Multidimensional Poverty and Inclusive Growth in Mozambique

Paola Ballon       Jose Cardosso       Finn Tarp

Research in Progress

November 27, 2018
Acknowledgments

We are very grateful to INE, Mozambique, in particular to Dr. Monica Magaua, for providing us with the GDP figures for this paper.
Background

The assessment of poverty in Mozambique is inscribed in the 2010-2014 Poverty Reduction Action Plan (PARP), which is the medium-term strategy of the Government of Mozambique for putting into operation the Five-Year Government Program (2010–14).

This medium-term instrument is part of the National Planning System (SNP) and is aligned with the vision of Agenda 2025.

A key aspect of this Agenda is to advocate for policies where economic growth could lead to greater reductions in poverty.
Aim of this paper

This paper aims to provide a descriptive assessment of multidimensional poverty and growth inclusiveness in Mozambique between the period of 2002 to 2014.

For this purpose, it employs the Inclusive Growth Framework proposed by Foster (2013) where poverty-growth inclusiveness, measured through elasticities, is decomposed as:

• vertical inclusiveness (over time),
• horizontal inclusiveness (by province)
• dimensional inclusiveness (by dimension of poverty).
Outline

I. Measurement of Poverty
II. The Inclusive Growth Framework
III. Results

Concluding Remarks
Poverty Measurement in Mozambique

This paper uses the latest assessment of multidimensional poverty in Mozambique (4th Poverty Report).

In accordance with SDG 1 that aims for the eradication of poverty in all its forms, it includes an evaluation of monetary and non-monetary poverty for the period 1996 – 2014.

Our focus in this paper: 2002 -2014.
I. Measurement

The poverty reports use nationally representative household surveys that allow disaggregation by area and by province, referred to as:

Household Survey: Inquérito aos Agregados Familiares (IAF) – 2002;


To measure multidimensional poverty the 4th Poverty report applies the Counting Approach proposed by Alkire and Foster in 2011. This allows quantifying incidence and intensity of multidimensional poverty.
I. Measurement: AF Counting Approach

The AF method identifies the poor using two forms of cutoff one within a dimension, and one across dimensions.

The dimensional cutoff (denoted by $z$) is a traditional dimension-specific deprivation cutoff, that identifies a person as deprived if she falls below a (dimensional-indicator) poverty line.

The cross-dimensional cutoff (denoted by $k$) states how widely deprived a person must be in order to be identified as multidimensionally poor, by counting the dimensions in which she is deprived.
I. Measurement: AF Counting Approach

This method proposes a family of measures that can reflect the incidence, depth and severity of multidimensional poverty, among which the adjusted headcount ratio ($M_0$) is the mostly widely used.

$M_0$ is the product of two indices: $M_0 = H \times A$

$H$ is the multidimensional headcount ratio. This is the percentage of people. It shows the incidence of multidimensional poverty.

$A$ is the average proportion of deprivations that the poor experience at the same time (overlap). It shows the intensity of people’s poverty.

$M_0$ is additive decomposable by subgroup and by dimension/indicator.
## I. Multidimensional Poverty: Normative Considerations (k =60%)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Indicator</th>
<th>Deprived if…</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Primary education</td>
<td>No household member aged 10 years or older has completed primary schooling.</td>
<td>1/6</td>
</tr>
<tr>
<td><strong>Health</strong></td>
<td>Improved Drinking Water</td>
<td>The household does not have access to a clean water source such as piped water (in or outside the household) public tap, borehole or pump, bottled water, or mineral water.</td>
<td>1/6</td>
</tr>
<tr>
<td></td>
<td>Improved Sanitation</td>
<td>The household does not use some type of flush toilet or latrine, or ventilated improved pit or composting toilet.</td>
<td>1/6</td>
</tr>
<tr>
<td><strong>Housing</strong></td>
<td>Standard coat of roof/walls</td>
<td>The household does not have slab of concrete, tile, or plates (or a zinc lusalite)</td>
<td>1/6</td>
</tr>
<tr>
<td></td>
<td>Electricity</td>
<td>The household has no electricity.</td>
<td>1/6</td>
</tr>
<tr>
<td><strong>Durables</strong></td>
<td>Asset ownership</td>
<td>The household does not own at least three durable goods: radio, TV, telephone, computer, printer, bed, refrigerator, freezer, bicycle or motorbike.</td>
<td>1/6</td>
</tr>
</tbody>
</table>
II. Inclusive Growth Framework

Foster (2013) proposes a family of growth elasticities to assess growth inclusiveness.

- **Vertical inclusiveness** – annualized rates:

  \[ e(M_0; Y) = - \frac{\delta M_0}{\delta Y}, \quad e(H; Y) = - \frac{\delta H}{\delta Y}, \quad e(A; Y) = - \frac{\delta A}{\delta Y}, \]

- **Horizontal inclusiveness** – annualized rates (by province \( l \))

  \[ e(M_0^l; Y^l) = - \frac{\delta M_0^l}{\delta Y^l}, \quad e(H^l; Y^l) = - \frac{\delta H^l}{\delta Y^l}, \quad e(A^l; Y^l) = - \frac{\delta A^l}{\delta Y^l} \]

- **Dimensional inclusiveness** – annualized rates (by dimension/indicator \( j \))

  \[ e(Ch_j; Y) = - \frac{\delta Ch_j}{\delta Y}, \quad e(Ch_j^l; Y^l) = - \frac{\delta Ch_j^l}{\delta Y^l}, \]


III. Results - MD Poverty

- 2002

Maputo provincial: 87%, 76%
Nacional: 87%, 76%
III. Results – MD Poverty

- 2014
III. Annualised rates – V/H inclusiveness

Nacional: 4.5%, -3.2%

GROWTH 2002-2014

Manica, Niassa, Zambézia, Sofala, Nampula, Tete, Cabo Delgado, Gaza, Inhambane
III. Horizontal inclusiveness

The graph illustrates the horizontal inclusiveness of various provinces in Mozambique, with elasticities shown for Regional Growth-A, Regional Growth-H, and Regional Growth-M0. The provinces are ordered from top to bottom as follows: Nacional, Maputo cidade, Maputo província, Gaza, Inhambane, Sofala, Manica, Tete, Zambézia, Nampula, Cabo Delgado, and Niassa. The elasticities are represented in bars, with negative values indicating less inclusiveness and positive values indicating more inclusiveness. The elasticities range from approximately -6.0 to 1.0, with specific values marked on the x-axis.
III. Dimensional inclusiveness: Censored headcounts

![Radial Chart - Dimensional Inclusiveness]

- **Schooling**
  - 2002: 52.0%
  - 2014: 67.9%

- **Assets**
  - 2002: 70.9%
  - 2014: 75.7%

- **Water**
  - 2002: 54.4%
  - 2014: 68.2%

- **Electricity**
  - 2002: 40.6%
  - 2014: 51.7%

- **Sanitation**
  - 2002: 43.2%
  - 2014: 54.4%

- **Housing**
  - 2002: 29.9%
  - 2014: 49.6%
III. Dimensional inclusiveness:

Elasticities – National level

<table>
<thead>
<tr>
<th>Category</th>
<th>Elasticity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assets</td>
<td>-1.39</td>
</tr>
<tr>
<td>Electricity</td>
<td>-0.97</td>
</tr>
<tr>
<td>Housing</td>
<td>-0.95</td>
</tr>
<tr>
<td>Sanitation</td>
<td>-1.11</td>
</tr>
<tr>
<td>Water</td>
<td>-0.94</td>
</tr>
<tr>
<td>Schooling</td>
<td>-1.06</td>
</tr>
</tbody>
</table>

2008-2014
III. Dimensional inclusiveness: Elasticities by province

Elasticities by province:

- Niassa
- Cabo Delgado
- Nampula
- Zambézia
- Tete
- Manica
- Sofala
- Inhambane
- Gaza
- Maputo provincia
- Maputo cidade
- Nacional

Growth 2002-2014

Legend:
- Schooling
- Water
- Sanitation
- Housing
- Electricity
- Assets
- Growth 2002-2014
Concluding Remarks

The fourth poverty assessment for Mozambique indicates:

• A significant reduction in multidimensional incidence rates
• A reduction in the intensity of multidimensional poverty, although less pronounced.

Vertical inclusiveness indicates that incidence of poverty is more sensitive to growth compared to intensity.
Concluding Remarks

Horizontal inclusiveness indicates that provinces in the South are those where growth has had larger impacts (show larger elasticities).

Dimensional inclusiveness at the national level indicate that assets, sanitation and schooling are the indicators more sensitive to growth. At the provincial level, dimensional inclusiveness exhibits greater variation with Manica showing greater growth-gains in education.
Thanks.