Module - I
Hunger and Food Security
Concepts, Principles, Policy and
State of Food Insecurity

K. Rajaraman
Commissioner
Civil Supplies & Consumer Protection
www.consumer.tn.gov.in
Basic Concepts
Hunger

• Hunger is a term which has three meanings (Oxford English Dictionary 1971)
  – the uneasy or painful sensation caused by want of food; craving appetite.
  – Also the exhausted condition caused by want of food
  – The want or scarcity of food in a country
  – A strong desire or craving

• Semantics: Hunger and Malnutrition
Malnutrition

- Malnutrition is a general term that indicates a lack of some or all nutritional elements necessary for human health
  - **PEM**: or Lack of enough protein (from meat and other sources) and food that provides energy (measured in calories) which all of the basic food groups provide. This is the type of malnutrition that is referred to when world hunger is discussed.
PEM : Chronic Hunger

• PEM is most lethal form of malnutrition/hunger. It is basically a lack of calories and protein. Food is converted into energy by humans, and the energy contained in food is measured by calories.
VMD : Hidden Hunger

- VMD : Vitamin & Mineral Deficiency :
- 1 out of 3 people in developing countries are affected by vitamin and mineral deficiencies, according to the World Health Organization.
  - Vitamin A
  - Iron
  - Iodine
  - Zinc
Hunger Measurements
FAO : DES / CV measure

• FAO measure of food deprivation, which is referred to as the prevalence of undernourishment, is based on a comparison of usual food consumption expressed in terms of dietary energy (kcal) with certain energy requirement norms.
• By focusing on dietary energy intake, the measure is attempting to capture those whose food consumption level is insufficient for body weight maintenance and work performance. Methodology: HIES
Assessing the Hungry

![Graph showing dietary intake distribution with cutoff and mean values, and percentage of undernourished individuals.](image)
<table>
<thead>
<tr>
<th>Method</th>
<th>Use</th>
<th>Research into causes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main use</strong></td>
<td><strong>More useful at the global level than the national level</strong></td>
<td><strong>Not very useful except for broad intercountry trends</strong></td>
</tr>
<tr>
<td><strong>Political advocacy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) FAO: DES/CV (coefficient of variation)</td>
<td>Main use: global and regional level</td>
<td></td>
</tr>
<tr>
<td>(2) Household income and expenditure survey</td>
<td>Useful: national and subnational level</td>
<td>Main use</td>
</tr>
<tr>
<td>(3) Food consumption/individual intake</td>
<td>Rarely available at the national level, thus less useful</td>
<td>Useful, usually for subnational groups</td>
</tr>
</tbody>
</table>
Food Security

- Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe, affordable and nutritious food to meet their dietary needs and food preferences for an active and healthy life.
- This implies three different aspects: availability, affordability, reliability and access
World Hunger Scenario
Background

- Sharp rise in prices of all foodgrains and other food items
- Food shortages across the world due to a variety of reasons
- Food riots in Bangladesh, Egypt and Philippines and many other nations ready to explode. In Haiti a Government has fallen.
RICE PRODUCTION AND CONSUMPTION

Metric tonnes (thousands)

- **Production**
- **Consumption**

<table>
<thead>
<tr>
<th>Country</th>
<th>Production</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>30,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Burma</td>
<td>10,000</td>
<td>8,000</td>
</tr>
<tr>
<td>China</td>
<td>120,000</td>
<td>110,000</td>
</tr>
<tr>
<td>India</td>
<td>90,000</td>
<td>80,000</td>
</tr>
<tr>
<td>Indonesia</td>
<td>35,000</td>
<td>30,000</td>
</tr>
<tr>
<td>Japan</td>
<td>5,000</td>
<td>4,000</td>
</tr>
<tr>
<td>Philippines</td>
<td>15,000</td>
<td>12,000</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>2,000</td>
<td>1,500</td>
</tr>
<tr>
<td>Thailand</td>
<td>10,000</td>
<td>9,000</td>
</tr>
<tr>
<td>Vietnam</td>
<td>25,000</td>
<td>22,000</td>
</tr>
</tbody>
</table>

Note: figures for milled rice for year ending March 2008

Source: USDA
**RISING FOOD PRICES, 2005-2007**

1998-2000 = 100*

**PRICES RISES BY FOOD TYPE, 2007**

1998-2000 = 100*

*Changes in price are indexed against the costs dating from 1998-2000*

**SOURCE:** Source: FAO
Input prices outpace food prices

Note: Base = 2003.
Source: FAO.
CHANGING EATING HABITS
Meat consumption in China per capita:

1980: 20kg
2007: 50kg

PRESSURE ON RESOURCES
1,000-2,000 litres of water is needed to produce 1kg of wheat

10,000-13,000 litres of water is needed to produce 1kg of beef

WORLD POPULATION GROWTH

1950: 2.5bn
1975: 4.1bn
2000: 6.1bn
2025: 8.0bn
2050: 9.2bn

SOURCE: FAO

SOURCE: UN
Background

Reasons for price rise across the world:

- Reduced world stocks of foodgrains
- Decrease in world production area, esp. in developing countries
- Diversion to and of crops like corn, edible oil for fuel production
- Increase of per capita consumption due to economic growth in the developing countries
- Commodity futures and speculation
The State of Food Insecurity in the World 2008
Number of undernourished people in the world, 2003–05 (millions)

- Near East and North Africa: 33
- Latin America and the Caribbean: 46
- China: 123
- Asia and the Pacific (excluding China and India): 189
- Sub-Saharan Africa: 212
- India: 231
- Developed countries: 16

Source: FAO.
World Developments

• At the World Food Summit (WFS) of 1996 (FAO, 1996a), leaders of 186 countries pledged to reduce by half the numbers of hungry people in the world by 2015 (FAO, 2000).

• The UN’s recent Millennium Development Goals included commitments to a similar intent (UN, 2000)
What is the Situation in India?
Source: Food Insecurity Atlas of India, MS Swaminathan Research Foundation, 2005
FIGURE 1—RANKING OF STATES WITHIN INDIA FROM LOWEST TO HIGHEST INDIA STATE HUNGER INDEX SCORES

Source: See Table 2.
<table>
<thead>
<tr>
<th>State</th>
<th>Prevalence of calorie under-nourishment (%)</th>
<th>Proportion of underweight among children &lt;5 years (%)</th>
<th>Under-five mortality rate (deaths per hundred)</th>
<th>India State Hunger Index score</th>
<th>India State Hunger Index rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Punjab</td>
<td>11.1</td>
<td>24.6</td>
<td>5.2</td>
<td>13.63</td>
<td>1</td>
</tr>
<tr>
<td>Kerala</td>
<td>28.6</td>
<td>22.7</td>
<td>1.6</td>
<td>17.63</td>
<td>2</td>
</tr>
<tr>
<td>Andhra Pradesh</td>
<td>19.6</td>
<td>32.7</td>
<td>6.3</td>
<td>19.53</td>
<td>3</td>
</tr>
<tr>
<td>Assam</td>
<td>14.6</td>
<td>36.4</td>
<td>8.5</td>
<td>19.83</td>
<td>4</td>
</tr>
<tr>
<td>Haryana</td>
<td>15.1</td>
<td>39.7</td>
<td>5.2</td>
<td>20.00</td>
<td>5</td>
</tr>
<tr>
<td>Tamil Nadu</td>
<td>29.1</td>
<td>30.0</td>
<td>3.5</td>
<td>20.87</td>
<td>6</td>
</tr>
<tr>
<td>Rajasthan</td>
<td>14.0</td>
<td>40.4</td>
<td>8.5</td>
<td>20.97</td>
<td>7</td>
</tr>
<tr>
<td>West Bengal</td>
<td>18.5</td>
<td>38.5</td>
<td>5.9</td>
<td>20.97</td>
<td>8</td>
</tr>
<tr>
<td>Uttar Pradesh</td>
<td>14.5</td>
<td>42.3</td>
<td>9.6</td>
<td>22.13</td>
<td>9</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>27.0</td>
<td>36.7</td>
<td>4.7</td>
<td>22.80</td>
<td>10</td>
</tr>
<tr>
<td>Karnataka</td>
<td>28.1</td>
<td>37.6</td>
<td>5.5</td>
<td>23.73</td>
<td>11</td>
</tr>
<tr>
<td>Orissa</td>
<td>21.4</td>
<td>40.9</td>
<td>9.1</td>
<td>23.80</td>
<td>12</td>
</tr>
<tr>
<td>Gujarat</td>
<td>23.3</td>
<td>44.7</td>
<td>6.1</td>
<td>24.70</td>
<td>13</td>
</tr>
<tr>
<td>Chhattisgarh</td>
<td>23.3</td>
<td>47.6</td>
<td>9.0</td>
<td>26.63</td>
<td>14</td>
</tr>
<tr>
<td>Bihar</td>
<td>17.3</td>
<td>56.1</td>
<td>8.5</td>
<td>27.30</td>
<td>15</td>
</tr>
<tr>
<td>Jharkhand</td>
<td>19.6</td>
<td>57.1</td>
<td>9.3</td>
<td>28.67</td>
<td>16</td>
</tr>
<tr>
<td>Madhya Pradesh</td>
<td>23.4</td>
<td>59.8</td>
<td>9.4</td>
<td>30.87</td>
<td>17</td>
</tr>
<tr>
<td>India</td>
<td>20.0</td>
<td>42.5</td>
<td>7.4</td>
<td>23.30</td>
<td>18</td>
</tr>
</tbody>
</table>
Revised estimates of undernourished in China and India

<table>
<thead>
<tr>
<th></th>
<th>China</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990-92</td>
<td>178</td>
<td>207</td>
</tr>
<tr>
<td>1995-97</td>
<td>144</td>
<td>200</td>
</tr>
<tr>
<td>2003-05</td>
<td>123</td>
<td>231</td>
</tr>
</tbody>
</table>

Source: FAO
Whom does hunger attack?
969 million people live on less than US$1 a day.
17% of those live on less than US$0.50 a day.
Vulnerable groups

• Rural areas
  - Unskilled landless and Unskilled Labourers
  - Subsistence farmers
  - pastoralists
  - remote area dwellers

• Urban areas
  - Slum dwellers
  - Unskilled labourers

• General
  - PWDs, Widows, Deserted women, Orphans, 
HIVaffected, Transgender Persons, Sex workers
Lactating Mother with Malnourished child

Malnourished Young Children and Infants
Coping strategies of the poor
Household coping behaviours and nutrition impacts following a sudden rise in food prices

- ↑ Price of staple food
  - ↓ Real income
    - ↑ Intake of cheaper grains or starchy staples
      - ↓ Energy and protein intake
    - ↓ Intake of usual staple foods
    - ↓ Intake of non-staple foods
      - ↓ Micronutrient intake
    - ↑ Time spent working on income-generating activities
      - ↓ Care-giving
      - ↓ Expenditure on health, education, other non-food items
      - ↑ Frequency and severity of illness
    - ↓ Micronutrient deficiencies
    - ↑ Protein-energy malnutrition

Source: FAO
Consequences of Hunger
Health effects

- EFFECTS ON HEALTH: From physical malnutrition, as indicated by wasting (low weight-for-height), underweight (low weight-for-age) or stunting (low height-for-age), to micronutrient deficiencies leading to lowered immunocompetence, anaemia, developmental and cognitive defects, etc. (See Figure 9 and related discussion);
Health Consequences

- Death or heavy bleeding among pregnant mothers
- Mortality, Wasting and Stunting among infants and children
- Low IQ and Inability to work hard
- Loss of more income due to ill health
- Poor health leading to further costs
- Reduced nutrition of girl children and old persons
- Reduced life expectancy
Physiological and Psychological impacts

- **SUFFERING**: The pain and distress of hunger, the “uneasy or painful sensation caused by lack of food”, people’s concerns for their children;
- **BEHAVIOUR**: Among the destitute, food-seeking dominates decisions and behaviour in a way that favours short-term survival to the exclusion of much else
- **SELF ESTEEM**: low self esteem leading to poorer performance and ambitions
Economic impacts

- ECONOMIC: Reduced productivity, both from lowered energy availability for work and from lowered physical fitness resulting from malnutrition, as well as changes in risk-taking and coping strategies.
Is Food Security
and
freedom from Hunger
a Right?
Right to Food

- UN agreement signed by 150 countries including India: *The Universal Declaration of Human Rights of 1948* first recognized the **Right to food** as a human right.
- Indian Constitution guarantees Right to Life and therefore indirectly guarantees Right to Food.
- Supreme Court and NHRC have been active in various cases involving Right to Food.
Right to Food

• Ensuring that every girl, boy, woman and man enjoys adequate food on a permanent basis is not only a moral imperative and an investment with high economic returns.
• *It is the realization of a fundamental human right.*
Food Security Bill draft under circulation by GoI. Suffers from weaknesses such as:

- No clear accountability
- Lacks specificity of outcomes such as elimination of PEM, stunting wasting, low birth weights
- Does not specify a time frame (So it is open ended!)
GOI & State Policy
Food Security Schemes

- Public Distribution Scheme
- Anthyodaya Anna Yojana
- Special PDS
- Annapurna Scheme
- Noon Meal Scheme
- Integrated Child Development Scheme
- Maternal Care Scheme
- Adolescent Girls Scheme
So what do we need to do?
Our Goals

• **Guarantee** effective access and utilisation of Food Security schemes by the poor/vulnerable sections
• **Facilitate** in increasing food production/productivity especially by small and marginal farmers
"உலகவழியாக உலகின் மனிதர்கள் புடைப்பு அறிக்கை வந்தால்!

எச்சை பார்த்தி
Let us join to eliminate hunger!

Thank you!