Malnutrition - A journey from the early 1980s to today

Presented by
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SCARCITY – LESS CHOICES

Chad, North Africa: The Aboubakar family from Darfur, Sudan, spend £37 a week on food to feed six people.
PLENTINESS - CHOICES
MARASMUS

Protein Energy Malnutrition (PEM)

KWASHIORKOR

Caloric Deficiency

Protein Deficiency

Marasmus

Kwashiorkor
Protein-Energy Malnutrition

Marginal energy, but insufficient protein intake
Kwashiorkor

“the disease that the first child gets when the new child comes”

Insufficient protein and energy intake
Marasmus

“to waste away” or “dying away”
PROTEIN ENERGY MALNUTRITION
ANTHROPOMETRIC MEASUREMENTS
FOOD AID DISTRIBUTIONS
Public health nutrition

Alleviation of nutritional deficiency diseases in refugees
Angela Berry-Koch, Regina Moench, Peter Hakewill, and Mohammed Dualeh

Abstract
This paper describes deficiency diseases of concern among refugees since, without treatment, permanent disability or even death can result. The context...
Micronutrient Deficiencies

Vitamin Deficiency Diseases
- Retinol (Vitamin A) → xerophthalmia / night blindness
- Ascorbic acid (Vitamin C) → scurvy or scorbutus
- Calciferol (Vitamin D) → rickets.
- Niacin (Vitamin B₃) → pellagra
- Thiamin (Vitamin B₁) → beriberi

Mineral Deficiency Diseases
- Iron — anemia
- Iodine — goiter
Targeted Food Fortification

Preferred approach when fortified foods are used for specific population groups with specific nutritional needs

Ready to Use Foods (RUFs) and Therapeutic Food (RUTFs)
High Energy Biscuits (HEBs)
Micronutrient Powders or “Sprinkles”

Source: https://www.wfp.org/nutrition/special-nutritional-products
SPECIFIC FOODS FOR SPECIFIC NEEDS OF FOOD AID BENEFICIARIES
Micronutrient Malnutrition: Deficiencies in essential vitamins and minerals required in small amounts by the body including:

- Iron
- Vitamin A
- Iodine
- Zinc
- Folic Acid

Deficiencies caused by:

- Insufficient, poor or unvaried diets
- Losses or poor absorption (due to infections like HIV/AIDS, malaria, diarrhea and parasites)
GLOBAL HIDDEN HUNGER: FACTS AND FIGURES

Source:
The double burden of malnutrition is characterised by the co-existence of:

1. Undernutrition (wasting, stunting & micronutrient deficiencies) along with overweight and obesity

2. and diet-related noncommunicable diseases

3. within individuals, households and populations

4. throughout life

The New Norm of Malnutrition:

*Obesity and NCDs are on the rise alongside undernutrition*

Every country has a nutrition problem
- Over-nutrition
- Undernutrition
- Micronutrient deficiencies
- Non-communicable diseases
Every country has a problem!

OBESITY AND NON-COMMUNICABLE DISEASES

- Diabetes Type II
- Cardiovascular Diseases
PLENTINESS - CHOICES

Germany: The Melander family from Bargteheide who spend around £320 on their weekly shop
CHALLENGE – TYPE OF FOOD

'promoting a healthy, affordable nutritious diet for all'
INCREASED RELIANCE ON LESSER FOODS TO MAKE THOUSANDS OF PRODUCTS

LOSS IN DIVERSITY

Soybeans

Wheat

SUGAR
### CHALLENGE OF CONVENIENCE
FROM LOW TO ULTRA-PROCESSED FOOD

<table>
<thead>
<tr>
<th>Nutrients per 100g</th>
<th>White fish fillets</th>
<th>Fish fingers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price:</td>
<td>$10-20/kg</td>
<td>$16/kg*</td>
</tr>
<tr>
<td>Protein</td>
<td>18g</td>
<td>12.7g</td>
</tr>
<tr>
<td>Fat:</td>
<td>1g</td>
<td>8.7g</td>
</tr>
<tr>
<td>Sodium:</td>
<td>70mg</td>
<td>235mg</td>
</tr>
</tbody>
</table>

53% fish, plus 10 additives, including flour, oil, salt

*based on fish content, real price for the fish $30.40/kg
CHALLENGE OF LIFE STYLE CHANGE - CHOICES
What’s healthy, tasty and attractive
CHALLENGE OF LIFESTYLE CHANGES
RURAL-URBAN MIGRATION IN EMERGING COUNTRIES

Trading farm work
- Physical work
- Burning calories

For sedentary occupations
- Less physical work
- Burning less calories
CHALLENGE OF CLEAN WATER - AVAILABILITY AND SOURCES
Sustainable Diets

Sustainable Food Production

Affordable, accessible, available and aspirational nutritious foods
TAKE HOME MESSAGE

The journey of malnutrition and my professional career has been a journey of witnessing:

- inequalities, scarcity, excess, poverty, richness,
- food innovation, better understanding of malnutrition
- global efforts and initiatives to document the burden of malnutrition
- policies to address malnutrition
- Innovative multiple-stakeholder partnerships
Thank You

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Q&A
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BASE OF THE PYRAMID MARKET POTENTIAL

- **1 Billion**
  - >$60/day
  - Purchasing Power: $12.5 trillion
  - Fairly urban, extremely competitive, well-served

- **2 Billion**
  - $10-60/day
  - $5 trillion

- **3 Billion**
  - $1-10/day

- **1 Billion**
  - <$1/day
  - Humanitarian
  - Changing food consumption, under-served, informal economy, inefficient and little competition

Base of Pyramid (BoP)