‘Fill the Nutrient Gap’
Tanzania: Findings
No Hunger
Meeting nutrient requirements is a prerequisite for preventing malnutrition – 1,000 day window is critical

- Inadequate dietary intake
- Inadequate access to food
- Inadequate care for children and women
- Insufficient health services and unhealthy environment
Good nutrition is about consuming 40 nutrients in different amounts from a wide variety of foods together with other key interventions.
Needs vary by age, sex and biological state.

Cost and affordability of nutritious diets vary by area.
Recognising the need for shared understanding of issues, context and solutions: **Fill the Nutrient Gap** aims to identify the barriers to adequate nutrient intake (availability of and access to nutritious foods):

- Specific target groups in a specific context.
- Multi-stakeholder input and involvement.
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.
Guatemala: Q3-Q4 2016

El Salvador: Pilot completed

Ghana: Pilot completed

Niger: Q2 2017

Malawi: (CotD)

Pakistan: Q4 2016

Nigeria: (CotD)

Sri Lanka: Q2 2017

Indonesia: (CotD)

Cambodia: Q2 2017

Laos: Q1 2017

Sri Lanka: Q2 2017

Mozambique: Q3 2017

Tanzania: Q4 2016

Myanmar

Peru

Armenia: (CotD)

Niger: (CotD)

Malawi: (CotD)

Rwanda

Uganda

Niger

Zimbabwe

DRC

Sudan

Myanmar

Peru
2 Components of the Analysis

- 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.
POLICY ANALYSIS
Analyze enabling environment

ANALYSIS
Analyze food & nutrient availability, access, intake, and local practices & affordability of nutritious diets

DECISION
Identify effective context-specific intervention & policy options to fill the nutrient gap
The FNG process in Tanzania

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

2 & 3: ANALYSIS
- 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

October 2016 to September 2017
Multiple stakeholders engaged throughout the process

- Tanzania Team
- National Government
- WFP
- Other UN Agencies
- Other Partners
Fill the Nutrient Gap combines two streams of analysis

**Secondary data and information**
- Sourced data / grey literature / peer reviewed articles / reports
  - 150+ reviewed

**Cost of the Diet analysis**
- Secondary Price data
  - 26 regions as defined by the DHS
- Estimate SNUT
  - Affordability of SNUT using expenditure data (25 regions)
  - How to address affordability issues
  - Intervention modelling in 10 regions

**Fill the Nutrient Gap**
combines two streams of analysis
## Key secondary data sources (150+ reviewed)

<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>
Nutritious diet for all members of the family using the Cost of the Diet tool

Locally available food items

Possible diets meeting all nutrient requirements of the household

Least expensive nutritious diet

Least expensive nutritious diet adjusted to include the main staples (SNUT)
Staple adjusted nutritious diet (SNUT) – NUTRITIOUS DIET

WHAT IT IS...
• Based on what is available in markets.
• Based on lowest cost.
• Adjusted to reflect basic local preferences.

WHAT IT IS NOT...
• Not necessarily what people are actually eating.
• Not designed to provide recommendations of what people should eat.
Standardized household size and composition for all regions using a lifecycle approach

5 person household:
1. Child aged 12-23 months
2. Child aged 6-7 years
3. Female aged 14-15 years
4. Lactating woman
5. Adult Male
Life-cycle approach focus:
- Children < 2
- Pregnant & lactating women
- Adolescent girls.

Secondary data analysis
- Regional data where possible
- Seasonal effects taken into account.

Cost of Diet analysis and intervention modelling
- 10 regions representing each zones plus Dar es Salaam.
Cost of the Diet intervention modelling: How to improve the affordability of nutritious diets?

Strategies modelled at a household and individual level:
1. Improving access to locally available nutritious foods.
2. Staple food fortification.
3. Improving access to Specialised Nutritious Foods for specific target groups.
4. Micronutrient supplementation.
5. Cash transfers (conditional) – to improve purchasing power.
Cost of the Diet intervention modelling: How to improve the affordability of nutritious diets?

Assumptions:
1. Social Behaviour Change Communication required to improve demand creation for nutritious foods and improved dietary practices.
2. Programming costs are not included in the modelling (next step).

Strategies included based on:
✓ Ongoing interventions in Tanzania
✓ Potential new interventions (discuss feasibility)
✓ Evidence-based interventions.
Key Findings from the Secondary Data Review and Cost of the Diet Analysis
2 Components of the Analysis

- Reviewing secondary data and sources of information
- Linear programming on the Cost of the Diet

Life-cycle approach with a focus on:
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Least expensive nutritious diet
Tanzania is undergoing nutrition transition:

• Although declining, progress is uneven and stunting still high.
• Some remaining pockets of wasting.
• Wide prevalence of micronutrient deficiencies.
• Rising overweight/obesity in women.
Good progress has been made on stunting reduction over the past 5 years, but other indicators remain fairly stable.
Stunting prevalence remains >40% in 6 regions
Nationally affects 1 in 3 (34%) children
Some regions with high stunting saw little or no decrease between 2010-2015

No trends available for Geita, Katavi, Niombe, Simivu, Songwe

<table>
<thead>
<tr>
<th>Change in percentage points</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>-15 to -20</td>
<td>Kagera</td>
</tr>
<tr>
<td>-10 to -15</td>
<td>Mwanza</td>
</tr>
<tr>
<td>-5 to -10</td>
<td>Shinyanga</td>
</tr>
<tr>
<td>0 to -5</td>
<td>Rukwa</td>
</tr>
<tr>
<td>0 to +5</td>
<td>Ruvuma</td>
</tr>
<tr>
<td>&gt;+5</td>
<td></td>
</tr>
</tbody>
</table>

High stunting little/no reduction
Stunting is higher in rural areas and slightly higher in boys.

Stunting prevalence decreases with increasing household wealth. Still affects 1 in 5 children in top quintile.
Could this be due to:

- Unavailability of adequately nutritious foods?
  - Unaffordability of these foods?
- Inappropriate choices based on time, convenience, lack of awareness?
Acute malnutrition remains low & stable (4.4%). There are 323,000 wasted children – A quarter have Severe Acute Malnutrition.

**Legend**

<table>
<thead>
<tr>
<th>Range</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;5,000</td>
<td>Light blue</td>
</tr>
<tr>
<td>5,000-10,000</td>
<td>Medium blue</td>
</tr>
<tr>
<td>10,000-15,000</td>
<td>Dark blue</td>
</tr>
<tr>
<td>15,000-20,000</td>
<td>Dark blue</td>
</tr>
<tr>
<td>&gt;20,000</td>
<td>Dark blue</td>
</tr>
</tbody>
</table>

**No data available for Songwe**
Anaemia is a severe public health problem in young children and women.


Further research needed on causes.

DHS 2015, DHS Micronutrients 2010
Anaemia in children and women is high nationwide. Highest in Lake Zone and Zanzibar.
1 in 3 children and women are iron deficient

**Regional Variation:**
13% (Mtwara) to 52% (Arusha)

**Higher in:**
- Urban vs Rural
- Children 12-23 months

**Regional Variation:**
7% (Mtwara) to 50% (Tabora)

Little Variation across risk factors
1 in 3 children and women are vitamin A deficient

Regional variation:
- Children: 15% (Unguja North) - 51% (Pemba North)
- Women: 17% (Unguja North) - 55% (Pemba North).

Education and Income:
- Unexpectedly higher prevalence in wealthier women and those with more education.

Night blindness:
5 regions where night blindness during pregnancy >5%.
Iodine deficiency in women is associated with socioeconomic indicators.

**Deficiency:**

- >50% in Tabora, Rukwa, Kigoma, Shinyanga, Kagera.
- Highest (76%) in Geita.

**Socioeconomic indicators:** Strongly linked

- Low income: 4.5 x higher risk
- Rural: 3 x higher risk
- No education: 2 x higher risk
- Only 56% of poor households consume iodised salt versus 81% of non-poor households.

**Source:**

- Iodised salt virtually the only source of iodine.
More than 1 in 4 women are overweight. 
1 in 10 is obese...

% Overweight or Obese

- % Women overweight or obese (BMI ≥ 25)
- % Women obese (BMI ≥ 30)
- % Children overweight (WHZ > 2)

... and is rapidly rising especially in urban areas
Non-communicable diseases are an increasing burden

Increases in:
Cardiovascular diseases, diabetes, cancer, and chronic respiratory diseases.

Linked to:
Rural-urban migration, urbanization, changing diets, sedentary urban lifestyles.

Several risk factors:
Overweight/obesity, diet (high intake of fat, sugary foods and drinks), physical inactivity, undernutrition early in life.
Women are at greater risk of non-communicable diseases...

Prevalence of NCDs and risk factors in men and women

- **High cholesterol**
  - Men: 15%
  - Women: 35%

- **Hypertension**
  - Men: 25%
  - Women: 30%

- **Obese**
  - Men: 10%
  - Women: 15%

- **Overweight**
  - Men: 20%
  - Women: 35%

*STEPS Survey 2012*
...and overweight and obesity in women increases with household wealth.
Economic access to a nutritious diet is difficult for the majority

Household Budget Survey 2012/13
Food is generally available but not necessarily accessible
A wide range of foods are available in urban and peri-urban markets

Range of staple grains: maize, rice and wheat

Varieties of vegetables, fruits legumes, meats, cooking oils, spices and condiments

Eggs, milk, yogurt and dried fish available in all regions.

Fresh fish available in most

Some fortified foods, but those for young children are usually imported and expensive
National food security masks inequitable distribution of food

Ministry of Food and Agriculture 2015

Self sufficiency ratio by region, 2014/15
Self sufficiency ratio is not linked with nutrition status

Prevalence of stunting and food self-sufficiency (maize) by regions

Source: TDHS, 2011 (stunting) and MAFC 2010 based on 2009/10 Self-Sufficiency Ratio (SSR) data
High self sufficiency ratio not related to adequately diverse diets

CSFVA 2013, Ministry of Food and Agriculture 2015
Diets are heavily reliant on unfortified **staple foods**
70 - 80% of energy intake comes from staple foods (maize)

Cereals 55%

- Other 18%
- Vegetables 2%
- Fruits, 1%
- Fats 5%
- Animal source foods 2%
- Roots and tubers 11%
- Pulses and legumes 6%

Mainland Tanzania: 40% of energy from maize

Dar es Salaam: 23% of energy from maize

Cochrane & Souza 2015
Despite mandatory fortification it is often not adequate or accessible

GAIN 2016
Consumption of fortified food is lower amongst the poor who need it most...

- Most households consume maize flour.
- Only 1/4 of poor households and 1/2 of non-poor households source maize flour from a miller required to fortify.
- Of those households, <3% consumed adequately fortified maize flour.
Nutritious diet for all members of the family using the Cost of the Diet tool

Locally available food items

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Least expensive nutritious diet

Least expensive nutritious diet adjusted to include the main staples (SNUT)
Modelling to improve access to nutrients

<table>
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<th>Target group</th>
<th>Intervention</th>
<th>Transfer Modality</th>
<th>Possible Entry Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household</td>
<td>Fortified Staple (Maize or Rice)</td>
<td>Market</td>
<td>• Health</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Agriculture</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Social Protection</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Markets (Private Sector)</td>
</tr>
</tbody>
</table>
Household:
Fortified maize could reduce the cost of the diet of the household by 11%

CotD 2017

Diet Cost

- Dodoma
- Dar es Salaam
- Rukwa

Nutritious Diet
Fortified Maize
Crop diversification amongst smallholder farmers is critical to support better nutrition.
Maize dominates domestic agricultural production

Maize: 5000000 (Short rains), 45000000 (Long rains)

Paddy (rice): 500000 (Short rains), 1500000 (Long rains)

Sorghum: 1500000 (Short rains), 1000000 (Long rains)

Other grains: 500000 (Short rains), 300000 (Long rains)

Roots and tubers: 50000 (Short rains), 30000 (Long rains)

Legumes, nuts, seeds: 100000 (Short rains), 80000 (Long rains)

Fruits and vegetables: 50000 (Short rains), 40000 (Long rains)

NBS 2014-15
Diversification of crops is critical...

Much food available in markets is produced domestically...

For 1 ton of fruit/veg harvested...
- 15 tons of maize (Short rains)
- 30 tons of maize (Long rains)

...food shortages are most common from October-February in areas with 2 rainy seasons (bimodal)
Agriculture is key to the economy...

- 25% of GDP
- 88% of rural employed population
- 85% of farmers cultivating <4 hectares
- Food supply dependent on domestic agriculture

Cochrane & Souza, WFP CFSVA, NMNAP
...yet smallholder farmers face many challenges

Cochrane & Souza, WFP CFSVA, NMNAP

- Lack of modern inputs and techniques
- Lack of access to credit
- Reliance on rain – vulnerable to climate change
- Insecure land tenure, especially for women
# Modelling to improve access to nutrients

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<tbody>
<tr>
<td>Household</td>
<td>Kitchen Garden A-Cabbage Tomato Beans</td>
<td>Own production</td>
<td>Agriculture</td>
</tr>
<tr>
<td></td>
<td>Kitchen garden B-Iron Fortified beans Amaranth Leaves Orange Flesh Sweet Potato</td>
<td>Own production</td>
<td>Agriculture</td>
</tr>
<tr>
<td></td>
<td>Kitchen Garden B &amp; Egg Production</td>
<td>Own production</td>
<td>Agriculture</td>
</tr>
</tbody>
</table>
Household:
Kitchen Gardens with nutrient dense crops have great potential in reducing the cost of the diet

- MN Poor: 2%
- MN Rich: 8%
- MN Rich + Egg: 12%

CotD 2017

SNUT  Kitchen Garden A  Kitchen Garden B  Kitchen Garden B with egg
Many of the poor do not own agricultural land and require other platforms for nutrition security.

73% (41 million) of Tanzanians live in rural areas.

Estimated 46% (19 million) of these live and farm on smallholdings.

10% rural households are landless.

Approximately 4 million Tanzanians have no access to smallholder farms.

FAO 2015; World Bank 2012
Markets are an important platform for improving access to nutrient rich foods.
Even in rural areas, households rely on markets for more than 1/3 of their energy intake.

**Sources of household calories, 2010-2011**

<table>
<thead>
<tr>
<th>Location</th>
<th>Purchased</th>
<th>Own Production</th>
<th>Gifts and Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dar es Salaam</td>
<td>97%</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>Rest of urban</td>
<td>77%</td>
<td>20%</td>
<td>3%</td>
</tr>
<tr>
<td>Rural</td>
<td>38%</td>
<td>58%</td>
<td>4%</td>
</tr>
<tr>
<td>Total</td>
<td>60%</td>
<td>37%</td>
<td>3%</td>
</tr>
<tr>
<td>Zanzibar</td>
<td>87%</td>
<td>8%</td>
<td>5%</td>
</tr>
</tbody>
</table>

**WFP CFSVA 2013**
Poor households in particular rely heavily on markets.

Tanzania Livelihood Baseline Profiles 2016

The diagram shows the percentage of energy intake from different sources for households of varying wealth status. The categories are very poor, poor, middle, and better off. The sources include purchase, own milk/meat, own pulses, own maize, and green crops.
Lack of infrastructure restricts access to markets
Diets that *meet the nutrient needs* of different household members are *unaffordable* for poor households.
Prices for most food groups vary widely across regions

- Maize, flour, dry
- Maize, white, grain or flour, CotD
- Rice, raw
- Sorghum, flour
- Sorghum, whole grain, white, raw
- Wheat, flour, white
- Beef, with bone
- Fish, dried, CotD
- Fish, raw
- Egg, chicken, raw
- Milk, cow, fresh, non fortified
- Yoghurt, whole milk, plain

TZS per 100g

Max Price
Min Price
Avg Price

NBS 2016
Foods rich in micronutrients are expensive, have variable prices and are perishable.

Vitamin B12 rich foods

<table>
<thead>
<tr>
<th>Foods</th>
<th>Max Price</th>
<th>Min Price</th>
<th>Avg Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maize flour</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beef liver</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fresh fish</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dried fish</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milk, fresh (cow)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yoghurt, whole milk, plain</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Cost (TSH) per 100g

0  500  1000  1500  2000
Prices for most food groups vary widely across regions

- **Significant variation** in prices between regions and across most food groups.
- **Largest price variability**: Chicken, fish, yogurt, butter.
- **Maize**: Generally least expensive staple with prices fairly steady across regions.
- **Rice and wheat**: Average 1.5-2.0 X more than maize.
- **Meat**: >2 X cost of legumes.
Nutritious diets are on average 2.5 times more expensive than diets that only meet energy needs.
Nutritious diet for 5 person households cost between 100,000 – 200,000 TZS / month.
Poverty causes widespread food insecurity and households spend half their income on food

56% of expenditure is on food
70% poorest households

<table>
<thead>
<tr>
<th>Poverty</th>
<th>Food insecurity</th>
</tr>
</thead>
<tbody>
<tr>
<td>28% below basic needs poverty line (2011/12) Disproportionately affects rural households (Dar es Salaam 4% / Rural 33%)</td>
<td>10% below food poverty line 8% households food insecure (2011) 15% high coping scores – indicating severe food access issues</td>
</tr>
</tbody>
</table>
Non-affordability of meeting just energy needs high in the south and Arusha

20% of households nationally

CotD 2017

Legend
- Non-Affordability Energy Only
  - <5%
  - 5-10%
  - 10-15%
  - 15-20%
  - 20-25%
  - 25-30%
  - 30-35%
  - >35%
59% of households cannot afford a nutritious diet

Non-affordability particularly high in south and west

CotD 2017
It is more difficult to afford a diet that meets nutrient needs than one that only meets energy needs.
Infant and Young Children Feeding practices are inadequate country-wide

Key Barriers:
• Economic Access
• Time
<table>
<thead>
<tr>
<th>Stage</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age appropriate breastfeeding (0-23 months)</td>
<td>74%</td>
</tr>
<tr>
<td>Continued breastfeeding (2 years)</td>
<td>43%</td>
</tr>
<tr>
<td>Continued breastfeeding (1 year)</td>
<td>92%</td>
</tr>
<tr>
<td>Introduction solid / semi-solid / soft foods (6-8 months)</td>
<td>92%</td>
</tr>
<tr>
<td>Predominant breastfeeding (0-5 months)</td>
<td>72%</td>
</tr>
<tr>
<td>Exclusive breastfeeding (4-5 months)</td>
<td>27%</td>
</tr>
<tr>
<td>Exclusive breastfeeding (&lt;6 months)</td>
<td>59%</td>
</tr>
<tr>
<td>Early initiation of breastfeeding</td>
<td>51%</td>
</tr>
</tbody>
</table>

**Exclusive breastfeeding does not last long enough**

**Complementary foods are introduced too early**

DHS 2015-16
Not breastfeeding could dramatically increase the costs to feed a child 12-23 months.

<table>
<thead>
<tr>
<th></th>
<th>Dodoma</th>
<th>Unguja</th>
<th>CotD 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Cost of the Diet (TSH)</td>
<td></td>
<td></td>
<td>442</td>
</tr>
<tr>
<td>Breastfeeding &amp; Nutritious diet</td>
<td>277</td>
<td>389</td>
<td>527</td>
</tr>
<tr>
<td>Breastfed Half Requirements</td>
<td>381</td>
<td>442</td>
<td>558</td>
</tr>
<tr>
<td>Not Breastfed</td>
<td>527</td>
<td></td>
<td>558</td>
</tr>
</tbody>
</table>
Complementary feeding is a critical time
Minimum acceptable diet is very low in children 6-23 months
National average 9%

Legend

- <15%
- 15-30%
- 30-50%
- >50%

DHS 2015

Minimum meal frequency

Minimum dietary diversity
Income plays an important role in achieving a diverse, nutritious diet.

Minimum Acceptable Diet by Quintile, DHS 2015

First quintile
Second quintile
Third quintile
Fourth quintile
Fifth quintile

- Blue squares: Children 6-23 months with 3 IYCF practices
- Orange circles: Children 6-23 months fed the minimum meal frequency
- Gray circles: Children 6-23 months fed 4+ food groups
Vitamin A supplementation indicates room for improvement

Coverage (children 6-59 months)

61%

2010

Large regional discrepancies

DHS 2010
Evidence suggests that young children consume the same food as the household

Maliti 2016, DHS 2015

Study in 2 districts (Simanjiro/Longido):

• Children <5 mostly ate same foods as household.
• Separate food only prepared 1/4 (23%) of the time.
• Fewer than half (44%) ate from a separate plate.
• Children often did not eat meat or eggs (traditions/cultural beliefs).

Nationally:

• Children 6-23 months often did not consume meat, eggs, cheese, yogurt, or milk products.
Barriers to appropriate feeding:

(ASTUTE study in 5 districts)

- **Insufficient time** to prepare special meals.
- **Fears** that if children become accustomed to too much food they will be unable to cope during shortages.
- **Lack of knowledge.**
- **Men less informed than women** and do not provide sufficient support for exclusive breastfeeding or appropriate complementary feeding.

Lack of time and awareness are barriers to good nutrition for children

Remes 2017
ARCH labelling study:

- Identified 8 categories of **Snack foods commonly fed to children <2 years:**
  - Biscuits-cookies / Cakes / Candy-sweets-chocolate / Chips-crisps / Yogurt / Soft drinks / Other sweetened beverage / Other products including soy flour porridge, milk powder, and cream cheese.

- **Imported commercially produced foods for general consumption (snacks)** that are often fed to young children were up to 9 X cheaper than imported commercially produced complementary foods.
## Modelling to improve access to nutrients

### Children 6-23 months

<table>
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<th>Possible Entry Points</th>
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</thead>
<tbody>
<tr>
<td>SQ-LNS (Specialised Nutritious Food)</td>
<td>In-Kind/Voucher Market (100 TSH)</td>
<td>• Health</td>
</tr>
<tr>
<td>Multi-Micronutrient Powder (MNP)</td>
<td>Voucher/In-kind Market (100 TSH) Market (200TSH)</td>
<td>• Social Protection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Markets (Private Sector)</td>
</tr>
</tbody>
</table>
Child 6-23 months: Specialised Complementary Food given in kind is highly effective in reducing the cost of the diet by 50%.
Child 6-23 months:
Market based interventions can be effective at reducing costs but the price points need to be considered carefully.

MNP at 200 TSH is $\frac{1}{3}$ of the cost of the diet.

- Nutritious diet
- Fortified maize
- Micronutrient powder $\text{TZS 200}$
- Micronutrient powder $\text{TZS 100}$
- Specialised complementary food (market price)

CotD 2017
The diets of women and adolescents girls are poor
The nutritional status of women is associated with children's nutritional status.

- **Thin mother** (BMI < 18.5)
- **Normal weight mother** (BMI 18.5 – 24.9)
- **Overweight/Obese mother** (BMI > 25)
Breastfeeding women & adolescent girls contribute to 60% of household’s diet costs

- LACTATING WOMAN 30-59 years, Breastfeeding: 31%
- ADOLESCENT GIRL 14-15 years: 29%
- Man 30-59 years: 22%
- Child (either sex) 12-23 months: 13%
- Child (either sex) 6-7 years: 5%
½ of women begin childbearing before age 20
¼ are pregnant between age 15-19 years

DHS 2015-16
Meeting the needs of adolescent girls is already expensive. Pregnancy/lactation increases diet costs and vulnerability.

Diet cost increases by up to:
- Pregnancy 7%
- Lactation 19%

[Graph showing cost increases in different regions for nutritious diet, adolescent pregnant, and adolescent lactating diets.]
75% of women (in 2 regions) met dietary diversity Higher in urban than rural areas

Smith & Kaishozi 2016
Women: Understand that nutritious food is expensive and therefore unaffordable, both during their pregnancies and for young children.

Pregnancy: Women are unlikely to change their diets or habits – may restrict calories and continue working as usual.

Key influencers: Husbands (ASTUTE study), mothers-in-law and community elders (Maasai study in Ngorongoro).
Duration and compliance of iron supplementation in pregnant women is a concern

**Iron supplementation for pregnant women**

- 81% Received supplementation
- 21% Took supplements ≥90 days

**Vitamin A supplementation**

- Only ¼ of women nationally received vitamin A in the first 2 months after delivery.
- <10% in Rukwa and Shinyanga.

Anaemia most common in regions with lowest supplementation

DHS 2015
## Modelling to improve access to nutrients

### CotD 2017

<table>
<thead>
<tr>
<th>Target group</th>
<th>Intervention</th>
<th>Transfer Modality</th>
<th>Possible Entry Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adolescent girls</td>
<td>Multi-Micronutrient Tablet (MMT)</td>
<td>Voucher/In-kind</td>
<td>• Health</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Agriculture</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Social Protection</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Markets (Private Sector)</td>
</tr>
<tr>
<td>Pregnant and lactating women</td>
<td>Multi-Micronutrient Tablet (MMT)</td>
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</tbody>
</table>
Adolescent girl:
A Multi-Micronutrient Tablet was highly effective at reducing the cost of the diet by 36%.
Pregnant and Lactating Woman: A Multi-Micronutrient Tablet was highly effective at reducing the cost of the diet.

- **24%**

**Graph:**
- **Dodoma**
  - Nutritious diet
  - Fortified Maize
  - Multiple Micronutrient Tablets

- **Dar es Salaam**
  - Nutritious diet
  - Fortified Maize
  - Multiple Micronutrient Tablets

- **Rukwa**
  - Nutritious diet
  - Fortified Maize
  - Multiple Micronutrient Tablets

CotD 2017
Great potential to improve affordability of a nutritious diet from context-specific interventions.
PACKAGES TO BE CONSIDERED BASED ON THE MODELLING

- Household interventions
- Targeted interventions
- Cash transfers
A package of targeted interventions...
- SQ LNS for Children under 2
- Multiple micronutrient table for Pregnant and Lactating Women and for Adolescent Girls

combined with household interventions:
- Fortified Maize

...could reduce non-affordability by 6-32 percentage points
Intervention packages to improve affordability

CotD 2017

Non-Affordability in %

<table>
<thead>
<tr>
<th>Region</th>
<th>Nutritious Diet</th>
<th>Fortified Staples</th>
<th>Kitchen Garden B + Egg</th>
<th>Fortified Staples + Target Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dodoma</td>
<td>68</td>
<td>67</td>
<td>64</td>
<td>62</td>
</tr>
<tr>
<td>Dar Es Salaam</td>
<td>52</td>
<td>50</td>
<td>45</td>
<td>41</td>
</tr>
<tr>
<td>Rukwa</td>
<td>67</td>
<td>45</td>
<td>57</td>
<td>40</td>
</tr>
</tbody>
</table>

Legend:
- Nutritious Diet
- Fortified Staples
- Kitchen Garden B + Egg
- Fortified Staples + Target Interventions
- Targeted Intervention
### Household:
Cash Transfers can reduce non-affordability by 11 to 16 percentage points and a further 12 to 46 percentage points when combined with interventions

<table>
<thead>
<tr>
<th></th>
<th>% of Households that cannot afford a Nutritious Diet</th>
<th>Cash Transfer 25,000 TZS</th>
<th>Cash Transfer 35,000 TZS</th>
<th>Combined Interventions + 25,000 TZS</th>
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</tr>
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</table>

### Assumptions:
1. All of the cash provided is used on food.
2. Cash transfer is provided to all households that cannot afford a nutritious diet.
A range of entry points both public and private exist within the food system to improve access to nutritious food.
Potential Entry Points

- Sector Specific Platforms
- Enabling Environment
- Supply and Demand
Social Protection:
- Cash transfers
- Linking farmers to safety nets
- Shock preparedness & response (food banks), especially in bimodal areas
ENABLING ENVIRONMENT

- Monitoring of fortification
- Food Quality and Safety Standards
- Aflatoxins
- Data and information systems
- Regulation of snack foods
- Implementation of the NMNAP
- Improve physical access to markets - improved infrastructure
Markets:
Availability of affordable, safe, nutritious and convenience foods

Demand creation for healthy diets and lifestyles

Private sector messaging; targeting; price segmentation

Social behaviour change communication and Nutrition education - Community health, Agricultural extension officers, conditional cash transfers etc.
Asante Sana
Instructions for working session

• Please join one of the five groups relevant to your organisation.
• Select 2-4 of the key findings most appropriate to your area.
• Discuss the implications of these findings on policy.
• Propose concrete actions which use this information to tackle malnutrition
  • Which key finding does it relate to?
  • What are the appropriate actions?
  • Which stakeholders would be needed to carry these out?
• Prioritise these actions.
• Record your conclusions on a laptop, using the template provided.