

- **USE CONTROL GROUPS –** Since a person's nutritional status is influenced by many factors that are often outside of our control (e.g. weather conditions influencing harvest), it **may not be possible to attribute identified positive or negative changes to the project**. Using control groups means that you collect baseline and endline data not only from your target communities but also from communities with very similar characteristics where you don't provide any assistance. Control groups are used when measuring impact is required and especially during prevention-oriented interventions. Since this approach often raises ethical concerns, it is essential that **both the project and control groups benefit from the process**. For example, an anthropometric survey could be conducted by health centre staff and accompanied by free nutrition counselling and referrals to the health facilities. In this way, data collection isn't just a one-sided process benefiting only our interests.

- **SELECT THE RIGHT SAMPLE –** For information on sampling, read PIN's Result-based Monitoring Guide, recommended resources below or sample size calculator at www.surveysystem.com/sscalc.htm

- **DISAGREGATE DATA BY SEX AND AGE –** Using several categories will help you to better understand the impact of your projects on girls and boys of different age groups (and also to what extent you have addressed beliefs such as 'girls will do less work than boys so they can be breastfed for one year only'.

- **DOCUMENT THE ENTIRE PROCESS** – One of the main weaknesses of the baseline studies is fairly simple – poor documentation of the process/ methodology leads to subsequent inability to later replicate the study in the same way. Without **detailed and precise documentation of the way in which the baseline or evaluation study was conducted**, several years later it is impossible for an evaluator to collect the same type of data in the same way, which would enable objective comparison. It is therefore **mandatory that your baseline and evaluation reports archived in ELO include attachments containing**:
  a) *Description of used methodology*: detailed and precise description of the methodology used;
  b) *Exact list of people included in the study*: a database including identification data of the respondents incl. their responses to specific questions is extremely valuable as it allows very detailed comparisons; if this isn't possible, provide at least a list of all respondents incl. their contact details (district, village etc.);
  c) *List of other stakeholders consulted*: provide their full names, positions (if applicable) and contact details.

  Preparing this takes more time but remember that the entire baseline will be useless if later during evaluation it isn't possible to replicate it – it is therefore worth investing an extra day in proper documentation.

- **MONITOR RESULTS** - While traditional monitoring focuses on spent resources and implemented activities, results-based monitoring emphasizes the need to **monitor the outcomes and impact of the project**. In a nutrition project, this may mean, for example, assessing whether people have changed their nutritional and child care practices or whether undernourished children admitted for treatment are recovering (and if not, why and what can be done about it). While evaluations often identify challenges and opportunities only after the project activities have been completed and not much can be done to address them, proper monitoring enables you to make improvements in your intervention in 'real time'. Especially in emergencies, **proper monitoring can save lives** and therefore shouldn't be perceived just as headquarters' or donors' burdensome requirement.

- Emergency Nutrition Network (2011) *Harmonized Training Package (HTP) 20: Monitoring and Evaluation: Technical Notes*, 40 p. – an excellent resource for M&E in emergencies
- Sphere Project (2011) *Sphere Handbook,* 393 p. – essential guidance in emergencies
- WHO (2010) *Indicators for assessing infant and young child feeding practices*, 12 p.
- see *sector-specific guidance* in the chapters above + if required, contact *PIN's Advisor*

4.6 MEASURING UNDERNUTRITION[54]

Undernutrition is typically measured in three ways: anthropometry, clinical signs and biochemical tests.

ANTHROPOMETRY

Anthropometry is the **use of body measurements** such as weight, height and mid-upper arm circumference (MUAC), in combination with age and sex, to measure growth or failure to grow. It can be used to assess wasting, stunting and underweight in children 6-60 months (infants below 6 months are usually not measured anthropometrically) but cannot measure micronutrient undernutrition. It is important to note that an individual can be classified with more than one form of growth failure at the same time. A child that is suffering from severe acute malnutrition may be both severely wasted and stunted. In emergencies, the main focus is on wasting, due to its link to morbidity and mortality.

Anthropometric indicators can be used for **individual and population assessments** such as longer-term growth monitoring and promotion (use of WFA); quick and large scale nutrition screening (use of MUAC); admission and discharge criteria into targeted feeding programmes (use of WFH and for specific groups BMI) etc.

OVERVIEW: USING ANTHROPOMETRY AND CLINICAL SIGNS	
Target Group	**Identify undernutrition by:**
Infants below 6 months	weight for length (WFL)
	clinical signs
Children 6-60 months	weight for length (WFL) for children 6-24 months and weight for height (WFH) for 24-59 months
	clinical signs
	MUAC
	weight for age (WFA)
	height for age (HFA) – *for stunting*
Children and adolescents 6-19 years	Body Mass Index (BMI)
	clinical signs
Adults	Body Mass Index (BMI)
	MUAC
	clinical signs
Pregnant women	MUAC
	Weight gain during pregnancy (compared against international or local standards)
Elderly people	Body Mass Index (BMI)
	clinical signs

The **main anthropometric indicators** are:

➢ Weight for Length (WFL), Weight for Height (WFH)

WFL/ WFH is used to assess wasting. It reveals how a child's weight compares to the weight of a child of the same height and sex in the 2006 WHO Growth Standards and in doing so **reflects a child's current nutritional status**. It is particularly responsive to rapid changes in nutrition, food security or health and therefore it is the **preferred indicator for nutrition surveys in emergencies**. WFL/ WFH is also the predominant indicator used by the Community Management of Acute Malnutrition (CMAM). To calculate this indicator, height measurements are taken for children 24 months and older (WFH), while recumbent length measurements are taken for children 0 up to 24 months of age (WFL).

For conducting nutritional surveys in emergencies, PIN recommends using the SMART Methodology which provides you with step-by-step guidance. At www.smartmethodology.org you'll find the SMART manual with basic tools, training package for your staff and free-to-download software.

WHO Growth Standards

Anthropometric surveys help us to recognize how far from a sample of healthy children the children we assess are. Data used to develop the 2006 WHO Growth Standards (GS) involving 8,000 children from 6 different countries have shown that under optimal circumstances, children from all over the world grow in a broadly similar pattern and to within the same height and weight range given the same conditions. This sample of 8,000 children is called 'reference population'. Anthropometric surveys use "Z-scores" (also known as standard deviation scores or 'SD') as a measure of the distance between the measured child's value and the average defined by the reference population. For example, in the case of WFH measurement, a negative WFH Z-score means that the measurement is lower than the average weight of a child of the same height in the WHO GS (the reference population). Z-score values are generated by age and sex specific tables or free software (see below). Z-score values are the most widespread and accepted system for reporting undernutrition rates. Please note that some countries have their own national growth reference population data which are, however, not appropriate to use in emergencies.

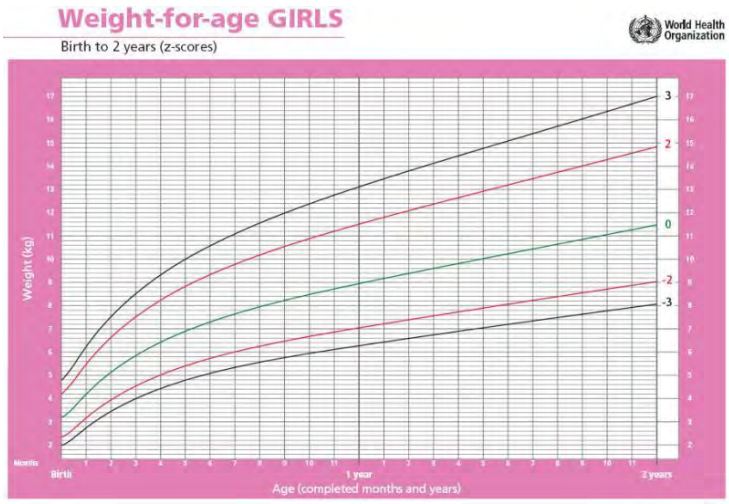
➢ MUAC

MUAC measures the circumference of a child's mid-upper arm. It is a proxy measure of nutrient reserves in muscle and fat and serves as an indicator of wasting. It is relatively easy to measure and is a good **predictor of risk of mortality**. MUAC is used for **nutrition screening** when a large number of children need to be quickly identified for acute malnutrition.

Be aware that MUAC has a **bias towards selecting younger rather than older children**, who naturally have a smaller arm circumference measurement. The Cambodia Anthropometric Survey (2008) using WFH reported 8.9% children being wasted while MUAC reported only 3.8%. In this case, if MUAC was the only indicator, 57% of children identified by WFH as wasted would have been left out. This risk can be addressed by using MUAC adjusted for age which in the Cambodia case produced similar results as WFH. Use of MUAC-for-age unfortunately isn't very common as especially in emergencies the need to quickly screen a large number of children by using methods suitable for low-skilled community workers outweighs this drawback.

MUAC is also recommended as the **preferred nutritional index for pregnant women**, since it isn't significantly changed by woman's pregnancy. However, compared to WFH, MUAC size doesn't change rapidly when undernourished children are treated. It is therefore **less helpful in measuring recovery or improvement of nutritional status** over a limited period of time (therefore don't use it as the main indicator for your results-based M&E system).

➢ Weight for Age (WFA)



WFA is used to assess **underweight**. It reveals how a child's weight compares to the weight of a child of the same age and sex in the 2006 WHO Growth Standards. WFA is frequently used in **growth monitoring and promotion (GMP) programmes, which measure child growth routinely,** to detect growth progress or failure. GMP is a simple and powerful tool to monitor the growth of children, detect growth faltering early (before it is too late), assess child growth and make a child's growth pattern **visible to parents and community workers**, and encourage parents and community members to take appropriate and doable actions to improve a child's growth. GMP includes measuring a child's weight (in a health facility or the community), plotting the child's weight on a growth chart to make the growth pattern visible, connecting the points from two or more measurements with a straight line that allows us to better observe trends, and where growth is abnormal, caregivers and support persons taking action.

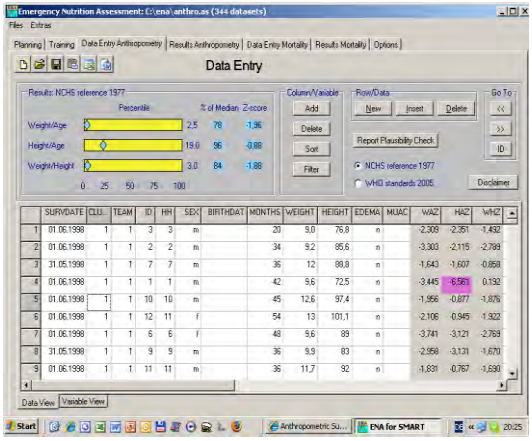
Underweight, or low weight for age, can be difficult to interpret because we don't know whether the child is stunted or wasted. For this reason, when a child is found to be underweight, a height measurement (Weight for Height) should be taken to determine the cause of the problem and appropriate treatment. Growth monitoring should never be separated from growth promotion. Measuring a child's weight alone and neglecting counselling and problem-solving with caregivers will not yield improvements in child nutritional status. GMP is a long-term strategy to improving child nutrition and may not be appropriate for emergency situations.

➢ Height for Age (HFA)

Height for age (HFA) is a measure of retarded linear growth or **stunting**. Stunting is considered an indicator of past undernutrition in children older than 2 years of age, but can often signify recent or current malnutrition in children younger than 2 years of age. HFA reveals how a child's height compares to the height of a child of the same age and sex in the 2006 WHO Growth Standards. HFA is relevant in chronic emergencies and long-term programs focusing on prevention and treatment of undernutrition. HFA isn't appropriate for short-term or emergency interventions because it is not a good predictor of mortality, particularly for older children.

➢ Body Mass Index (BMI)

BMI (calculated BMI= weight (kg) / height $(m)^2$) is the most useful measure of undernutrition in adults. It serves as an indicator of weight deficit in relation to height. BMI is not compared to a reference population, but is classified directly based on specific cut-off points (MAM is classified as <17 to ≥16kg/m^2 and SAM as < 16kg/m^2). BMI cannot be used for pregnant women since the weight will be related to the growth of the baby and changes in the body related to pregnancy.



SOFTWARE FOR ANTHROPOMETRIC SURVEYS

Anthropometric surveys collect a large number of quantitative data which often needs to be precisely analysed in a short time. To make this easier, PIN recommends using one of the following free-to-download software:

WHO Anthro software consists of three modules: an anthropometric calculator for assessing individual child's nutritional status; an individual assessment for monitoring child's growth over time; and a module for nutritional surveys. Available from www.who.int/childgrowth/software/en/

Emergency Nutrition Assessment (ENA) software (its old name is NutriSurvey) developed by SMART initiative aims to make nutrition and mortality surveys and assessments in emergency situations and for surveillance purposes as easy and reliable as possible. Software, guidance and training materials available from www.smartmethodology.org

CLINICAL ASSESSMENT

A clinical assessment involves assessing the physical presentation of signs and symptoms of malnutrition. In the case of acute malnutrition, this is especially visible as wasting and bilateral oedema (fluid retention on both sides of the body). To assess whether a child has a **bilateral oedema**, use your thumbs to press gently for a few seconds on the upper top side of each foot. If a dent remains when you remove your thumb, the child has oedema (use Google to see what this looks like). It is important to test both feet; if the pitting is not bilateral, the oedema is not of nutritional origin. The clinical sign of bilateral oedema is critical complementary information to anthropometric information because it affects the weight measures. Signs of **visible wasting** include a thin "old man" face, loose skin around the buttocks that look like "baggy pants", and prominent ribs.

Micronutrient malnutrition is a significant cause of morbidity and mortality both in emergencies and in non-emergency contexts. **Iron deficiency anaemia, iodine and vitamin A deficiencies** are the most common micronutrient disorders. Their symptoms are less visible than the symptoms of acute malnutrition and addressing micronutrient deficiencies often unfortunately isn't at the top of relief and development agencies' agenda. This is, however, a mistake as **micronutrient interventions are equally important to interventions addressing acute and chronic malnutrition**. For a description of specific deficiencies, their symptoms and at-risk groups read: Emergency Nutrition Network (2011) *HTP 4: Micronutrient malnutrition* or Helen Keller International (1999) *Nutrition Reference Manual*. Note that assessments of micronutrient deficiencies require staff with medical training.

BIOCHEMICAL TESTS

Biochemical assessments involve assessing specific components of blood and urine samples of an individual in order to measure specific aspects of an individual's metabolism. Such assessments aren't within the mandate and competencies of PIN's programming and the best is therefore to rely on secondary data (studies published by MoH, UNICEF).

LEARN MORE:

- SMART's *Standardized Training Package Videos* at www.smartmethodology.org
- Emergency Nutrition Network (2011)
  - *Harmonized Training Package (HTP) 6: Measuring malnutrition: Individual assessment*
  - *Harmonized Training Package (HTP) 4: Micronutrient malnutrition*
- Chapter 3 from UNICEF's *on-line training* at www.unicef.org/nutrition/training
- WHO's *Training Course on Child Growth Assessment* at www.who.int/childgrowth/training/en

ANNEX I: KEY TERMS YOU NEED TO KNOW

The following two pages will help you to get a quick understanding of the key terms you should be familiar with[55]:

Acute malnutrition is characterised by wasting, but also includes kwashiorkor (nutritional oedema). It results from recent rapid weight loss, or a failure to gain weight over a short period of time (important in growing children). Acute malnutrition can be moderate (MAM) or severe (SAM). In combination it is global acute malnutrition (GAM). MAM is defined as wasting < – 2 Z scores of the median weight-for-height of the reference population; SAM is < – 3 Z scores and/or nutritional oedema.

Adult undernutrition: thinness is assessed using body mass index (BMI) — weight divided by the square of height (kg/m^2). BMI < 18.5 denotes moderate undernutrition, and < 16 severe.

Anaemia may be caused by lack of iron, folate or vitamin B12. It is difficult to diagnose accurately from clinical signs which include pallor, tiredness, headaches and breathlessness. Anaemia is estimated to contribute to more than 115,000 maternal deaths and 591,000 perinatal deaths.

Anthropometry is human body measurement. Anthropometric indices can be single measures, such as mid-upper arm circumference, or combinations, such as weight and height. They are taken as proxy indicators of nutritional status.

BMI: see adult undernutrition.

Chronic undernutrition: see stunting.

CMAM, or community-based management of acute malnutrition, is a cost-effective and efficient method for treating severe (and moderate) cases of acute malnutrition using ready-to-use foods. In-patient care is required for cases with medical complications; otherwise malnourished children (and adults) are supported through community-based systems.

CTC, or community based therapeutic care, involves treating as many cases as possible of severe acute malnutrition, without clinical symptoms, as outpatients using ready-to-use therapeutic foods (RUTFs).

Complementary feeding is the process starting when breast milk alone or infant formula alone is no longer sufficient to meet the nutritional requirements of an infant, and therefore other foods and liquids are needed along with breast milk or a breast milk substitute (breast milk is always superior). The target range for complementary feeding is 6–23 months. Children often become undernourished during this period because the introduced complementary foods are not adequate to their nutrition needs.

Diarrheal diseases cause diarrhoea (runny stools, with or without blood). The three most deadly diseases are: cholera, bacillary dysentery and typhoid.

Exclusive breastfeeding describes an infant feeding practice where only breast milk is given — no other liquids or solids. Exclusive breastfeeding is recommended for the first six months of life for all infants in all situations.

Growth Monitoring and Promotion (GMP) involves the regular individual measurement of a child's growth (weight for age) and the plotting of results on a 'road to health' chart. The intention is to then use the visual depiction of a child's growth as a basis for dialogue with the mother/carer (hence the use of the term growth monitoring and promotion (GMP).

Infant mortality rate is defined as the number of deaths of infants (aged less than 12 months) per 1000 live births in a given population.

Infant and Young Child Feeding (IYCF) describes the feeding practices for infants (aged less than 12 months) and young children (aged from 12 to 23 months).

Kwashiorkor is a form of severe acute malnutrition, characterized by bilateral pitting oedema. Low weight-for-height may not be observed in cases of kwashiorkor where wasting is masked.

Malnutrition is a physical condition related to the body's use of nutrients. There are two forms of malnutrition: undernutrition and overnutrition (obesity). This toolkit focuses on undernutrition.

Maternal undernutrition: BMI of less than 18.5 kg/m^2. Prevalence ranges from 10% to 19% in most countries. Above 20%, maternal undernutrition is serious; 40% is a critical situation.

Micronutrient deficiencies are the form of undernutrition related to vitamins and minerals. Deficiencies of iron, iodine, vitamin A and zinc are amongst the top 10 leading causes of death through disease in developing countries. Other deficiencies more specific to emergencies include thiamine, vitamin B, niacin and vitamin C deficiencies.

MUAC, or mid-upper arm circumference, is an anthropometric measurement used to assess nutritional status in children and adults, especially in emergencies.

Morbidity is the prevalence or incidence of disease.

Mortality, or death, is usually expressed as a rate in a population, specified for a particular group of people, such as infants, mothers during/after birth or under-5 children. Crude mortality rate encompasses an entire population group.

Stunting, or low height-for-age, is an anthropometric measure of linear growth that indicates chronic restriction of a child's potential growth and is associated with deficits in cognitive development, poor performance in school and reduced productivity in adulthood. Stunting is denoted as < –2 Z scores of the median height-for-age according to WHO growth standards for children.

Under-5 mortality rate (U5MR) is the probability of a child dying before reaching the age of 5. U5MR is, strictly speaking, not a rate (i.e. the number of deaths divided by the number of population at risk during a certain period of time) but a probability of death derived from a life table and expressed as rate per 1000 live births.

Underweight in children is defined as < –2 Z scores of the median weight-for-age of WHO growth standards. Severe underweight is < – 3 Z scores. It includes children with low weight-for-height (wasting) or low height-for-age (stunting). Growth charts based on weight-for-age are used for growth monitoring in health programs. Weight-for-age is less useful in emergencies (is too time consuming), but can act as a proxy indicator for undernutrition if data on acute undernutrition are not available.

Wasting (or 'marasmus') describes acute undernutrition characterized by low bodyweight compared to height (i.e. < – 2 Z scores of the median weight-for-height according to WHO growth standards). Severe wasting is defined as a weight-for-height < – 3 Z scores of the median of WHO standards. Weight-for-height is recommended for assessments of recent nutrition, and is especially important for assessments of nutrition-related humanitarian emergencies.

ANNEX II: RECOMMENDED RESOURCES

AUTHOR & NAME	COMMENT	ACCESS FROM
E-LEARNING		
PIN's nutrition and other e-learning	▪ introduces nutrition topics, essential for all program staff	pinf.talentlms.com
UNICEF, Nutrition in Emergencies	▪ very useful for staff of relief and development projects ▪ focuses on: types and measuring of undernutrition; micronutrients; infant feeding in emergencies etc.	www.unicef.org/nutrition/training
USAID Global Health E-Learning Centre	▪ variety of short, good quality courses on nutrition, diarrheal diseases and other global health issues	www.globalhealthlearning.org/courses
PRACTICAL PUBLICATIONS & GUIDELINES		
Save the Children (2012) Tackling child malnutrition	▪ excellent introduction to the topic, explains key direct interventions incl. food fortification etc.	ELO, Google
Helen Keller (1999) Nutrition Reference Manual	▪ easy to understand basic of nutrition and anthropometry ▪ infant and young child feeding, micronutrients	ELO, Google
UNICEF's IYCF Counselling Package	▪ useful for training staff, CHWs; easily adaptable	click here
ACF (2007) The Basics of Nutrition	▪ useful for understanding how human nutrition works	ELO, Google
FAO (2004) Family Nutrition Guide	▪ very useful for designing nutrition education sessions	click here
WHO, Training Course on Child Growth Assessment	▪ guide is very comprehensive - pick just what you need ▪ incl. Anthropometry Video – good as summary or training	www.who.int/childgrowth/training/en/
ACF (2011) Maximizing the Nutritional Impact of Food Security and Livelihoods Interventions	▪ essential and easy to read guide for people working on food security	ELO, Google
GNC (2011) Resource Material for Training on Nutrition in Emergencies (HTP)	▪ excellent, practical and all topics covering guide on nutrition, assessments, responses, M&E in emergencies	www.unicef.org/nutritioncluster/index_67812.html
Sphere handbook	▪ essential guidance, indicators etc. for emergencies	www.sphereproject.org
SCH's Emergency Health and Nutrition	▪ PPT presentations, summary sheets etc. for emergencies	click here
WB Nutrition Toolkit	▪ useful resource covering a large number of topics	click here
USEFUL LINKS		
CMAM Forum	▪ great source of trainings, guidance, technical briefs etc.	www.cmamforum.org
USAID/ FHI360, Food and Nutrition Technical Assistance (FANTA)	▪ excellent source of very practical manuals, research on nutrition (esp. concerning health, CMAM and agriculture)	www.fantaproject.org
USAID, Infant and Young Child Nutrition (IYCN)	▪ useful source of lessons and best practices collected during 6 years long USAID's nutrition program	www.iycn.org
Positive Deviance Approach website	▪ great source of know-how (incl. manuals) on PDA	www.positivedeviance.org
Emergency Food Security & Nutrition Network	▪ highly recommended website with practical data and know-how on emergency food security and nutrition	www.ennonline.net
WHO Anthro software	▪ software for PCs and mobile devices for recording and analysing data from anthropometric surveys	click here
SMART		www.smartindicators.org
Scaling Up Nutrition (SUN)	▪ useful for seeing the bigger 'picture' – global initiative for scaling up nutrition interventions	www.scalingupnutrition.org

Examples of PIN missions with experience in nutrition programming (for an updated list, ask PIN's Advisor)

COUNTRY, DURATION, DONOR	MAIN FOCUS
Cambodia; since 2011; CZDA, private funding	strengthening of HC staff capacities, mobile phone messaging, community awareness raising campaigns, formative research, urban nutrition
Angola; since 2012; UNICEF, ECHO, EU Governments	CMAM - emergency screening (250,000 children), referral and treatment of undernutrition + community counselling
Ethiopia; since 2011; ECHO, CZDA	integrated nutrition project with Alliance2015 partner (PIN implements WASH), nutrition-sensitive food production
DRC; since 2011; ECHO, Pooled Fund, UNICEF	CMAM, WASH & nutrition, health system strengthening
Syria; since 2013; WHH/German Foreign Office, private funds	provision of nutrition-sensitive food aid and vitamin supplements
Afghanistan; since 2013	urban nutrition

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