Multidimensional Poverty Index - Applications Colombia

Bruce Mac Master
Director
Department for Social Prosperity

Oxford, June 2013
Our starting point: Improving the instruments and methodologies of poverty measurement

Motivation: Designing a strategy for the reduction of poverty and inequality based on a complete approach using income and multidimensional measures
Institutional agreement on the measurement of poverty

The National Department of Statistics acquired the responsibility of producing the official poverty measurements on a year basis.

Technical and methodological decisions are defined at the experts-committee (NPD, DSP, external experts)
A complete strategy for the reduction of poverty

National Development Plan 2010-2014

“Prosperity for all”
Two channels for the reduction of poverty

Indirect Channel

- Growth (strategic sectors)
- Increase income
- Income poverty and inequality (GINI)

Direct Channel

- Social Protection (basic services)
- DSP (Social Inclusion)

Fuente: Bhagwati
SECTOR OF SOCIAL INCLUSION
Objective: guarantee equality in opportunities, eradicate extreme poverty and ameliorate the living conditions of the victims and most vulnerable households.
- Colombia

- Education
- Childhood & youth
- Labour
- Health
- Public utilities & housing conditions

www.dps.gov.co
5 dimensions & 15 variables

**Education**
- Educational achievement
  - Literacy (20%)
  - Formal education (5%)
  - No school lag (10%)
  - Access to child care services (20%)
  - Absence of child employment (5%)

**Childhood & youth conditions**
- School attendance (20%)
- No school lag (10%)
- Access to child care services (20%)
- Absence of child employment (5%)

**Labour**
- Absence of long-term unemployment (20%)
- Formal employment (10%)

**Health**
- Health insurance (20%)
- Access to health care services when needed (10%)

**Public utilities & housing conditions**
- Access to improved drinking water (20%)
- Adequate elimination of sewer waste (10%)
- Adequate flooring (10%)
- Adequate walls (4%)
- No critical overcrowding (4%)

Fuente: Angulo, Pardo y Díaz (2011)
We are on the right track
Sustained poverty reduction

Pobreza monetaria

Pobreza extrema monetaria

Pobreza Multidimensional

Fuente: DNP'SPSCV

www.dps.gov.co
From 2010 to 2012, 1.7 million persons overcame income poverty and 700 thousand extreme poverty.

On the other hand, 1.3 million persons were no longer multidimensionally poor.
To what do we owe these good results?
2010 Alerts:
- Habitability
- School achievement
- Early childhood care
- Income generation
2010 Alerts:
- Habitability
- School achievement
- Early childhood care
- Income generation

2010-2011 Policies:
- Free tuition fees in primary and secondary education
- National strategy for childhood care “De cero a Siempre”
2011 Alerts:
- Habitability
- Lower rhythm of multidimensional poverty reduction
2011 Alerts:
- Habitability
- Lower rhythm of multidimensional poverty reduction
- Low budget execution?

2011-2012 policies:
- 100,000 free housing solutions for poor households
2012 Alerts:
- Lower rhythm of income poverty reduction
- Gaps of rural to urban income poverty maintained
2010 2011 2012 2013

NDP

2012-2013 policies
- Improved CCT program “Más Familias en Acción “
  (Higher amount and beneficiaries on rural areas)
- Food Security Programa: Colombia Growyh Without Hunger

2012 Alerts:
- Lower rhythm of income poverty reduction
- Gaps of rural to urban income poverty maintained

www.dps.gov.co
2013 Alerts:
-Social mobility
-Youth unemployment
NDP

2010 2011 2012 2013

2012-2013 policies
• CCT to increase human capital and youth employment
  “Jóvenes en Acción”

2013 Alerts:
- Social mobility
- Youth unemployment

www.dps.gov.co
MPI - Colombia

- 4 key aspects:

1. Reflects the objectives of social policy
2. Strategically designed for it to include all public policy sectors
3. Practical instrument for monitoring public policy
4. Useful alerts for decision-making at a short notice
MPI implied an important achievement on public policy coordination

Shared responsibilities on the strategy for poverty reduction
High Official Commission

Monitoring the national strategy for the reduction of poverty using official poverty measures

- **Leaders**
  - Presidency (Mandatory presence of the President of Colombia)
  - Department for Social Prosperity
  - National Planning Department

- **Permanent members**
  - Ministry of Health
  - Ministry of Labour
  - Ministry of Housing
  - Ministry of Agriculture
  - Ministry of Education
  - Ministry of Finance
Goals in the reduction of poverty using a complete profile (MPI & income)

<table>
<thead>
<tr>
<th>Poverty and Inequality</th>
<th>Base Line 2009</th>
<th>2011</th>
<th>Alert</th>
<th>2012</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income poverty (% LP)</td>
<td>40.2%</td>
<td>34.1%</td>
<td></td>
<td>32.7%</td>
<td>32%</td>
</tr>
<tr>
<td>Extreme income poverty(%LI)</td>
<td>14.4%</td>
<td>10.6%</td>
<td></td>
<td>10.4%</td>
<td>9.5%</td>
</tr>
<tr>
<td>IPM (Multidimensional poverty) Base line 2008</td>
<td>34.6%</td>
<td>29.4%</td>
<td></td>
<td>27.0%</td>
<td>22.5%</td>
</tr>
<tr>
<td>Graduated families from extreme poverty (Unidos)</td>
<td>0</td>
<td>581</td>
<td></td>
<td>46,000</td>
<td>150,000</td>
</tr>
<tr>
<td>Gini (Income)</td>
<td>0.557</td>
<td>0.54</td>
<td></td>
<td>0.539</td>
<td>0.544</td>
</tr>
</tbody>
</table>

FUENTE: DNP-DDS-SPSCV
Tracking MPI progress:

from multidimensional to multisectoral

15 Goals - Sectoral accountability
### Sectoral goals

For accomplishing the strategy

<table>
<thead>
<tr>
<th>Pobreza</th>
<th>Línea Base PND 2008</th>
<th>Dato 2011</th>
<th>Dato 2012</th>
<th>Análisis</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MPI (Multidimensional Poverty)</strong></td>
<td>34.7%</td>
<td>29.4%</td>
<td>27.0%</td>
<td></td>
<td>22.5%</td>
</tr>
<tr>
<td><strong>A</strong></td>
<td>Educational achievement (≥15 yrs)</td>
<td>58.8%</td>
<td>54.6%</td>
<td>53.1%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Literacy (≥15 yrs)</td>
<td>14.2%</td>
<td>12.0%</td>
<td>12.1%</td>
<td></td>
</tr>
<tr>
<td><strong>B</strong></td>
<td>School attendance (6-16)</td>
<td>5.4%</td>
<td>4.8%</td>
<td>4.1%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No school lag (7-17)</td>
<td>33.4%</td>
<td>34.1%</td>
<td>33.3%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Access to child care services (0-5)</td>
<td>12.1%</td>
<td>10.8%</td>
<td>9.4%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Children not working (12-17)</td>
<td>5.5%</td>
<td>4.5%</td>
<td>3.7%</td>
<td></td>
</tr>
<tr>
<td><strong>C</strong></td>
<td>Long-term unemployment</td>
<td>9.6%</td>
<td>9.1%</td>
<td>10.0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Formal employment</td>
<td>80.6%</td>
<td>80.4%</td>
<td>80.0%</td>
<td></td>
</tr>
<tr>
<td><strong>D</strong></td>
<td>Health insurance</td>
<td>24.2%</td>
<td>19.0%</td>
<td>17.9%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Access to health services</td>
<td>8.9%</td>
<td>8.2%</td>
<td>6.6%</td>
<td></td>
</tr>
<tr>
<td><strong>E</strong></td>
<td>Access to water source</td>
<td>12.9%</td>
<td>12.0%</td>
<td>12.3%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adequate sewage system</td>
<td>14.1%</td>
<td>14.5%</td>
<td>12.1%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adequate floors</td>
<td>7.5%</td>
<td>6.3%</td>
<td>5.9%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adequate external walls</td>
<td>3.1%</td>
<td>3.2%</td>
<td>2.2%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No critical overcrowding</td>
<td>15.7%</td>
<td>14.2%</td>
<td>13.1%</td>
<td></td>
</tr>
</tbody>
</table>

***Change 2011-2012 est. signifcant

**FUENTE:** DANE

[www.dps.gov.co](http://www.dps.gov.co)
If every ministry target beneficiaries accordingly and spends the committed resources, the official goal will be achieved.

The MPI will decrease (12 p.p) from 34.6% in 2008 to 22% 2014 (more than 3 million people out of poverty)
A useful tool for public policy implementation

Applications
1

Geographical Targeting
(Municipal Poverty Maps)
Municipal MPI Colombia
Headcount ratio, urban-rural areas, 2005

MPI proxy based on Census Data 2005
An example of geographical targeting using MPI

Conditional Cash Transfer Program
“Más Familias en Acción”

2.7 million families
Re targeting program’s beneficiaries: approximating to municipal MPI

Initial distribution of beneficiaries
Re targeting program’s beneficiaries: approximating to municipal MPI

New distribution of beneficiaries

National - MPI
One example

Differentiating transfer amounts according to municipal MPI

Higher amounts on the poorer and rural areas

$ Colombian pesos

<table>
<thead>
<tr>
<th>MPI Municipal Head Count Ratio</th>
<th>Health transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>low</td>
<td>$ 2,752</td>
</tr>
<tr>
<td>Middle</td>
<td>$ 14,508</td>
</tr>
<tr>
<td>High</td>
<td>$ 20,341</td>
</tr>
<tr>
<td>Very high</td>
<td>$ 34,272</td>
</tr>
</tbody>
</table>
Targeting beneficiaries according to specific dimension deprivations
Targeting beneficiaries identifying:

Where?
What?
To whom?

Using MPI
Different types of social programs depending on multidimensional poverty incidence
Methodology for measuring “graduation” from extreme poverty using MPI

Safety Net Program

www.dps.gov.co
A family is “graduated” from **unidos** if:

**Sufficient condition:**

Not in extreme income poverty & Not multidimensionally poor
Adjusted - MPI for indigenous groups
• Revising the MPI (missing dimensions, cutoffs or weights) in order to adapt the index to the conditions of indigenous population of Colombia

• The objective is to have a pertinent MPI useful for the design of public policy targeting this population
Public policy effects micro-simulations
The method of micro data imputation may be used in the construction of counterfactual scenarios to evaluate the effect of public policy on the MPI behavior.