

POVERTY AND FOOD INSECURITY: GLOBAL ESTIMATES

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Sustainable Development Goals

- Goal 1: End Poverty in All Forms Everywhere.
 - Goal 2: End Hunger, Achieve Food Security and Promote Sustainable Agriculture.
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- This presentation will focus on global poverty and food insecurity.
 - We view food insecurity as an extreme form of poverty.
 - Poverty and food insecurity should be closely linked.

Poverty Line

- Rowntree (1901): Absolute poverty line is the cost of maintaining a minimum standard of living. It includes:
 - Minimum monetary cost for food that would satisfy the average nutritional needs of families of different sizes.
 - Minimum cost of shelter, clothing, fuel and sundries.
 - Minimum cost of providing basic education to children.
 - Minimum cost of maintaining good health for all household members.

- A family is classified as poor if its total earnings are less than its absolute poverty line.

World Bank's Global Poverty Line based on 15 countries

| Country | Year | Poverty line in 2005 PPP | Poverty line in 2011 PPP |
|----------------------|------------------|-----------------------------|-----------------------------|
| Malawi | 2004-05 | 0.86 | 1.34 |
| Mali | 1988-89 | 1.38 | 2.15 |
| Ethiopia | 1999-2000 | 1.35 | 2.03 |
| Sierra Leone | 2003-04 | 1.69 | 2.73 |
| Niger | 1993 | 1.10 | 1.49 |
| Uganda | 1993-98 | 1.27 | 1.77 |
| Gambia, The | 1998 | 1.48 | 1.82 |
| Rwanda | 1999-2001 | 0.99 | 1.50 |
| Guinea-Bissau | 1991 | 1.51 | 2.16 |
| Tanzania | 2000-01 | 0.63 | 0.88 |
| Tajikistan | 1999 | 1.93 | 3.18 |
| Mozambique | 2002-03 | 0.97 | 1.26 |
| Chad | 1995-96 | 0.87 | 1.28 |
| Nepal | 2003-04 | 0.87 | 1.47 |
| Ghana | 1998-99 | 1.83 | 3.44 |
| Mean | | 1.25 | 1.90 |

New Methodology of Equivalence Poverty Line

- The poverty lines based on 2005 and 2011 PPP are said to be equivalent if they produce exactly the same poverty rates.
- There is no single poverty line from the new 2011 PPP that is equivalent to \$1.25 in 2005.
- A single poverty line is derived from a set of 101 developing countries which cover all the regions in the world. The weighted average of equivalent poverty lines for 101 countries with weights proportional to their population is recommended.

Our proposed poverty line is \$1.93 in 2011 PPP.

- The World Bank's poverty line from 15 countries is \$1.90 in 2011 PPP.
- The number of poor in the globe in 2012:
 - \$1.25 in 2005 PPP= 969.85 million
 - \$1.93 in 2011 PPP= 963.43 million
 - \$1.90 in 2011 PPP=930.88 million

Relative Mean Deviation (RMD)

- The new line based on 2011 PPP should be equivalent to the earlier bench mark of \$1.25 in 2005 PPP.
- The two lines should give the same poverty rates for all countries if the lines are perfectly equivalent.
- The degree of equivalence between the two lines can be assessed by the relative mean deviation calculated from 126 countries.
- The RMD for \$1.90 is 6.9% and for \$1.93 is 6.2%.
- Based on this criterion, our proposed line of \$1.93 performs better than the World Bank line of \$1.90.

Prevalence of Undernourishment

- FAO measures food insecurity by prevalence of undernourishment comparing calorie intake with calorie requirement of a health person.
- Calorie requirements are not fixed. They vary from person to person even controlling for age, sex and activity level. Also intra-individually for the same individual at different points in time.
- These conceptual problems make the measurement of undernourishment problematic.
- FAO's measure of food insecurity has been severely criticized.
- FAO's method exclusively focused on energy intakes and ignores other basic nutrients (e.g. protein, fat and carbohydrates) required to remain healthy.

A Balanced Food Basket

- Cost of a balanced food basket is estimated at \$1.03 per person per day in 2005 PPP and \$1.59 in 2011 PPP.
- This basket provides:
 - 2100 kilo/calories
 - 58 grams of protein
 - 38 grams of fat
 - 377 grams of carbohydrates
- These are the required nutrients for a healthy person and offer a balanced diet of an average person.
- A family is food insecure if its entitlements measured by by per capita expenditure are less than the cost of \$1.59 per person in 2011 PPP.

Table 3: Percentage and number of food-insecure persons in the world, 2002 and 2012

| Region | <u>2002</u> | | <u>2012</u> | | <u>Annual change</u> | |
|------------------------------|----------------|------------------|----------------|------------------|----------------------|------------------|
| | Percentage (%) | Number (million) | Percentage (%) | Number (million) | Percentage (%) | Number (million) |
| East Asia and Pacific | 20.85 | 368.93 | 3.81 | 72.76 | -1.70 | -296.17 |
| Europe and Central Asia | 1.66 | 7.35 | 0.26 | 1.15 | -0.14 | -6.20 |
| Latin America and Caribbean | 10.00 | 51.97 | 4.40 | 25.90 | -0.56 | -26.07 |
| Middle East and North Africa | 1.99 | 2.24 | 0.39 | 0.49 | -0.16 | -1.75 |
| South Asia | 27.07 | 380.99 | 10.02 | 162.34 | -1.71 | -218.65 |
| Sub-Saharan Africa | 48.37 | 322.18 | 33.84 | 294.63 | -1.45 | -27.55 |
| Total | 23.05 | 1,133.65 | 10.01 | 557.28 | -1.30 | -576.37 |

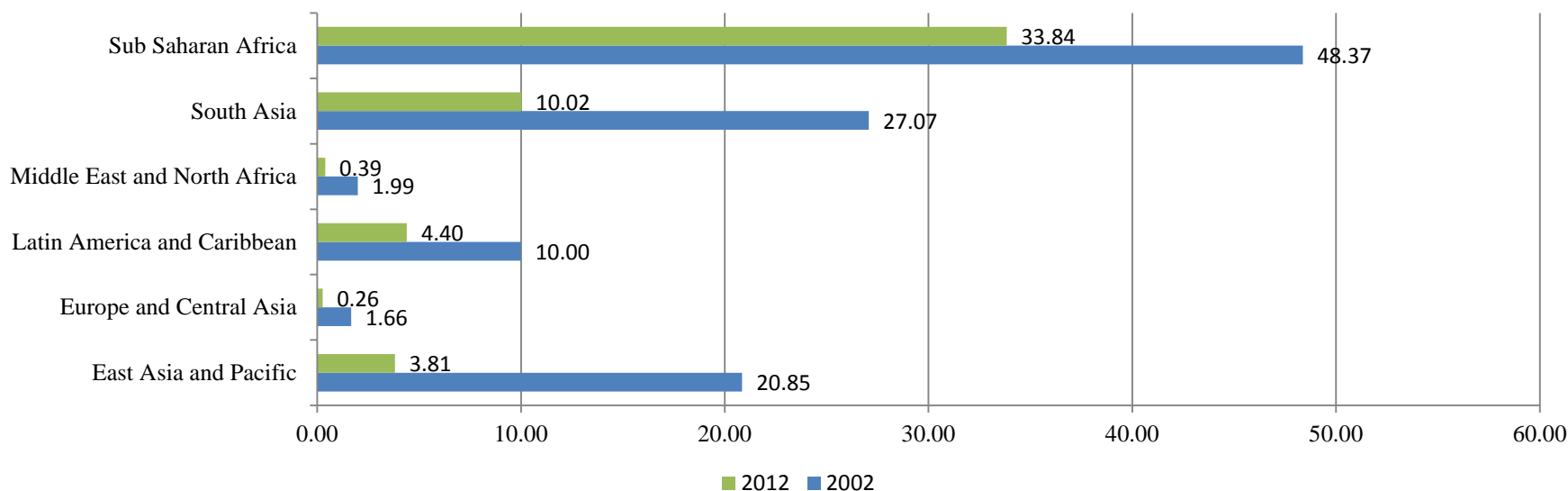


Table 4: Growth effectiveness in reducing food insecurity in the world, 2002–2012

| Region | Per capita GDP in 2002 (\$US in 2011 PPP) | Per capita GDP in 2012 (\$US in 2011 PPP) | Growth rate in per capita GDP (% per annum) | GERFI | Years |
|-------------------------------------|--------------------------------------------------|--------------------------------------------------|----------------------------------------------------|--------------|------------------------------|
| East Asia and Pacific | 12.64 | 27.58 | 7.80 | -0.22 | 2.15 |
| Europe and Central Asia | 22.41 | 35.28 | 4.54 | -0.03 | 1.82 |
| Latin America and Caribbean | 29.03 | 36.72 | 2.35 | -0.24 | 7.29 |
| Middle East and North Africa | 25.15 | 31.67 | 2.31 | -0.07 | 2.40 |
| South Asia | 7.24 | 12.51 | 5.47 | -0.31 | 5.22 |
| Sub-Saharan Africa | 6.55 | 8.85 | 3.01 | -0.48 | 17.94 |
| Total | 28.7 | 37.51 | 2.68 | -0.49 | 7.09 |

Note: GERFI = growth effectiveness of reducing food insecurity