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MEASURING POVERTY
A MULTIDIMENSIONAL PERSPECTIVE

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Why New Emphasis on Poverty Measurement?

- Economic growth is not always inclusive
- Reduction of income poverty is important but not sufficient
- MDG dashboards of indicators are dazzlingly complex
- Lack of attention in capturing joint distribution of deprivations
Recent Debates

Political critique of current metrics (Stiglitz, Sen & Fitoussi 2009)

Measures in HDR sparked interest and debate (UNDP 2010)

Post-2015 requires re-thinking Data and Measures
## Economic Growth is Not Always Inclusive

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Year</th>
<th>India</th>
<th>Bangladesh</th>
<th>Nepal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gross National Income per Capita (in International $)</strong></td>
<td>1990</td>
<td>860</td>
<td>550</td>
<td>510</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>3620</td>
<td>1940</td>
<td>1260</td>
</tr>
<tr>
<td></td>
<td>Growth (p.a.)</td>
<td>6.8%</td>
<td>5.9%</td>
<td>4.2%</td>
</tr>
<tr>
<td><strong>Under-5 Mortality</strong></td>
<td>1990</td>
<td>114.2</td>
<td>138.8</td>
<td>134.6</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>61.3</td>
<td>46.0</td>
<td>48.0</td>
</tr>
<tr>
<td></td>
<td>Change</td>
<td>-52.9</td>
<td>-92.8</td>
<td>-86.6</td>
</tr>
<tr>
<td><strong>DPT Immunization Rate</strong></td>
<td>1990</td>
<td>70</td>
<td>69</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>2010</td>
<td>72</td>
<td>95</td>
<td>82</td>
</tr>
<tr>
<td></td>
<td>Change</td>
<td>2</td>
<td>26</td>
<td>39</td>
</tr>
<tr>
<td><strong>Adult Pop. with no Education</strong></td>
<td>1990</td>
<td>51.6</td>
<td>55.5</td>
<td>65.8</td>
</tr>
<tr>
<td></td>
<td>2010</td>
<td>32.7</td>
<td>31.9</td>
<td>37.2</td>
</tr>
<tr>
<td></td>
<td>Change</td>
<td>-18.9</td>
<td>-23.6</td>
<td>-28.6</td>
</tr>
<tr>
<td><strong>Access to Improved Sanitation (rural pop)</strong></td>
<td>1990</td>
<td>7</td>
<td>34</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>2010</td>
<td>23</td>
<td>55</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Change</td>
<td>16</td>
<td>21</td>
<td>20</td>
</tr>
</tbody>
</table>

Source: Alkire and Seth (2013). The table is inspired by Drèze and Sen (2011), with minor additions.
Eradicating Income Poverty is not Sufficient

Reduction in income poverty does not reduce other MDG deprivations automatically.  

*Source: World Bank Data & Global Monitoring Report Progress Status, 2013*
MDG Dashboards

Millennium Development Goals (UN, 2000): 48 indicators to monitor 18 targets to achieve the 8 goals

- Proportion of population below $1 (PPP)/day
- Share of women in wage employment in the non-agricultural sector
- Net enrolment ratio in primary education
- Proportion of tuberculosis cases detected and cured under DOTS
- Proportion of seats held by women in national parliament
- Literacy rate of 15-24 years-old
- Maternal mortality ratio
- Under five mortality rate
- Proportion of births attended by skilled personnel
- Prevalence of underweight children under 5 years of age
- Prevalence of deaths associated with malaria
- Prevalence of deaths associated with malaria
Disadvantages of Dashboards

Lack of a single outline figure as GDP
  – Stiglitz, Sen, and Fitoussi (2009)

Ignore identification
  – Who is poor? How many poor people are there? How poor are they? (Alkire, Foster and Santos, 2011)

Ignore joint distribution even when possible to capture
  – Alkire, Foster and Santos (2011)
Joint Distribution of Deprivations

A simple example (deprived=1, non-deprived=0)

<table>
<thead>
<tr>
<th>MDG1</th>
<th>MDG2</th>
<th>MDG3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Case 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>In both cases, 25% (1/4) deprived in each indicator</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MDG1</th>
<th>MDG2</th>
<th>MDG3</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Case 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUT, in Case 2, one person is severely deprived</td>
</tr>
</tbody>
</table>
Need for a Meaningful Measure

What Can a Meaningful Multidimensional Poverty Measure Do?

- Provide an overview through a single summary measure
- Show progress quickly and directly: Monitoring/Evaluation
- Inform planning and policy design
- Can be used as a targeting instrument (distinguish the poorest from the poor)
- Can be decomposed by regions, social groups
- Can be broken down by dimensions to see contributions
A Meaningful Multidimensional Poverty Measure

One such measure with certain meaningful properties has been proposed by Alkire and Foster (2011 *JPubE*) – The Adjusted Headcount Ratio
Steps of the Adjusted Headcount Ratio

1. **Select** dimensions, indicators and weights
2. Set deprivation cutoff for each indicator
3. **Identify** all deprivations in the society
4. Obtain deprivation counts/scores for each unit of analysis (households or persons)
5. Set a poverty cutoff to identify who is poor
5. Calculate Adjusted Headcount Ratio

Note: Terms deprived and poor are not synonymous
The Adjusted Headcount Ratio ($M_0$)

The Adjusted Headcount Ratio can be expressed as:

$$M_0 = H \times A$$

$H$: The percent of people identified as multidimensionally poor, it shows the *incidence* of multidimensional poverty.

$A$: The average of the deprivation counts/scores of the poor people; it shows the *intensity* of people’s poverty.
Global MPI
Global Multidimensional Poverty Index (MPI)

An adaptation of the $M_0$, was introduced by Alkire and Santos (2010) and UNDP (2010) with following indicators and weights:

3 Dimensions

- 10 Indicators
  - Years of Schooling (1/6)
  - School Attendance (1/6)
  - Education (1/3)
  - Child Mortality (1/6)
  - Nutrition (1/6)
  - Health (1/3)
  - Cooking Fuel
  - Sanitation
  - Water
  - Electricity
  - Floor
  - Asset Ownership (1/18 Each)

Standard of Living (1/3)
Who is Identified as Multidimensionally Poor?

A person is poor if she is deprived in 1/3 or more of the weighted indicators (poverty cutoff = 1/3) (censor the deprivations of the non-poor)
Half of the world’s MPI people live in South Asia, and 29% in Sub-Saharan Africa (MPI 2013)

MPI poor people by region (104 Developing Countries)
Comparing the Headcount Ratios of MPI Poor and $1.25/day Poor

Height of the bar: MPI Headcount Ratio
Height at ‘•’ : $1.25-a-day Headcount Ratio

MPI vs. $1.25-a-day
How Does This Help in National Policy Analysis?
Reduction in MPI across Indian States (99-06)

We combined Bihar and Jharkhand, Madhya Pradesh and Chhattisgarh, and Uttar Pradesh and Uttarakhand (Alkire and Seth 2013)

Slower reductions in initially poorer states

Stronger reductions in Southern states
Comparison with Change in Income Poverty (p.a.) (99-06)
Absolute Reduction in Poverty Across Sub-Groups (99-06)

Significant reduction for all sub-groups

Absolute Change (99-06) in MPI-I

Muslim (*) [0.32]
Hindu (***)[0.306]
Christian (***)[0.196]
Sikh (***)[0.115]
ST (***)[0.458]
SC (***)[0.378]
OBC (***)[0.301]
General (***)[0.229]
Rural (***)[0.368]
Urban (***)[0.116]
Improvement in Poverty: $H$ or $A$?

(Alkire and Seth 2013)
Policy Relevance: Incidence vs. Intensity

Country A:
Poverty reduction policy (without inequality focus)

Country B:
Policy oriented to the poorest of the poor

Country B reduced the intensity of deprivation among the poor more. The final index reflects this.

Source: Roche (2013)
How Poor the Poor Are?

Madagascar (2009, DHS)
MPI = 0.357
H = 67%

Rwanda (2010, DHS)
MPI = 0.350
H = 69%
Concluding Remarks
How Can MPI Help?

- Can reflect on joint distribution of deprivations
- National MPIs can be tailored to context & priorities
- National MPI can be reported like national income poverty measure
- Political incentives from MPI are more direct

- **Data needs:** Global MPI uses only 39 of 625 questions in Demographic Health Survey
Applications of Adjusted Headcount Ratio

• Official Multidimensional Poverty Measures
  • Mexico, Colombia, Bhutan, Philippines and Brazil (state of Minas Gerais)

• Progressing toward official measures
  • Chile, China, Ecuador, El Salvador, Malaysia, Nigeria and Vietnam, + Many others in progress

• Other adaptations
  • Gross National Happiness, Women’s Empowerment, Child Poverty

• Islamic Development Bank will discuss about supporting the MPI at 2014 Annual Meeting
The Multidimensional Poverty Peer Network

Launched in June 2013 at University of Oxford with:

- President Santos of Colombia
- Ministers from 16 countries
- A lecture from Professor Amartya Sen

Supported by the German Federal Ministry for Economic Cooperation and Development (BMZ)
Participants from 25+ governments and institutions

Connects policymakers engaged in exploring or implementing multidimensional poverty measures

From: Angola, Bhutan, Brazil, Chile, China, Colombia, ECLAC, Ecuador, El Salvador, Dominican Republic, Germany, India, Iraq, Malaysia, Mexico, Morocco, Mozambique, Nigeria, OECD, OECS, OPHI, Peru, Philippines, SADC, Tunisia, Uruguay and Vietnam
Thank you
National Multidimensional Poverty Measures ~

Growing globally
Mexico: A national Multidimensional Poverty Measure

Current Income per capita

Six Social Rights:
- Education
- Health
- Social Security
- Housing
- Basic services
- Feeding

Population

Income

Wellbeing

Deprivations

Social Rights
Colombia: Multidimensional Poverty Index (MPI-Colombia)

Used to allocate resources in national development plan

- Educational Conditions: 0.2
  - Schooling: 0.2
    - School Attendance: 0.2
    - At the right level: 0.2
    - Access to infant services: 0.2
    - No Child Labour: 0.2
  - Illiteracy: 0.1

- Childhood & Youth: 0.2
  - School Attendance: 0.2
  - At the right level: 0.2
  - Access to infant services: 0.2

- Work: 0.2
  - Absence of long-term unemployment: 0.1
  - Formal work: 0.1

- Health: 0.2
  - Coverage: 0.1
  - Access to health care given a necessity: 0.1

- Housing & Public Services: 0.2
  - Improved Water: 0.2
  - Sanitation: 0.2
  - Flooring: 0.2
  - Exterior Walls: 0.2
  - Overcrowding: 0.2

Used to allocate resources in national development plan.
Bhutan: Multidimensional Poverty Index

A national measure with three dimensions and 13 indicators, tailored to the national context:

**Health:** Child mortality and food security

**Education:** Years of schooling and school attendance

**Living standards:** Electricity, sanitation, water, housing material, cooking fuel, road access, assets, land ownership and livestock ownership.
Philippines: Multidimensional Poverty in the National Development Plan

- Philippines Development Plan 2011-2016 updated with focus on inclusive growth

- Adds new multidimensional poverty indicator

- And target to reduce multidimensional poverty reduction to 16-18 percent by 2016
Chile: Expert Commission Recommends Multidimensional Poverty Measure

• President Piñera appointed an Expert Commission on Poverty Measurement

• Recommended the creation of a new multidimensional measure of vulnerability and extreme poverty to better capture the full reality of poverty in a high-income context.

• Five dimensions: education; health; employment and social security; housing; and the community, environment and security.
Minas Gerais, Brazil: Multidimensional Poverty Reduction Programme

Programa TRAVESSIA

- Secretary of State for Social Development
- Secretary of State for Work and Employment
- Secretary of State for Regional Development
- Secretary of State for Health
- Secretary of State for Education
Other Applications of the Alkire Foster Method

- National Measures
  - China, El Salvador, Malaysia, Vietnam, Ecuador, Nigeria
  - + Many others in progress

- Adaptations
  - Gross Nat’l Happiness
  - Women’s Empowerment
  - Child Poverty
  - Post-2015 discussions
The Multidimensional Poverty Peer Network (MPPN) ~

Created in response to growing demand
A post-2015 Multidimensional Poverty Index - MPI2015+

The MPPN has developed a proposal for an MPI2015+ to help ensure poverty is eradicated in all its forms after 2015.