Comments on
Mozambique: 'The war ended 15 years ago but we are still poor'
authored by Joseph Hanlon

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Abstract:

This note comments on a recent paper entitled "Mozambique: 'The war ended 15 years ago but we are still poor'" authored by Joseph Hanlon (2007). There is no doubt that Mozambique remains poor. The questions center on trends in the living conditions of the population and selective presentation of poverty statistics. Hanlon charges that donors are so desperate for a success story that they "are highly selective in the choice of data, highlighting the most positive figures while ignoring equally valid information that paints a different picture." He also asserts that "the declines in poverty are exaggerated" implying that the government of Mozambique is misleading its people and the international community with respect to the evolution of the poverty situation.

Hanlon's primary assertions do not withstand scrutiny. The decline in poverty observed between 1996-97 and 2002-03, based on a consumption metric, was not produced by a wholesale shift to cassava in the consumption baskets that underlie the poverty lines. This can be confirmed via simple calculation of the share of calories provided by cassava and derived products in the food consumption baskets. Real GDP did not 'fall everywhere' between 2000 and 2004. The International Poverty Center report is far more balanced than he suggests.

There are points of agreement. Hanlon correctly points to child nutrition and income distribution as key issues where performance has not been as positive as desired. However, it is difficult to argue that these issues have been hidden via selective presentation of statistics. The issues of child nutrition and income distribution received detailed treatment in, amongst other publications, the Mozambican Poverty Reduction Strategy Paper, the most prominent possible publication. Overall, Hanlon's paper itself is evidence of the array of information that is publicly available. He draws from a number of publications based on a series of different national survey instruments.

The poverty monitoring program in Mozambique is fairly active by developing country standards; nevertheless, it has now been more than four years since the most recent demographic and health and household budget surveys were in the field. An agricultural income survey was conducted in 2005; however, disentangling the implications of drought in 2005 from general trends is difficult. This relative paucity of recent information on poverty leads to unproductive debate on poverty trends. For this and other reasons, a more active poverty monitoring program is proposed.

Comments on

Mozambique: 'The war ended 15 years ago but we are still poor'

1 Introduction

This note comments on the above cited paper authored by Joseph Hanlon (2007). Comments focus on the evolution of poverty in Mozambique. This note is structured as follows. Section 2 highlights broad areas of agreement. In section 3, the separation of levels and trends is discussed. Section 4 discusses selected specific areas of disagreement. In section 5, selected specific areas of agreement are presented. Section 6 concludes and section 7 offers some policy conclusions with respect to information systems.

2 Broad Agreement

Mozambique remains a poor country by almost any standard. All of the available data (GDP per capita, consumption, assets, access to health and education services, infant mortality, access to clean water, child nutrition, sanitation, maternal mortality, and vulnerability to name only a few) point to high levels of deprivation for large shares of the population. This reality is reflected in the latest *Human Development Report* (UNDP 2007) where Mozambique ranks 172 out of the 177 countries considered for the Human Development Index (HDI). It bears emphasizing that there is no disagreement with respect to levels: they are low, which is why the fight against poverty remains the central platform of government. The question revolves around trend.

3 Trends Versus Levels

Distinguishing between level and trend in communicating progress in the fight against poverty has posed a significant challenge for the government. Data on trends in the living conditions of the population have been largely, but not uniformly, positive. Nevertheless, due primarily to the very low initial base, levels remain low. It turns out to be more difficult to communicate simultaneously a positive trend and a low level than one might imagine *a priori.*

The example of education helps to illustrate the point. Hanlon points out that "there has been a huge expansion of education" [in the post war period] (p. 17). This is a widely shared view (see, for example, Jones et al. (2006) and World Bank (forthcoming)). Yet, for Mozambique, the education component of the HDI ranks Mozambique at 166 out of 177. The level of the education index remains well below the average for the least developed countries and for sub-Saharan Africa (UNDP 2007). So, even in an area posting large gains, there remains a very long way to go to achieve even the average for developing countries.

4 Specific Disagreements

Hanlon charges that donors are so desperate for a success story that they "are highly selective in the choice of data, highlighting the most positive figures while ignoring equally valid information that paints a different picture" (Hanlon 2007, p. 12). He also asserts that "the declines in poverty are exaggerated" (p. 12) implying that the government of Mozambique is misleading its people and the international community with respect to the evolution of the poverty situation. We investigate these claims.

Section 1 of the paper by Hanlon considers primarily the period up to 1992. We focus on section 2, which considers the post-war period. As the introduction to section 2 sets forth the main arguments of the section, we focus on the four major points that are presented by Hanlon in the introduction to section 2.

4.1 Point 1: Declines in Poverty Are Exaggerated

The charge that government exaggerated poverty declines between 1996-97 and 2002-03 on a consumption based metric is further explained on pages 14-15 of Hanlon. The argument is that a steeper reduction in poverty was produced by substituting cheap cassava for maize in the food basket and thus driving down the level of the poverty line in 2002-03. While cassava is an excellent source of calories, it is less nutritious than maize; hence the switch is not justified.

Two points merit mention. First, the second national poverty assessment report (DNPO et al 2004) never asserts that cassava prices fell everywhere. A diagram (p. 11) showing introductory theory of consumer choice was provided in order to illustrate the impacts of a change in relative price. To motivate the example, a change in the relative price of maize flour to cassava flour was discussed with the cassava flour price falling. However, this example was for expositional purposes only.

Second, Hanlon asserts that the baskets for 2002-03 contain a much greater weight of cassava for the purposes of meeting calorie needs compared with those from 1996-97; however, the exact changes are not presented in his paper. Changes in the baskets in terms of calories provided by cassava between those derived in 1996-97 and those derived in 2002-03 are presented in Table 1.[1] The Table shows that, nationwide, cassava did represent a higher share of total calories in the poverty line baskets for 2002-03 (18.3 percent) compared with 1996-97 (15.5 percent).[2]

[1] A complete description of the approach for measuring poverty can be found in DNPO et al. (2004).
[2] Population weights from 2002-03 are used to obtain all means.

Table 1: Share of cassava in total calories for the food baskets 1996-97 and 2002-03.

	Spatial Domain	1996	2002
Rural	Niassa and Cabo Delgado-rural	13.2	19.9
Zones	Nampula-rural	40.0	29.2
	Sofala and Zambezia-rural	20.3	25.7
	Manica and Tete-rural	0.8	0.0
	Gaza and Inhambane-rural	21.0	15.1
	Maputo Province-rural	5.5	5.5
Urban	Niassa and Cabo Delgado-urban	1.1	12.1
Zones	Nampula-urban	29.0	50.1
	Sofala and Zambezia-urbana	1.7	13.0
	Manica and Tete-urbana	1.1	0.0
	Gaza and Inhambane-urbana	2.3	11.7
	Maputo Province-urban	2.1	2.1
	Maputo City	1.5	1.5
Aggregates	Rural	19.0	19.0
	Urban	8.1	16.9
	National	15.5	18.3

Note: As explained in DNPO et al (2004), the fixed bundle approach was applied to Maputo Province and Maputo City. Hence, the share of cassava in total calories in those domains remained fixed.

Closer examination reveals that this growth in cassava content was driven entirely by urban zones. In rural zones, the share of cassava in total calories provided by the food baskets stayed the same (it actually declined very marginally). This is important. The bulk of the population lives in rural areas, the rural population is more likely to be poor, and larger drops in poverty were observed in rural versus urban areas for the period 1996-97 to 2002-03. The reductions in poverty in rural areas, and hence the large majority of the poverty reductions registered nationwide, plainly did not result from a wholesale shift to cassava.

In urban areas, the food bundles reflect growth in cassava consumption on average. In three of the four urban spatial domains where growth is registered, cassava consumption passes from very low levels (a maximum of 2.3 percent) to about 12 percent of calories supplied. These changes are reasonable. They reflect, in part, growth in production of cassava, declines in dependence on food aid, improvements in roads and other marketing channels allowing rural areas to supply cities with cassava, and a return to more normal eating habits that the consolidation of peace permitted.

Technical factors also played a role. Following the 1997 census, the definition of an urban area was expanded relative to the tight definition employed for the 1996-97 budget survey. Specifically, smaller towns, whose inhabitants, particularly the poorer inhabitants, exhibit more rural characteristics, were incorporated into the urban zone resulting in a population expansion in the urban zone of about 50% (from about 20% of

the population in 1996-97 to about 30% of the population in 2002-03). So, the composition of the bundles in urban zones also reflects changes in consumption patterns in urban zones due to this definitional shift.

The critique set forth by Hanlon could potentially apply to the urban zone of Nampula where the basket registered a significant increase in the share of calories provided by cassava (from 29.0 to 50.1 percent). If, as Hanlon suggests, one reduces the share of calories provided by cassava (fresh, dried, and flour) in the 2002 basket to the level observed in 1996 and replaces the calories lost with maize flour, the cost of the basket and hence the poverty line increases and the recalculated poverty rates rise. For Nampula province, it rises from 52.6 to 53.3; for urban zones overall, it rises from 51.5 to 51.9; and for the national level, it rises from 54.1 to 54.2. All other poverty headcount figures remain exactly the same. It is not clear that such a correction is appropriate; however, this discussion is, for practical purposes, moot. The correction has no impact on the qualitative results for the measure of consumption based poverty.

Hanlon also argues that the agricultural income surveys (TIA) in 1996 and 2002 paint a different picture. A comparison of IAF with TIA results is presented in DNPO et al. (2004). For the purposes here, mean and median income growth per adult equivalent by quintile is presented in table 2.

Table 2. Percent change in mean / median total net household income per adult equivalent by income quintile, 1996-2002 (2002 contos).

Quintiles of Net HH Income/AE	Mean Total Net HH Income per AE, 2002	% change, 1996-2002	Median Total Net HH Income per AE, 2002	% change, 1996-2002
1 - low	215	63%	231	66%
2	519	37%	524	39%
3 - mid	877	31%	867	30%
4	1,559	38%	1,521	37%
5 - high	5,038	88%	3,531	59%
Total	1,641	65%	867	30%

Source: Boughton, 2004.

The median growth in income per adult equivalent registered by TIA of 30% is very close to the 28% growth of median consumption registered by IAF between 1996-97 and 2002-03.

4.2 Point 2: The UNDP and GDP Growth

As an example of selective use of statistics while "ignoring equally valid information that paints a different picture" (p. 12), Mr. Hanlon asserts:

> '[T]he most recent UNDP *Mozambique Human Development Report* estimates that 'real GDP per capita' in 2004 (the last year for which data was available) was under $100 per year in five provinces. Between 2000 and 2004 'real GDP per capita' fell everywhere, says UNDP – very different from the overall GDP figures which are usually cited." (p. 12).

There are a number of problems here. The first relates to actually finding the table on which the assertion is based. It turns out to be the right hand panel of Table 16 in the statistical annexes of the *Mozambique Human Development Report 2005* (UNDP 2006). Table 16 is reproduced below. Note that the right hand panel, labeled "Real per capital GDP (USD)", is exactly the left hand panel, labeled "Real GDP per capita (10^3 Meticais)", divided by the nominal Meticais/USD exchange rate from the *Statistical Yearbooks* for 2004 and 2005 (INE, 2005 and 2006).[3] These exchange rates are appended to Table 16 for convenience.

The left panel corresponds with official real GDP numbers at the national level. Conceptually, these figures are calculated by multiplying current year quantities by base year prices. In this case, the base year is 1996. Therefore, the values in the right hand panel for, for example, 2002 are quantities from 2002 multiplied by 1996 prices divided by the 2002 MT/USD exchange rate.

It is difficult to determine a logical interpretation to the numbers in the right hand panel. They are certainly not real GDP. The purpose of calculating real GDP is to derive a value free from the influence of changes in prices, including exchange rates. The right hand panel is not "equally valid." It is driven by changes in nominal exchange rates, which is incorrect. An appropriate calculation would be division by the 1996 MT/USD exchange rate in all years (2000-2004). This assures that changes in real GDP are driven by changes in quantities not changes in prices. Note that, in this case, the growth rate of real GDP per capita would be the same whether calculated in meticais or USD.

Next, even though levels are not of particular concern here, it merits mentioning that the assertion that five provinces had GDP per capita below $100 in 2004 stems from the strange mixture of using real GDP in 2004 valued at 1996 prices converted to USD using the 2004 MT/USD exchange rate. One can do better. Table 15 in the Statistical Annex of the *Mozambique Human Development Report 2005* provides nominal GDP by province for 2004 in Meticais. Division of these numbers by the same population estimates used to obtain real GDP per capita in table 16 and further division by the exchange rate for 2004 yields nominal GDP per capita valued in USD at current exchange rates in 2004. Using this more sensible calculation, the lowest provincial GDP per capita in 2004 is $164 in Cabo Delgado. This value is obviously well above $100.

[3] The exception is 2004 where the *Statistical Yearbook 2005* provides a value of 22,131 while the transformations in Table 16 use an exchange rate of about 22,500.

Table 16: GDP per capita by provinces and regions.

	Real GDP per capita (10^3 Meticais)					Real GDP per capita (USD)				
	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
North	**1733**	**1819**	**1926**	**2098**	**2120**	**114**	**89**	**83**	**90**	**94**
Niassa	1507	1625	1758	1881	1962	99	79	76	81	87
Cabo Delgado	1444	1549	1643	1803	1836	95	76	71	77	82
Nampula	1922	1991	2097	2288	2288	127	97	90	98	102
Center	**2047**	**2200**	**2287**	**2434**	**2500**	**135**	**108**	**99**	**104**	**111**
Zambézia	1683	1823	1911	2032	2080	111	89	82	87	92
Tete	1576	1693	1792	1838	1944	104	83	77	79	86
Manica	1965	2032	2058	2212	2197	130	99	89	95	98
Sofala	3362	3647	3772	4070	4207	222	178	163	174	187
South	**4626**	**5329**	**5685**	**5866**	**6354**	**305**	**261**	**245**	**251**	**282**
Inhambane	2145	2191	2391	2528	3015	141	107	103	108	134
Gaza	2048	2110	2169	2299	2327	135	103	94	99	103
Maputo prov.	6756	9380	10428	10261	11661	446	459	450	440	518
Maputo city	8491	8982	9205	9754	9927	560	439	397	418	441
Mozambique	**2603**	**2875**	**3037**	**3201**	**3360**	**172**	**141**	**131**	**137**	**149**
MT/USD Nominal						15164	20454	23180	23340	22500

Sources: *Mozambique Human Development Report 2005* (UNDP 2006) and *Statistical Yearbooks* (INE, 2005 and 2006).

Rather than focus on table 16 of the Statistical Annex, which features an indefensible transformation of real GDP per capita valued at 1996 prices using current exchange rates from 2000-2004, it is perhaps more relevant to focus on the treatment of real GDP in the body of the *Mozambique Human Development Report 2005* (UNDP 2006). To this end, I reproduce Table 2.3 (p. 17) with the exact headings maintained.

Table 2.3: Evolution of the GDP by provinces, regions and country.

Rate of growth by volume (%).

Regions/Provinces	2001	2002	2003	2004	Average
North	7.3	8.3	11.5	3.4	7.6
Niassa	10.7	11.1	9.9	7.2	9.7
C. Delgado	9.4	8.2	12.0	3.9	8.4
Nampula	5.9	7.8	11.6	2.4	6.9
Centre	10.1	6.5	9.1	5.3	7.8
Zambézia	10.8	7.3	8.8	4.7	7.9
Tete	10.3	8.6	5.3	8.6	8.2
Manica	6.6	4.4	10.8	2.4	6.0
Sofala	11.0	5.8	10.4	5.8	8.2
South	18.0	9.2	5.6	10.9	10.9
Inhambane	4.4	11.6	8.1	22.0	11.5
Gaza	5.0	4.9	8.2	3.4	5.4
Maputo-Prov	43.0	14.4	1.2	16.8	18.9
Maputo-City	8.6	5.1	8.5	4.2	6.6
Mozambique	13.1	8.2	7.9	7.5	9.2

Source: *Mozambique Human Development Report 2005* (UNDP 2006 p. 17).

Based on this table, real GDP grew by 9.2% on average between 2000 and 2004. The rate is particularly fast because large scale flooding in 2000 significantly slowed GDP growth with a large rebound in 2001. Nevertheless, growth never declined in any province in any year over the period and was, on average, rapid by international standards in all provinces.

Growth has been similarly rapid over a longer period of time. The 2007 edition of *Africa Development Indicators* (World Bank, 2007) cites Mozambique as the country with the most rapid "diversified and sustained economic growth" in Africa over the period 1996-2006 with an average annual growth rate of 8.3% (p. 2).

A word on the role of the mega-projects is worthwhile here. Large, capital intensive mega-projects, such as the Mozal aluminum smelter, have contributed to GDP growth over the period. The contributions of these mega-projects to poverty reduction are at best contentious and at worst close to nil. This leads to the charge that the gains in real GDP posted by Mozambique are statistical illusions generated by island sector mega-project investment. Hence, it is worthwhile to consider the role of the mega-projects in GDP

growth. Subtraction of mega-project value added from the GDP total yields a reduction in the growth rate of roughly one percentage point over the period 1996-2006. In other words, if mega-projects were excluded, Mozambique would have posted, using the table on page 2 of *Africa Development Indicators* (World Bank, 2007), the second, rather than first, fastest diversified and sustained economic growth rate in Africa over the decade 1996-2006.[4]

The 2007 Census has recently produced preliminary population estimates (INE 2007). The growth rate of the population between 1997 and 2007 was approximately 2.3%. Hence, real per capita GDP growth was strongly positive even if one strips out the contribution of mega-projects. In summary, it is not the case that 'real GDP per capita fell everywhere' over the period 2000-04 as asserted by Hanlon. Rather, real GDP per capita grew rapidly in all provinces over the period. This result holds even if one strips out mega-project value added from the GDP calculations.

4.3 Point 3: The International Poverty Center Report

Mr. Hanlon quotes from a recent report by the International Poverty Center (IPC) (Virtunen and Ehrenpreis 2007), which he labels as "damning". It is instructive to examine the three quotes by Hanlon on page 12 of his paper and corresponding full quotes from the document.

1) Hanlon (p. 12): "recent economic growth in Mozambique cannot be considered pro-poor."

Full quote from the IPC report: (Page 5) "Using the definition of pro-poor proposed by Kakwani and Pernia (2000), the recent economic growth in Mozambique cannot, therefore, be considered pro-poor."

Comments:

The full quote is strikingly similar to a quote from a document (James, Arndt, and Simler, 2005) available on the Ministry of Planning and Development web site: "Using the definition given by Kakwani and Pernia (2000), in which growth is deemed pro-poor if the accompanying change in income distribution by itself reduces poverty, growth in Mozambique would not be deemed pro-poor" (p. 25).

James, Arndt, and Simler further point out that:

a) the definition proposed by Kakwani and Pernia is "narrow" (p. 3) and

[4] GDP and GDP per capita is another good example of the trends versus levels issue. Despite the most rapid "diversified and sustained economic growth" in Africa over the period 1996-2006 (and one of the most rapid growth rates in the world) (World Bank 2007 p. 2), Mozambique still ranks below the average for the least developed countries and well below the average for sub-Saharan Africa in terms of the GDP Index component of the Human Development Index (UNDP 2007).

b) "[U]sing the more popular definition proposed by Ravallion and Chen (2003), that growth is pro-poor when the poverty incidence falls, we conclude that the pattern of growth in Mozambique between 1996–97 has been pro-poor" (James, Arndt, and Simler 2005 p. 25).

In summary, the information cited in the International Poverty Center (IPC) report was produced by government in a timely manner following the conclusion of the 2002-03 household budget survey, published shortly thereafter on the Ministry of Planning and Development (MPD) web site, and presented in numerous forums both domestically and internationally.

2) Hanlon (p. 12): "benefits of economic growth are going to 'a sharp rise in the consumption growth of the richest households in the midst of a large impoverished population.'"

Full quote from IPC report: "[T]he Theil entropy measure value for the City [of Maputo] increased from 0.41 to 0.60. The results show a sharp rise in the consumption growth of the richest households in the midst of a large impoverished population."

Comment: Three comments are merited. First, the observation from the IPC study applies to Maputo City. This is an important distinction as Maputo is one of only two provinces in the country (the other is Tete) registering a statistically significant aggravation of inequality between 1996-97 and 2002-03 (Arndt, James, and Simler 2007 p. 20). At the national level, inequality as measured by the Gini coefficient increased from .40 to .42 for the period 1996-97 and 2002-03. This change was not statistically significant. And, the IPC report calls .42 "a low level in the regional context of southern Africa." (p. 5)

Second, inequality measures, including the aggravation of inequality in Maputo City based on both the Gini and the Theil entropy measures, have been widely disseminated. The results can be found, for example, on page 29 of the Mozambican PRSP (Government of Mozambique 2006), and the result is discussed in detail in James, Arndt, and Simler (2005) [the IPC report simply reproduces the Table, duly cited, from the discussion paper].

Finally, and most importantly, the government has openly listed regional disparities and inequality as a real concern especially looking forward. The PRSP discusses exactly these issues (pp 28-29) under the heading "Some Worries" (p. 23). Inequality and regional disparities will be treated again in the section entitled "Specific Areas of Agreement". Here, it suffices to say that it is difficult to argue that published poverty analysis has been misleading with respect to the evolution of inequality.

3) Hanlon (p. 12): [The IPC report called for] 'a significant shift in the country's development strategy.'

Full quote from the IPC report (p. 2): "Given the magnitude of foreign aid in Mozambique, a major section is devoted to the importance of aid and trade for economic

growth and poverty reduction, with recommendations for a significant shift in the country's development strategy."

Comment: What is the new development strategy that is actually advocated? The report provides numerous suggestions for potentially viable strategies within specific areas. The best summary occurs in the final two paragraphs of the IPC report. These are reproduced below.

> "External aid provides a major part of all foreign exchange available to Mozambique, and it has thus far had a positive effect on growth without a major negative impact on the real exchange rate. As externally financed investments in public and social infrastructure tend to generate fiscal pressures, such as on recurrent expenditures, it is important to ensure that aid-funded investments are targeted to sectors that are able to boost productive capacity.
>
> Commercial agriculture and agroprocessing are widely identified as the sectors where Mozambique has a comparative advantage in global markets. Investment of aid resources in services that are crucial for creating globally competitive agricultural production capacity, such as quality control systems, agricultural research, extension and marketing, is, therefore, essential. Other key sectors are transport and communications infrastructure, basic health care and primary education services in rural areas, which can reduce poverty by promoting sustainable livelihoods and enhancing labour productivity." (p. 22).

This is a useful contribution to the ongoing development strategy debate. The major difference with existing policy involves a ramped up importance of emphasis on export oriented commercial agriculture, which is a perfectly viable view to which many in government subscribe. Readers can easily download and examine the IPC report.

4.4 Point 4: Child Nutrition

Hanlon points out that comparison of figures from the two published DHS surveys indicates a worsening of child nutrition indicators over the period 1997-2003. Three comments merit mention.

First, the lack of progress in child malnutrition has been widely disseminated. It is discussed at some length in, amongst other publications, the most recent Mozambican PRSP (Government of Mozambique 2006 p. 12).

Second, it is not completely straightforward to compare the results from the 1997 to 2003 surveys. The evolution of child nutrition indicators is explored in detail in Simler and Ibrahimo (2005). Three factors complicate the analysis.

a) To be comparable, the two samples should be demographically consistent because rates of malnutrition indicators (especially stunting) tend to increase with age. Hence, an older sample will tend to exhibit worse indicators.
b) The sample of children is influenced by a drop in childhood mortality and particularly infant mortality rates. UNICEF (2006) reports 10 year averages for the periods 1987-1997 and 1993-2003. Under five childhood mortality and infant mortality declined from 219 to 178 and 147 to 124 respectively.[5] The changes in five year averages for the periods 1993-1997 and 1998-2003 for under five and infant mortality are 207 to 153 and 149 to 101 respectively (INE et al 2005, p. 119). The five year averages indicate a strong drop in mortality rates, particularly infant mortality rates, during the period in focus. Due to the decline in infant mortality, substantial numbers of children "appear" in the 2003 sample who had disappeared from the 1997 sample due to childhood death.
c) About one third of children in the 1997 DHS sample were not included in the stunting and underweight calculations due to lack of data. In particular, parents were often not aware of the child's birthday. In 1997, the large majority of these excluded children lived in households in the lower three quintiles of the wealth distribution. In contrast, in 2003, only about 15 percent of children were excluded from the stunting and underweight calculations with the distribution of excluded children similar across wealth quintiles (Simler and Ibrahimo 2005).

Accounting for these sampling discrepancies results in mild improvements in child nutrition indicators (Simler and Ibrahimo 2005).

Finally, UNICEF (2006) emphasizes that child nutrition depends on a large number of factors such as prevalence of disease, vulnerability to shocks, intra-household resource allocations, actual consumption decisions (an unbalanced diet with excessive reliance on cassava fits here), education of the mother, health knowledge of the mother and access to potable water. International experience suggests that income (consumption) growth by itself only weakly influences malnutrition outcomes in many countries (see Appendix A).

As pointed out by Simler and Ibrahimo (2005 p. 18), the evidence suggests that gains in consumption per household in Mozambique (intra-household allocations are unknown) are translating into gains in childhood nutrition even less strongly than international experience suggests. UNICEF (2006) provides a good listing of possible causes. In addition, recent data highlights the vulnerability of many Mozambican households, particularly poor rural households that depend upon agriculture as a livelihood source, with implications for child nutrition. This observation leads to a significant point of agreement.

[5] Note that the two ten year periods overlap substantially making it mathematically difficult to generate a large difference in the two average.

5 Points of Agreement

The panel dimension of the 2005 Agricultural Income Survey (TIA) yielded important insights into vulnerability of the rural population.[6] This information was recently produced and will be published in early 2008 as part of a World Bank Poverty, Gender, and Social Assessment (among other places). As reproduced by Hanlon on page 15, the rural income distribution deteriorated sharply between 2002 and 2005 with losses in income registered in the majority of rural households. In addition, the distribution of income proved to be highly volatile with numerous households shifting income quartiles between 2002 and 2005.

It bears emphasizing that 2005 was a drought year. Nearly all indicators point to serious drought.[7] Here, table 3 simply shows a time series of cereals production based on TIA data. In 2005, per capita cereals production fell by about 30% from the average of the surrounding years.

Table 3: Cereals production using TIA data.

	2002	2003	2005	2006
Total (1000 tonnes)	1,454	1,509	1,137	1,700
Per Capita (kg)	82	83	59	86

Notes: Full TIAs, which obtain income information, were run in 2002 and 2005. Partial TIAs, which focus on volume of agricultural production, were run in 2003 and 2006. There was no TIA in 2004. Per capita figures were obtained by dividing by estimated total population.

The available information suggests that poor rural households tend to concentrate in agriculture, which is more drought vulnerable, and tend to concentrate in crops that were particularly vulnerable to the drought of 2005 (World Bank forthcoming). Consideration of policies to decrease vulnerability in rural areas is an obvious implication of the high level of vulnerability observed in 2005.

How much of the rural income distribution deterioration should be attributed to drought? It is possible that the drought may be disguising a slowdown in income/consumption growth of the poorer populations in rural areas. On the other hand, the rebound of cereals production in 2006 suggests (but does not prove) that lower income rural households may have regained many of the losses suffered in 2006. More analysis and perhaps more data are required to know with greater certainty.

[6] The final paragraph of the Second National Poverty Assessment (p. 50) called for the collection of panel data in order to capture exactly the phenomenon that TIA 2005 observed.

[7] The conspicuous and distressing exception is the cereals production estimate from the Famine Early Warning system for the 2005 harvest. A critical assessment of the agricultural statistical system, including a comparison of results for the 2005 harvest, is available in Kireygera, Megill, Eding, and José (2007).

6 Conclusions

While significant gains have been registered, the development task remains massive. The challenge of designing policies and programs to confront absolute poverty based on considered evaluation of the facts remains front and center. Mr. Hanlon's paper would be more useful in helping to meet this challenge if he were more careful. The decline in poverty observed between 1996-97 and 2002-03, based on a consumption metric, was not produced by a wholesale shift to cassava in the consumption baskets that underlie the poverty lines. GDP did not 'fall everywhere' between 2000 and 2004. The IPC report is far more balanced than he suggests.

Finally, it is important to emphasize that a wide array of information is publicly available. Hanlon's paper itself is evidence of this. He draws from a large number of publications based on a series of different national survey instruments.[8] Hanlon's paper also demonstrates that Mozambique has not been selectively refraining from publishing disappointing figures. In particular, the central issues of child nutrition and income distribution receive detailed treatment in, amongst other publications, the Mozambican PRSP (Government of Mozambique 2006 pp. 12-13 and 28-29 respectively), the most prominent possible publication.

7 Policy Conclusions for Information Systems

Even though Mozambique maintains a fairly active monitoring and analysis program by developing country standards, the program is not active enough for the circumstances of Mozambique. The article by Hanlon, which has just been reviewed, is essentially a result of the current information vacuum, especially with respect to poverty statistics. In terms of information availability, the current situation is remarkably similar to the situation that prevailed in late 2001/early 2002. At that time, Mozambique was four years from the conclusion of field work for the IAF and DHS surveys. It was a bit less than two years from the conclusion of field work for the QUIBB. National accounts showed strong GDP growth from 1996-2000 including strong growth in agriculture.

The situation in terms of survey information available in late 2007/early 2008 is basically exactly the same with the dates changed. In particular, four years have past since the most recent IAF and DHS surveys and about two years since the latest QUIBB. In addition, National accounts point in the same direction. In particular, growth rates in GDP and agricultural value added are quite comparable with the corresponding 1996-2000 period. Finally, poverty prediction analyses were conducted using QUIBB indicators from 2000 and 2005. Both of these analyses showed declines in the poverty rate at a rate of about

[8] Mr. Hanlon cites published figures derived from two household budget surveys, two demographic and health surveys, three agricultural income surveys (one with a panel dimension), and a population census all nationally representative (the agricultural income surveys represent rural areas) conducted between 1996 and 2005. Additional surveys, including five Core Welfare Indicators Questionnaires (four of five conducted in concert with other studies and one standalone) and a labor force survey, were conducted over the same period with reports and further analyses published in all cases.

2.5% percentage points per year (Simler, Harrower and Massingarela 2004 and Mathiassen and Roll-Hansen 2007). The major difference is the availability of the TIA for 2005. As mentioned, TIA 2005 shows a sharp worsening of the rural income distribution between 2002 and 2005. How much of the rural income distribution deterioration should be attributed to the accentuated vulnerability of poor households to drought is not clear.

Given the paucity of current information, trends in the evolution of poverty since 2003 are not known with confidence. The similarities with the situation in 2001-02 do not necessarily imply that poverty measures have been improving over the period 2003-07. The parallel with 2001-02 that seems almost certain to continue is the highly unproductive nature of the debate over poverty evolution that prevailed in 2001, 2002, and 2003. At the time, there were three camps: 1) poverty is going up, 2) poverty levels are stagnant, and 3) poverty is going down. The lack of information led to an extended and unproductive debate with a relatively weak empirical basis. We seem to be doomed to repeat this debate until results from the census 2007 and IOF (Inquérito ao Orçamento Familiar, which is the replacement of IAF) appear. Once these surveys are completed and processed, the debate can shift to focus on specific results, their interpretation and robustness, and their policy implications.

An unfortunate corollary to the current information vacuum and unproductive debate is a massive over-reliance on the next major poverty oriented survey to appear, which will be the household budget survey, for the determination of poverty evolution. It seems near certain that the very large weight accorded to IAF 2002-03 in determining poverty evolution will be repeated with respect to IOF 2008-09. In fact, the situation is likely to be worse as 2009 is an election year and the end term for PARPA II. The 2007 census, IOF (perhaps supplemented with some demographic modules), and perhaps another full TIA will provide the major quantitative inputs into the monitoring of poverty evolution for the period 2003-2008.

This heavy reliance on a limited number of household budget surveys is problematic for a number of reasons including:

1) Poverty is a multi-dimensional phenomenon. The household budget surveys examine some, but certainly not all, important dimensions of poverty.
2) Focusing on the consumption dimension, the available evidence (for example, TIA 2005) indicates that true consumption poverty rates are fairly volatile through time especially when disaggregated (e.g., provincial consumption poverty rates). Further, we attempt to observe this fairly volatile number through a lens that is distorted by sample error (which we can estimate formally) and non-sample error (which cannot be estimated formally). While the national level indicators appear to be fairly stable and are reasonably tightly measured, the potential for drawing inappropriate conclusions at sub-national (such as provincial) levels, where the degree of underlying variability is higher and the confidence in our measure is lower, is large. This is particularly true when the household budget survey is only carried out once every six years.

3) Strong shocks may make comparison difficult. If, for example, the fieldwork period for IOF 2008-09 were characterized by severe drought or massive flooding (on a national scale), then government and its international partners would enter the next five year planning cycle with a very weak information base.
4) A six year interval is too long to develop a viable panel dimension (e.g., interviews with the same households at two or more points in time). Without a panel dimension, our ability to understand vulnerability, chronic poverty and transitory poverty is severely compromised. The available evidence, particularly TIA 2005, suggests that these dimensions are very important for policy formulation.

As highlighted above, the monitoring program in Mozambique is fairly active by African standards. The critiques cited above could apply to many other countries. Why should Mozambique have a particularly active program? There are three major reasons. First, Mozambique has a far more dynamic economy than the average. Current information is required to monitor and adapt to ongoing dynamic changes. Second, Mozambique obtains much greater levels of foreign assistance than the average. This assistance is targeted at poverty reduction. Mozambique's international partners clearly have strong demand for information on poverty evolution. Third, Mozambique does not aspire to be average. An active monitoring program is required for doing well over the long run.

In sum, while surveys are costly, so is ignorance. The benefits of a more active survey monitoring program substantially outweigh the costs. The National Institute of Statistics has been developing a survey program for the next five years. The proposed program is a step forward; however, it needs to take some further steps. In terms of household surveys, the program should strive for:

a) Increased frequency of collection of core poverty analysis data. I favor, as the core program, a three year rotation with the following surveys:

    - Year T: IOF.
    - Year T+1: DHS.
    - Year T+2: Full TIA in rural areas and a labor force survey in urban areas.
    - Repeat.

    Under this plan, significant dimensions of poverty will be investigated every year. The program allows for panel dimensions to be developed across and among the various surveys. Finally, after three rotations (nine years), the household survey program would be delayed by one year in order to complete the next population census.

b) Enhanced availability of raw data appropriately anonymized. Raw data for the DHS surveys are already made available following an explicit procedure. A procedure for making available data from other surveys to researchers both within and outside of Mozambique should be developed.

c) Full reproduceability of key results ideally from the publicly available raw data. The ability to reproduce results from raw data is a key tenet of science. Interested researchers should be able to request the code that generates published statistics from the raw data.

Had such a program been implemented following IAF 2002-03 and DHS 2003, we would be in a vastly better informed position than we are now. There are reasons why this was not done. In particular, the massive demands of the 2007 census combined with the institutional capacity of INE supported arguments for a more limited program. Nevertheless, with the fieldwork for the 2007 census completed, the core program discussed above fits well within the capacities of INE. It is time to put in place a more active monitoring program.

Appendix A: Literature on income growth and child nutrition.

By Katleen Van den Broeck.

Wolfe and Behrman (1982) investigated the determinants of child health and nutrition status in regions characterized by different levels of urbanization in Nicaragua. They found that income was not an important determinant in either of the regions. Similarly, in 1984, Behrman and Wolfe estimate nutrition demand in Nicaragua and find again that income growth has only a limited effect on nutrition. Ray (2004) analyses child height and weight (measured by Z-scores) for five diverse countries: Pakistan, Peru, Jamaica, Russia and South Africa. He focuses on the effect of household wealth and access to basic amenities on child health. He finds that, while income plays a role, female education plays an effective role in improving child health. For Morocco, Glewwe (1999) actually shows that it is mother's health knowledge only that appears to be effective in improving children's nutritional status.

In an analysis of underweight children (low weight for age), Haddad et.al. (2003) show that income growth will not be sufficient to accelerate reductions in malnutrition in order to reach the Millennium Development Goal (MDG) of halving the prevalence of underweight children by 2015. Only three out of the 12 countries included in their study were projected to reach the malnutrition MDG through consumption growth alone. A study in Kagera in Tanzania (Alderman, Hoogeveen, and Rossi, 2005) also provides evidence that income growth will have to be complemented by nutrition interventions to reach the malnutrition MDG objective.

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