Fill the Nutrient Gap Analysis: An introduction

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WFP
wfp.org
Sustainable Development Goals

2 No Hunger
Framework for actions to achieve optimum fetal and child nutrition and development

Benefits during the life course

- Adult stature
  - ↓ Obesity and NCDs
  - ↑ Work capacity and productivity
  - ↓ School performance and learning capacity
  - ↑ Cognitive, motor, socioemotional development
  - ↓ Morbidity and mortality in childhood

Optimum fetal and child nutrition and development

Nutrition specific interventions and programmes

- Adolescent health and preconception nutrition
- Maternal dietary supplementation
- Micronutrient supplementation or fortification
- Breastfeeding and complementary feeding
- Dietary supplementation for children
- Dietary diversification
- Feeding behaviours and stimulation
- Treatment of severe acute malnutrition
- Disease prevention and management
- Nutrition interventions in emergencies

Nutrition sensitive programmes and approaches

- Agriculture and food security
- Social safety nets
- Early child development
- Maternal mental health
- Women’s empowerment
- Child protection
- Classroom education
- Water and sanitation
- Health and family planning services

Knowledge and evidence

Politics and governance

Leadership, capacity, and financial resources

Social, economic, political, and environmental context (national and global)

Access to and use of health services, a safe and hygienic environment

Feeding and caregiving resources (maternal, household, and community levels)

Feeding and caregiving practices, parenting, stimulation

Breastfeeding, nutrient-rich foods, and eating routine

Food security, including availability, economic access, and use of food

Lancet Framework, 2013
Meeting nutrient requirements is a prerequisite for preventing malnutrition.
Good nutrition is about consuming 40 nutrients in different amounts from a wide variety of foods together with other key interventions.
Nutrient needs of young children are very high compared to the amount of food they consume.

<table>
<thead>
<tr>
<th></th>
<th>6-8 month old breastfed child</th>
<th>Adult man</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body weight</td>
<td>7 kg</td>
<td>70 kg</td>
</tr>
<tr>
<td>Required iron intake</td>
<td>9 mg</td>
<td>13.5 mg</td>
</tr>
<tr>
<td>(5% bioavailability)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy intake from foods</td>
<td>600 kcal</td>
<td>2 700 kcal</td>
</tr>
<tr>
<td>including breastmilk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy intake from foods</td>
<td>200 kcal</td>
<td>2 700 kcal</td>
</tr>
<tr>
<td>excluding breastmilk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron / 100 kcal food</td>
<td>4.5 mg</td>
<td>0.5 mg</td>
</tr>
</tbody>
</table>

- **Nutrient density** (nutrient/100 kcal) for young child is much higher than for adults (non pregnant, non lactating)
- **Energy density** requirement of young child is also high (at least 0.8 kcal/g)

Fill the Nutrient Gap - Partners

- WFP
- UC Davis
- UNICEF
- BMZ
- Global Affairs Canada
- IFPRI
- Mahidol University
- Harvard
Guatemala: Pilot completed

El Salvador: Pilot completed

Ghana: Pilot completed

Armenia (CotD)

Pakistan: Q4 2016

Mozambique: Q3 2017

Sri Lanka: Q2 2017

Indonesia (CotD)

Cambodia Q2 2017

Laos: Q1 2017

Indonesia (CotD)

Q4 2017 – Q1 2018
   Rwanda
   Uganda
   Niger
   Zimbabwe
   Sudan
   Myanmar
   Peru
   Philippines
Primary Goals

- Strengthen nutrition situation analysis linked to decision-making
- Establish consensus on cost-effective policy and programmatic strategies to improve nutrition of key target groups adapted to the context
Reviewing secondary data and sources of information

Linear programming on the Cost of the Diet

Life-cycle approach with a focus on:

- Children <2 years
- Pregnant and lactating women
- Adolescent girls
Linear optimization (Cost of the Diet, developed by SC-UK) determines the least expensive nutritious diet using locally available foods.

Locally available food items

Possible diets meeting all nutrient requirements of the household

Least expensive nutritious diet

Least expensive nutritious diet adjusted to include two servings of preferred staple per day (SNUT)
Multiple stakeholders, from several sectors, engage in the process

- FNG Country Team
- National Government
  - Health, Social Protection, Agriculture, Education, SUN Networks
- WFP
  - Country Office, Head Quarters Nutrition, Regional Bureau
- Other UN Agencies
  - UNICEF, WHO, FAO, UNFPA
- Other Partners
  - NGOs, Academia, Private Sector, Development Partners
The process

Stakeholder Engagement Process

1: DEFINE FOCUS
- Multi-stakeholder inception meeting
- Consensus on key target groups and level of analysis

2 & 3: ANALYSIS
- Cost of the Diet Training & food price data collection (Govt/WFP)
- Secondary data compilation & analysis
- Cost of the Diet analysis & modelling

4: RECOMMENDATIONS
- National multi-stakeholder workshop to present key findings
- Joint identification of potential strategies to fill nutrient gaps across multiple sectors

Government/National SUN Coordinator leadership

WFP Technical support

T0

3-4 months
How have FNG results been used in Pilot Countries

El Salvador: To redesign government social protection policies

Ghana: To lead to active engagement of stakeholders across sectors on nutrition strategies

Madagascar: To design new national nutrition policy and action plan

FNG also informed WFP’s strategic planning processes (Zero Hunger Strategic Reviews and Country Strategic Plans)

Best moment: When national policies are being revised & country strategies are being designed
### Key secondary data sources, Tanzania (150+)

<table>
<thead>
<tr>
<th>Data category</th>
<th>Key data sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition situation</td>
<td>DHS 2015/16, Micronutrients DHS 2010</td>
</tr>
<tr>
<td>Policy and programmes</td>
<td>Food and Nutrition Policy Tanzania (draft, 2015); Tanzania National Multi-Sectoral Nutrition Action Plan 2016-2021</td>
</tr>
<tr>
<td>Access and availability of nutritious foods</td>
<td>CFSVA (2012); Livelihood Zones Analysis (2010); AgriDiet working paper 1 (2014)</td>
</tr>
<tr>
<td>Local practices</td>
<td>Ethnicity and Child Health in Northern Tanzania (2014); Affordable Nutritious Foods for Women Baseline Household Survey (2016); ASTUTE Formative Research Presentation (2017)</td>
</tr>
<tr>
<td>Optimisation and Cost of the Diet</td>
<td>Tanzania Mainland Household Budget Survey 2011/12; Zanzibar Household Budget Survey 2014/15</td>
</tr>
</tbody>
</table>
Examples of Key Findings
A diet that only meets energy needs costs a lot less than a diet that meets many more nutrient needs.

Daily cost of a nutritious diet (SNUT) vs. a diet meeting only energy needs (EO), by region in Madagascar.
20% of households cannot afford to meet just energy needs

CotD Analysis, 2016
59% of households cannot afford an adequately nutritious diet

CotD Analysis, 2016
In the cost of the modelled household diet the **adolescent girl** and **lactating woman** are the most expensive.

- **Adolescent Girl**: 14-15 years, 27%
- **Lactating Woman**: 30-59 years, 45kg, Moderately active, Breastfeeding, 28%
- **Child (either sex)**: 6-7 years, 13%
- **Child (either sex)**: 12-23 months, 8%
- **Man**: 30-59 years, 50kg, Moderately active, 24%

*CotD Analysis, 2017*
The additional nutrient requirements of pregnancy and lactation increase the cost of a nutritious diet for an adolescent girl when she becomes pregnant.

40% of women pregnant or already having given birth to their first child by the age of 19.

**CotD Analysis, 2017**
Unhealthy snack food consumption is high among young children in Cambodia

Children 6-23 months:
75% given snacks; 44% given sweet biscuits (Plan International, 2016)

Children 6-23 months:
43% ate a sugary snack and 31% ate a packaged snack food (SCI, 2016)

Children 6-11 months:
43% ate potato chips

Children 9-11 months:
Ate a savoury snack every day (Skau et al., 2014)

Children 6-11 months:
Ate a savoury snack every day (Skau et al., 2014)
Unhealthy snack food consumption* could increase the cost of the diet for a child 6-23 mo on average by 38%

*1 portion/week of biscuit/cracker, cake, candy, potato crisps and fruit juice
Minimum acceptable diet is very low in children 6-23 months, National average 9%, Tanzania
Both household and child-specific interventions can reduce cost of the diet of the 12-23 months old BF child, but household interventions are shared.
MODELLING TO IMPROVE ACCESS TO NUTRIENTS: Lactating Woman

- MMTs given in-kind most effective in reducing the cost of a nutritious diet in ODX / SKG / SVK
- Nutributter given in-kind most effective in PSL
- Fresh food vouchers most effective in VTE Capital

USD/day

ODX | PSL | SKG | SVK | VTE
---|---|---|---|---
SNUT (Initial) | 1.00 | 1.00 | 2.00 | 1.00
Nutributter | 0.75 | 0.75 | 1.75 | 0.75
Energy bars | 0.50 | 0.50 | 0.50 | 0.50
Iron & Folic Acid Supplement | 0.25 | 0.25 | 0.25 | 0.25
MMT | 0.50 | 0.50 | 1.50 | 0.50
Iron & Folic Acid Supplement | 0.25 | 0.25 | 0.25 | 0.25
Energy bars | 0.25 | 0.25 | 0.25 | 0.25
Fresh Food Voucher | 0.25 | 0.25 | 0.25 | 0.25

CotD Analysis, 2017
Nutrition Specific & Sensitive packages to be considered, based on CotD modelling proposed by stakeholders

Interventions for general population

Interventions for specific target groups

Increased income for the poorest
Intervention packages to improve affordability

Tanzania

Non-Affordability in %

- Nutritious Diet
- Fortified Staples
- Kitchen Garden - Micronutrient Rich + Egg
- Targeted Interventions
- Fortified Staples + Targeted Interventions

CotD Analysis, 2016
## Household:
Cash Transfers can reduce non-affordability by 11 to 16 percentage points and a further 12 to 46 percentage points when combined with specific interventions.

### Tanzania

<table>
<thead>
<tr>
<th></th>
<th>% of Households that cannot afford a Nutritious Diet</th>
<th>Cash Transfer 25,000 TZS/mo</th>
<th>Cash Transfer 35,000 TZS/mo</th>
<th>Combined Interventions + 25,000 TZS/mo</th>
<th>Combined Interventions +35,000 TZS/mo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dodoma</td>
<td>68</td>
<td>62</td>
<td>59</td>
<td>50</td>
<td>46</td>
</tr>
<tr>
<td>Dar Es Salaam</td>
<td>52</td>
<td>44</td>
<td>41</td>
<td>32</td>
<td>29</td>
</tr>
<tr>
<td>Rukwa</td>
<td>67</td>
<td>57</td>
<td>51</td>
<td>25</td>
<td>21</td>
</tr>
</tbody>
</table>

### Assumptions:
1. All of the cash provided is used to buy food
2. Cash transfer is provided to all households that cannot afford a nutritious diet

*CotD Analysis, 2016*
**Key Findings**

**MESSAGE 1**
Child malnutrition varies by:
- Geographic location
- Ethnolinguistic group
- Socioeconomic factors

**MESSAGE 2**
Quality (diversity) of dietary intake is of greater concern than quantity (amount)

**MESSAGE 3**
Sourcing of food is changing due to:
- Decreasing access to land and forests
- Shifts in agricultural production

**MESSAGE 4**
- Economic access is a key barrier to a nutritious diet for households
- This may worsen, unless income from other sources increases
MESSAGE 5
Suboptimal breastfeeding & complementary feeding practices also important barriers to adequate nutrient intake

MESSAGE 6
Poor nutrition among women:
• Related to unaffordability
• Results from adolescent pregnancies, gender inequalities & local dietary practices
• Linked to child malnutrition

MESSAGE 7
An integrated package of nutritious foods & SBCC aimed at key target groups, PLUS a cash transfer has the greatest potential to improve affordability & consumption of a nutritious diet

MESSAGE 8
Maintain and expand high level political commitment
Examples of key recommendations

- Social Protection
- Health
- Agriculture
- Food Value Chain/Private Sector
- Education
Examples of key recommendations

### Social Protection

**Increase the social safety net’s (SSN) transfer value** to improve household purchasing power to improve access to a nutritious diet and **explore expanding the population eligible for SSN support** (*Ghana, El Salvador, Indonesia*)

**Include fortified infant cereal (20 g/d)** to complement the diet of children aged 6-23 months, in the form of a commodity specific e-voucher (*Indonesia, El Salvador*)

**Ensure nutrition education is integrated** with the package of services provided to SSN beneficiaries (*several countries*)

**Add a conditionality to the SSN transfer** for pregnant and lactating women and children under-two (e.g. antenatal care attendance, attendance to child health days) (*several countries*)
Examples of key recommendations

**Health**

The nutrient gap among pregnant and lactating women is better filled by *multi micronutrient tablets* than by iron folic acid tablets, explore introducing them *(several countries)*

Besides treating moderate acute malnutrition, increase focus on **prevention of undernutrition** *(1000 days focus)*, using ‘reach out to all’ approach in highly food insecure areas and targeted distribution to children in vulnerable households in more food secure areas *(Madagascar)*

**Antenatal care should be sensitive to the needs of adolescent girls** *(Ghana)*
Examples of key recommendations

Agriculture

Ensure that agriculture extension workers can speak to the importance of good nutrition, diverse diet, importance of horticulture and (small) livestock (*several countries*).

Explore possibilities of introducing biofortified crops (e.g. conventional breeding or genetic modification) (*Ghana, Pakistan*).

Reduce post-harvest losses and improve access to markets (increases availability and lowers prices of nutritious foods and increases purchasing power of small-holders) (*several countries*).
### Examples of key recommendations

**Food Value Chain**

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Location(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve supply chain, including cold storage, of fresh foods (vegetables, fruits, animal source foods)</td>
<td>Ghana</td>
</tr>
<tr>
<td>Harmonize regulatory framework related to staple food fortification</td>
<td>Pakistan</td>
</tr>
<tr>
<td>Expand and strengthen existing (public-)private sector initiatives to increase availability and affordability of fortified complementary foods in markets</td>
<td>Madagascar, Ghana, Pakistan</td>
</tr>
<tr>
<td>Develop and implement standards and regulations for manufacturing and marketing of fortified complementary foods and snacks</td>
<td>Ghana, Pakistan</td>
</tr>
</tbody>
</table>
Examples of key recommendations

**Education**

Expand school meals and education on healthy, nutritious diet to secondary schools and specifically focus on reaching adolescent girls (*Ghana, Pakistan*)

Explore ways to increase school enrolment among adolescents (to delay age at marriage and child bearing) (*several countries*)

Inclusion of *nutrition and balanced diet lessons* in schools, colleges, and universities (*Pakistan*)
Thank you!