



INTERNATIONAL FOOD
POLICY RESEARCH INSTITUTE
sustainable solutions for ending hunger and poverty

FOOD CONSUMPTION AND NUTRITION DIVISION

December 2005

FCND Discussion Paper 202

Has Economic Growth in Mozambique Been Pro-Poor?

Robert C. James, Channing Arndt, and Kenneth R. Simler

2033 K Street, NW, Washington, DC 20006-1002 USA • Tel.: +1-202-862-5600 • Fax: +1-202-467-4439 • ifpri@cgiar.org
www.ifpri.org

IFPRI Division Discussion Papers contain preliminary material and research results. They have not been subject to formal external reviews managed by IFPRI's Publications Review Committee, but have been reviewed by at least one internal or external researcher. They are circulated in order to stimulate discussion and critical comment.

Copyright 2005, International Food Policy Research Institute. All rights reserved. Sections of this material may be reproduced for personal and not-for-profit use without the express written permission of but with acknowledgment to IFPRI. To reproduce the material contained herein for profit or commercial use requires express written permission. To obtain permission, contact the Communications Division at ifpri-copyright@cgiar.org.

Abstract

Using 1996–97 and 2002–03 nationally representative household surveys, we examine the extent to which growth in Mozambique has been pro-poor. While all sections of society enjoyed a rapid annual increase in consumption between the sample periods, the rate of growth in consumption was slightly higher for richer households. This has led to a moderate increase in inequality at the national level, as demonstrated by the rise in the Gini coefficient from 0.40 to 0.42. However, this slight increase in inequality is not statistically significant, and its impact on poverty reduction efforts is small: the poverty headcount would have been 53.0 percent in 2002–03 if all sections of society had enjoyed the mean growth rate in consumption, compared with the 54.1 percent at which it actually stood. Interestingly, the use of the entropy class of inequality measures indicates that inequality in real consumption between provinces and regions has diminished over time, in contrast to popular claims. Maputo City continues to have the highest rates of inequality in the country; it witnessed a significant increase in inequality between 1996–97 and 2002–03 (the Gini coefficient rose from 0.44 to 0.52).

Key words: inequality, poverty, growth, Mozambique

Contents

Acknowledgments.....	v
1. Introduction.....	1
2. Methodology.....	3
Definition of Welfare Measure.....	3
The Gini and Generalized Entropy Measures of Inequality.....	7
3. Results.....	10
2002–03 Inequality.....	10
Changes in Inequality between the IAF 1996–97 and the IAF 2002–03.....	14
Inequality Decomposed by Household Characteristics.....	19
4. Conclusions.....	22
References.....	24

Tables

1 Poverty lines, headcount ratios, and standard errors, by province and zone of residence, 2002-03.....	6
2 Mean consumption, by quintiles, 2002-03.....	10
3 Inequality estimates at the national, rural, urban, and regional level, 2002-03.....	11
4 Estimated inequality measures, by province, 2002-03.....	12
5 Changes in inequality at the national level over time.....	15
6 Changes in inequality over time.....	17
7 Static decomposition of inequality, by subgroups, using the $GE(1)$ measure, 2002-03.....	20
8 Rural and urban agricultural and nonagricultural households mean consumption, 2002-03.....	21

- 9 Static decompositions, by subgroups, for both samples, using the $GE(1)$ measure ... 22

Figures

- 1 Lorenz curves for Zambézia and Maputo City, 2002-03 13
- 2 Lorenz curves for 1996-97 and 2002-03 IAF surveys 14
- 3 Generalized Lorenz curves for 1996-97 and 2002-03 IAF surveys..... 16
- 4 Growth rate in consumption per capita, by percentile, 1996-97 to 2002-03 19

Acknowledgments

This work was conducted under a collaborative policy research program between the International Food Policy Research Institute (IFPRI) and the Mozambique Ministry of Planning and Finance, National Directorate of Planning and Budget. We thank Dr. José Alves Sulemane and Crisitina Matusse for their support. We are also grateful for financial support from Danida, the Swiss Agency for Cooperation and Development, and the Department for International Development (DfID).

We thank Cláudio Massingarela for his assistance in the early stages of this research. Thanks also go to John Maluccio, who provided many detailed and insightful comments on an earlier version of this paper. We also thank seminar participants at Eduardo Mondlane University for their comments. Any remaining errors are the responsibility of the authors.

The views expressed in this paper are the authors' and are not the official position of the Government of Mozambique.

Robert C. James
National Directorate of Planning and Budget
Ministry of Planning and Finance, Mozambique

Channing Arndt
Department of Agricultural Economics
Purdue University

Kenneth R. Simler
International Food Policy Research Institute

1. Introduction

Within the discourse on “pro-poor growth,” the long-standing debate about the extent to which the poor benefit from economic growth has reemerged as a topical and controversial issue. Opponents of the current patterns of economic growth insist that global market forces are leading to ever widening inequalities at national levels. These critics argue that although economic growth may be occurring at an aggregate level, its distribution across income groups is such that the poor see little, if any, benefits (Oxfam 2000). Others disagree. Dollar and Kraay (2002), for example, in a cross-country analysis, conclude that log mean income of the poorest quintile (inferred from distributional shares and GDP per capita) changes one-to-one with the overall log GDP per capita. Empirical evidence is cited to support both views. However, there is considerable controversy over definitions, measurement techniques, and analytical approaches, particularly in the analysis of cross-country data sets (see Ravallion 2001).

At the time of the first national household survey in 1996–97, Mozambique was recognized as one of the world’s poorest countries (UNDP 1997). In fact, in the 1996–97 national survey of household consumption (known as the IAF96¹), mean consumption per capita in Mozambique was actually below the absolute poverty line (MPF/UEM/IFPRI 1998). In other words, if the same level of total consumption had been distributed perfectly equally among Mozambicans in 1996, every man, woman, and child would have lived in absolute poverty.² Therefore, in the Mozambican context, the need for pro-poor growth is self-evident: redistribution efforts alone have extremely little scope to reduce levels of poverty. Poverty reduction in Mozambique requires growth, as it does in many low-income countries.

¹ The abbreviation IAF is from the Portuguese name for the survey, *Inquérito aos Agregados Familiares*, or “Household Survey.”

² As the mean consumption was 97 percent of the poverty line, if there had been no inequality in the 1996–97 survey, there would have been a minuscule poverty gap (0.027) and a negligible squared poverty gap (0.001)

In the period 1996 to 2002, the economy grew by a cumulative 62 percent. Poverty and well-being analyses already undertaken indicate a substantial fall in the poverty headcount from 69.4 percent of the population in 1996–97 to 54.1 percent in 2002–03 (MPF/IFPRI/PU 2004). While the trend is impressive, that over half the population continues to live in absolute poverty highlights the imperative for poverty reduction to remain at the heart of Mozambican policy.

This paper seeks to examine trends in inequality, particularly the extent to which economic growth in Mozambique has benefited the poor. Inconveniently, despite the pervasiveness in development discourse of the term “pro-poor,” there is no consensus on its definition. Kakwani and Pernia (2000) suggest a narrow definition in which growth can be deemed pro-poor if the accompanying change in income distribution by itself reduces poverty. Yet, as Kraay (2004) notes, this is a rather restrictive notion, given that patterns of growth would not be deemed pro-poor if the income of the poor grew at a slower pace than the incomes of higher-income groups, even if rapid rates of poverty reduction had taken place.

A broader definition is that growth is pro-poor when the incidence of poverty falls (Ravallion and Chen 2003). However, this definition is also not without problems. It is questionable, for example, whether an annual 10 percent growth rate for the population as a whole should really be described as pro-poor if the real income growth of those below the poverty line was considerably smaller—for example, 1 percent—resulting in only a marginal reduction in absolute poverty and a significant increase in relative poverty. This paper attempts to take a nuanced view by considering the pattern of growth across the entire income distribution.

In this paper, two broad research questions are addressed: (1) What was the inequality profile of Mozambique in 2002–03? (2) How did the inequality profile of Mozambique change between 1996–97 and 2002–03? Static decomposition techniques are used to examine the pattern of inequality between and within different subgroups of the 2002–03 national household survey of consumption, known as the IAF02. In examining how inequality has changed over time, the IAF96 and IAF02 consumption

surveys are compared using standard inequality measures. The statistical significance of changes in inequality is tested using bootstrapped standard errors. This, coupled with an examination of the average annual growth rate in consumption across the population distribution, enables us to examine how broad-based the growth in consumption was between the two survey periods.

The methodology used in this paper is described in the following section, including the construction of the welfare measure, the inequality indexes employed, and the method used to estimate their standard errors. Section 3 presents national and subnational inequality results for Mozambique for the two surveys (1996–97 and 2002–03). The pattern of economic growth across the income distribution is also examined in this section. Discussion of the results and conclusions are presented in Section 4.

2. Methodology

Definition of Welfare Measure

This study builds on the analysis already undertaken as part of the second national assessment of poverty and well-being and uses consumption per capita as the welfare metric (MPF/IFPRI/PU 2004). As the current analysis is based on the estimates of real consumption calculated in the poverty assessment, an outline of the methodology is necessary.³ Both the 1996–97 IAF and 2002–03 IAF were nationally representative surveys containing detailed information on expenditure for 8,250 and 8,700 households, respectively. In the analysis of both surveys, a cost of basic needs approach was employed to ascertain the absolute poverty lines (Ravallion 1994, 1998). Region-specific poverty lines were constructed, with the same 13 spatial regions used in both studies.

To obtain the poverty line in each region, food and nonfood basic needs were considered. To derive the food component of the line, the minimum caloric requirements

³ The full methodology is presented in MPF/IFPRI/PU 2004.

of different groups of the population (for example, children, pregnant or lactating women, adult males) were ascertained and weighted to reflect the average region-specific household composition. In turn, the cost of buying the food necessary to satisfy the caloric requirements was calculated. As different commodities may be more or less expensive in different parts of the country, this food poverty line was calculated separately for (the same) 13 spatial regions in each of the surveys. As there is considerable spatial variation in relative food prices in Mozambique (Tarp et al. 2002), the composition of the food poverty line bundles was also allowed to vary across the 13 regions.

In updating the 1996–97 poverty lines for use with the 2002–03 data, it was necessary to consider the likely impact of temporal variation in relative prices. Considerable relative price changes took place between the two survey periods in all of the 13 spatial domains (that is, in many cases a food commodity that was a best value in 1996–97 was no longer so in 2002–03). This means there was considerable incentive for poor households to change their consumption choices between the two survey periods. Under this scenario, poverty headcounts would be overestimated in the latter sample if this substitution were ignored and the same baskets of goods used to derive the poverty lines in 1996–97 were adopted in 2002–03. Such overestimations would have considerable ramifications for the accuracy of comparisons between the two surveys. To overcome these problems, a flexible approach to estimating the poverty line in 2002–03 was adopted, with a different basket of food being used to derive the poverty line in 2002–03 than in 1996–97.

However, in using a flexible approach, one faces the challenge of ensuring that the basic needs poverty bundles reflect the same standard of living, both across space in 2002–03 and relative to the bundles chosen in 1996–97 (Ravallion and Lokshin 2003). Utility-consistent food poverty lines were estimated using the approach described in Arndt and Simler (2005). In particular, an information theoretic criterion was employed to adjust the food bundles for 2002–03 so that these bundles satisfied both spatial and

temporal revealed preference conditions, while adhering as closely as possible to the consumption patterns revealed in the surveys.

Turning to nonfood, even the very poorest households allocate a nontrivial portion of their total consumption to nonfood items. The nonfood component of the poverty line was estimated based on the average nonfood budget share of households whose total expenditure is close to the level of the food poverty line. To ensure an adequate sample, the expenditure pattern of all households whose per capita total consumption was between 80 and 120 percent of the food poverty line was examined. From these households, the cost of the minimum nonfood bundle was then estimated nonparametrically as the weighted average nonfood expenditure. A triangular weighting scheme was used in constructing the average, giving greater weight to observations the closer they were to the food poverty line (see Hardle 1990). This method was used in both the 1996–97 IAF and the 2002–03 IAF to derive the nonfood share of the poverty line value in the 13 spatial areas. Table 1 shows the food, nonfood, and total poverty lines for each of the 13 spatial domains. The table also shows the poverty headcount ratio, and associated standard errors, for rural and urban areas in each province.

The poverty line for each of the 13 spatial areas was calculated as the sum of the food and nonfood poverty lines. To derive per capita daily consumption values, household consumption was divided equally among all household members.⁴ To obtain real per capita consumption values, these figures were then deflated using the poverty line for the appropriate spatial area. Representing actual consumption as a proportion of the appropriate poverty line facilitates comparisons between spatial areas within the same survey and across the two survey periods. For example, the total poverty line in 2002–03 in rural Nampula was 5,972 meticaís (MZM) per day and in urban Gaza Inhambane, it was MZM 10,721 per day. Thus, a person who consumed exactly MZM 5,972 per day

⁴ As a form of sensitivity analysis, we also conducted the analysis using consumption per adult equivalent unit (AEU), with the AEU scale based on food energy requirements. The results are almost identical, which is not surprising. Although changing the denominator leads to considerable reordering of households, the net effect on the indexes is almost zero at the level of aggregation presented here (such as national, regional, provincial, rural, urban, broad subgroups, expenditure percentiles).

Table 1—Poverty lines, headcount ratios, and standard errors, by province and zone of residence, 2002-03

Poverty line region	Poverty line			Poverty headcount ratio	Standard error of headcount
	Food poverty line	Nonfood poverty line	Total poverty line		
		(meticaís)			
Rural					
1 Niassa	5,434	1,665	7,099	0.529	0.064
Cabo Delgado	5,434	1,665	7,099	0.651	0.033
2 Nampula	4,471	1,501	5,972	0.578	0.037
3 Zambézia	4,155	1,318	5,473	0.445	0.051
Sofala	4,155	1,318	5,473	0.338	0.029
4 Tete	5,629	1,304	6,933	0.590	0.048
Manica	5,629	1,304	6,933	0.404	0.057
5 Inhambane	6,614	2,394	9,008	0.836	0.024
Gaza	6,614	2,394	9,008	0.617	0.031
6 Maputo Province	11,801	4,963	16,764	0.812	0.047
Urban					
7 Niassa	7,540	2,690	10,231	0.488	0.060
Cabo Delgado	7,540	2,690	10,231	0.566	0.098
8 Nampula	4,853	1,807	6,661	0.449	0.070
9 Zambézia	6,591	2,183	8,775	0.452	0.071
Sofala	6,591	2,183	8,775	0.396	0.053
10 Tete	7,145	2,545	9,690	0.645	0.060
Manica	7,145	2,545	9,690	0.491	0.051
11 Inhambane	7,264	3,457	10,721	0.705	0.044
Gaza	7,264	3,457	10,721	0.557	0.047
12 Maputo Province	11,898	6,398	18,296	0.618	0.035
13 Maputo City	12,224	7,291	19,515	0.536	0.031

and lived in rural Nampula and a person living in Inhambane City (where the cost of living is much higher) who consumed MZM 10,721 per day would be viewed as having the same standard of living, exactly 100 percent of the relevant poverty line.⁵

⁵ While this works well for people at or around the poverty line, the use of this form of deflator is less appropriate for comparing wealthy households from different regions. This is because the poverty line is derived from the goods that make up a poverty line basket, which is based on consumption patterns of poor households. To continue with the example given above, it is unlikely that a wealthy individual in rural Nampula, consuming MZM 597,200 a day, is really as wealthy in real consumption terms as a person in Inhambane City who consumes MZM 1,072,100 a day. The goods such an individual consumes are unlikely to be more expensive in Inhambane City in the same way goods that make up the poverty line basket of goods would be.

The Gini and Generalized Entropy Measures of Inequality

To derive an inequality profile for Mozambique, the Gini and generalized entropy (GE) inequality measures were used. From its first proposal in 1921, the Gini coefficient or index has been one of the most widely used measures of social and economic inequality. The Gini index was proposed as a summary statistic of the dispersion of a distribution, taking on values between zero and one with zero interpreted as no inequality. There are several ways of expressing the Gini coefficient. We use the formula found in Jenkins (1991),

$$G = 1 + \frac{1}{N} - \frac{2}{mN^2} \sum_{i=1}^N (N-i+1)y_i, \quad (1)$$

where m is the arithmetic mean of consumption per capita and persons are ranked in ascending order of consumption per capita, y_i .

The GE set of inequality measures were also used to explore the distribution of the consumption in the sample. This class of measures takes the form given in equations 2a, 2b, and 2c below.

$$GE(c) = \frac{1}{c(c-1)} \sum_i f_i \left[\left(\frac{y_i}{\mu} \right)^c - 1 \right], \quad \text{for } c \neq 0, 1; \quad (2a)$$

$$GE(0) = - \sum_i f_i \log \left(\frac{y_i}{\mu} \right), \quad \text{for } c = 0; \text{ and} \quad (2b)$$

$$GE(1) = \sum_i f_i \left(\frac{y_i}{\mu} \right) \log \left(\frac{y_i}{\mu} \right), \quad \text{for } c = 1. \quad (2c)$$

In the GE equations, f_i is the population share of household i , y_i is per capita consumption of household i , μ is average per capita consumption, and c is a weighting

parameter. Lower values of c are associated with greater sensitivity to inequality among the poor, and higher values of c place more weight on inequality among the rich. The most common values of c used are 0, 1, and 2, which we will refer to as $GE(0)$, $GE(1)$, and $GE(2)$.⁶ An advantage of the GE measures over the Gini coefficient is that, in being additive on i , they can be additively decomposed into between-group and within-group components of inequality. The decomposition of total inequality (I) into two parts for the $GE(1)$ measure is given in equation (3) below.

$$GE(1) = \left[\sum_j g_j \left(\frac{\mu_j}{\mu} \right) \log \left(\frac{\mu_j}{\mu} \right) \right] + \sum_j GE_j g_j \left(\frac{\mu_j}{\mu} \right) . \quad (3)$$

In equation (3), j refers to subgroups, g_j refers to the population share of group j , and GE_j refers to inequality within group j . The between-group component of inequality (I_b) is captured by the first term in the right-hand side of the equation. This is inequality in mean consumption between the subgroups and reflects what the level of inequality in the population would be if everyone within each subgroup had the same (the group average) consumption level μ_j . The second term on the right-hand side of the equation reflects within group inequality (I_w), or what the overall inequality level would be if there were no differences in mean consumption across groups, but there was inequality within each group. Total inequality is the sum of I_b and I_w .

At this point, there are features of the data used in this study, and the inequality measures more generally, that merit comment. First, the data are not panel data but are two representative cross-sections. We have snapshots at two points in time of representative samples of households, but we cannot say anything about poverty or inequality dynamics at the household level. That is, we do not know how much households are moving in or out of poverty or how much reordering is taking place in the expenditure distribution. Second, all of the inequality measures used is “anonymous,” in

⁶ The $GE(1)$ measure is also known as the Theil entropy measure, and the $GE(0)$ measure is also referred to as the Theil L or mean log deviation measure.

that they only consider the distribution of household expenditure at a point in time and not movements of a given household within that distribution. As such, they are appropriate for the cross-sectional data used in this paper, but they also have an inherent weakness in capturing a broader concept of inequality.

As a somewhat extreme illustration of this weakness, consider an economy in which expenditure is distributed unequally in time t . But expenditure levels are not static, and in a subsequent period ($t + 1$), the ordering of households by income is completely inverted, with the household that was poorest in time t being the richest in $t + 1$, and vice versa. The same applies to the second poorest (richest) household, and so on down the expenditure distribution. Furthermore, assume that not only is the ordinal ranking of households inverted, but the cardinal ranking is as well. Any of the inequality measures shown above would only reflect the inequality observed in the cross-section and not detect the economic mobility through which households move up and down the expenditure distribution over time. Indeed, *average* household expenditure over the two periods would be much more equal than indicated by the inequality indexes estimated from the cross-sections. If panel data were available, it would be possible to estimate inequality indexes based on households' average expenditures over time, but panel expenditure data are not presently available in Mozambique.

For tests of statistical inference, a bootstrap procedure was used to generate estimates of the standard errors of the Gini and $GE(1)$ inequality measures. The bootstrap samples were drawn in a manner that mimicked the cluster sample design of the IAF surveys. That is, p clusters were randomly drawn, with replacement, where p is the number of primary sampling units in the survey. When a cluster is drawn, all of the households in that cluster are drawn. Because the bootstrap sampling is done with replacement, each cluster (or household) may appear one or more times in a given bootstrap sample or not at all. Inequality indexes are calculated for each bootstrap sample. The process is repeated 500 times. The standard deviation of the inequality indexes over the 500 replications is a consistent estimator of the standard error of the

inequality index. The point estimates of the inequality indexes are calculated from the original, nonbootstrapped sample.

3. Results

2002–03 Inequality

The national Gini coefficient based on the 2002–03 IAF is 0.42, which represents a fairly high degree of inequality, though it is not out of line with other Sub-Saharan African countries.⁷ Average consumption in the highest quintile is eight times the average consumption in the poorest quintile. In fact, mean consumption in the poorest quintile is only 39 percent of the poverty line, that is, less than half of what is required to meet basic needs. Mean consumption per capita for the entire population in 2002–03 is 128 percent of the poverty line (see Table 2). Consequently, at this level of total consumption, everyone would live above the absolute poverty line if there were no inequality in the country.⁸

Table 2—Mean consumption, by quintiles, 2002-03

Population quintile	Mean consumption	
	As proportion of poverty line	As proportion of highest quintile's mean consumption
1	0.39	0.13
2	0.66	0.22
3	0.94	0.30
4	1.32	0.43
5	3.08	1.00
Mean	1.28	0.41

Inequality varies considerably among different regions, provinces, and areas (see Table 3). In rural areas, the Gini coefficient was just 0.37, compared with 0.48 in urban

⁷ For example, Christiaensen, Demery, and Paternostro (2003) report Gini coefficients of 0.37 for Ghana, 0.38 for Madagascar, 0.38 for Uganda, 0.47 for Nigeria, and 0.50 for Zambia.

⁸ As indicated earlier, this contrasts with the situation in 1996–97, where mean real consumption was below the poverty line.

areas. In other words, consumption in rural areas was far more equal across the sample households than in urban areas, a familiar result because urban areas tend to be more economically heterogeneous. At the regional level, inequality was lowest in the north and center, with estimated Gini coefficients of 0.39 in each. Inequality was much higher in the south of the country, particularly in Maputo City, where the estimated Gini coefficient was 0.52.

Table 3—Inequality estimates at the national, rural, urban, and regional level, 2002-03

	Mean consumption (as proportion of poverty line)	Gini	GE(0)	GE(1)	GE(2)
National	1.28	0.42	0.30	0.37	0.99
Rural	1.15	0.37	0.24	0.27	0.55
Urban	1.53	0.48	0.39	0.50	1.45
North	1.22	0.39	0.25	0.35	1.13
Central	1.40	0.39	0.27	0.31	0.65
South ^a	1.00	0.44	0.33	0.40	0.97
Maputo City	1.69	0.52	0.46	0.60	1.97

^a Excluding Maputo City.

The GE inequality measures parallel the patterns revealed by the Gini coefficients. Consumption is more equal in rural areas, while the south, particularly Maputo City, exhibits the highest inequality in the country (whichever GE measure is used). Interestingly, the *GE(2)* value for Maputo City is nearly twice that of the national average. This indicates that the higher inequality in Maputo City is attributable to the presence of a small but particularly well-off subgroup of citizens.⁹

Inequality by province was also examined (Table 4). The pattern of inequality within provinces tends to follow the regional figures, with northern and central provinces enjoying somewhat lower levels of inequality than the southern provinces. Provinces with inequality above the national average were Cabo Delgado, Inhambane, Sofala, and Maputo (province and city). Given the higher levels of inequality recorded in urban areas

⁹ Although this subpopulation was extremely rich relative to other sample households, in Western terms there were no super-rich households sampled. The highest real consumption per capita observed in the 2002–03 IAF was less than US\$100 per day.

generally, it is not surprising that inequality was higher in Sofala Province than other central provinces, given it is home to the second largest city in the country, Beira. Inhambane was the province with the highest poverty headcount in the 2003-03 IAF and also the province with the lowest mean consumption. The high inequality in general, and particularly the $GE(0)$ figure, suggest the presence of a significant minority of extremely poor households in the province.

Table 4—Estimated inequality measures, by province, 2002-03

Region/province	Mean consumption (as proportion of poverty line)	Percent of population that is rural	Gini	$GE(0)$	$GE(1)$	$GE(2)$
Northern						
Niassa	1.29	80.8	0.36	0.22	0.26	0.48
Cabo Delgado	1.27	77.5	0.44	0.35	0.62	3.04
Nampula	1.18	59.7	0.36	0.21	0.24	0.33
Central						
Zambézia	1.35	89.2	0.35	0.21	0.23	0.32
Tete	1.06	84.9	0.40	0.29	0.30	0.47
Manica	1.41	63.9	0.40	0.29	0.30	0.45
Sofala	1.81	60.1	0.43	0.31	0.41	1.13
Southern						
Inhambane	0.77	77.9	0.44	0.34	0.40	0.80
Gaza	1.24	74.3	0.41	0.28	0.38	1.11
Maputo ^a	1.01	38.4	0.43	0.31	0.36	0.65
Maputo City	1.69	00.0	0.52	0.46	0.60	1.97
National	1.28	67.9	0.42	0.30	0.37	0.99

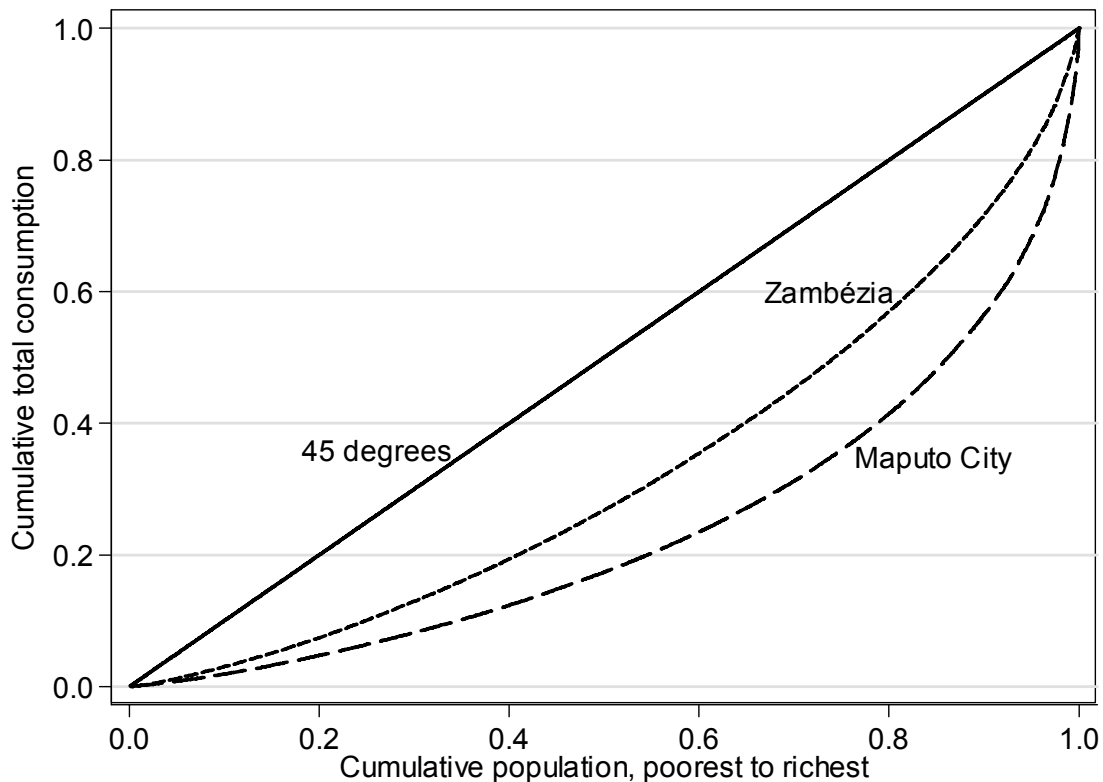
^a Excluding Maputo City.

As noted in INE (2004), Cabo Delgado posed a considerable sampling problem in both IAF surveys. In 2002–03, the standard error on the value of mean consumption, measured as a percentage of the mean value, exceeded the value estimated for most other provinces by a factor of three to four, resulting in a very wide confidence interval on the value of mean consumption for Cabo Delgado. This high standard error was driven primarily by a few enumeration areas containing households with consumption levels far above the average for the province and indeed the country as a whole. While the high consumption of these few households matters little for poverty headcount estimates (because nonpoor households receive zero weight in most poverty measures), they exert

an extremely strong influence on measures of inequality. The $GE(2)$ estimate for Cabo Delgado, at over three times the national average, certainly suggests that much of the inequality in Cabo Delgado is attributable to the sample's inclusion of a small group of unusually wealthy households.

In Figure 1, the Lorenz curves for Zambézia and Maputo City—the provinces with lowest and highest Gini coefficients, respectively—are presented along with a 45-degree line. The more equal distribution in Zambézia is demonstrated by the Lorenz curve being closer to the 45-degree line. As can also be seen in Figure 1, in Zambézia the richest 25 percent of the population consume 49 percent of the total consumption, while in Maputo City, the richest 25 percent of the population account for more than 64 percent of the total consumption in the city.

Figure 1—Lorenz curves for Zambézia and Maputo City, 2002-03



Changes in Inequality between the IAF 1996–97 and the IAF 2002–03

Consumption inequality at the national level has slightly increased between the two study periods, with the Gini coefficient rising from 0.40 in 1996–97 to 0.42 in 2002–03 for the sample as a whole. However, as the Lorenz curves for the two samples in Figure 2 illustrate, this increase in inequality at the national level is moderate. In the 1996–97 IAF, the poorest 50 percent of the population consumed 23.9 percent of the total consumption in the sample. In the 2002–03 IAF, the poorest 50 percent consumed 23.3 percent of total consumption. The GE measures also show a moderate increase in inequality in 2002–03, compared with 1996–97 (Table 5).

Figure 2—Lorenz curves for 1996-97 and 2002-03 IAF surveys

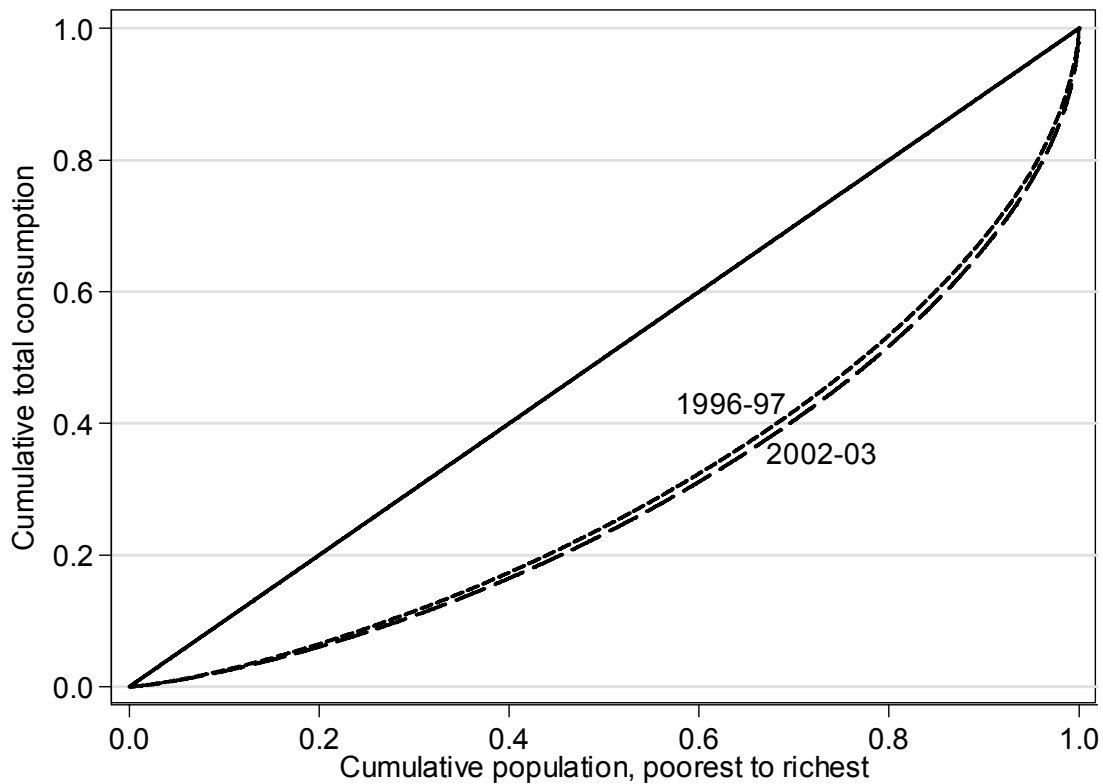


Table 5—Changes in inequality at the national level over time

Inequality measure	1996–97	2002–03
Gini	0.40	0.42
<i>GE</i> (0)	0.27	0.30
<i>GE</i> (1)	0.31	0.37
<i>GE</i> (2)	0.59	0.99
Mean consumption (as proportion of poverty line)	0.97	1.28

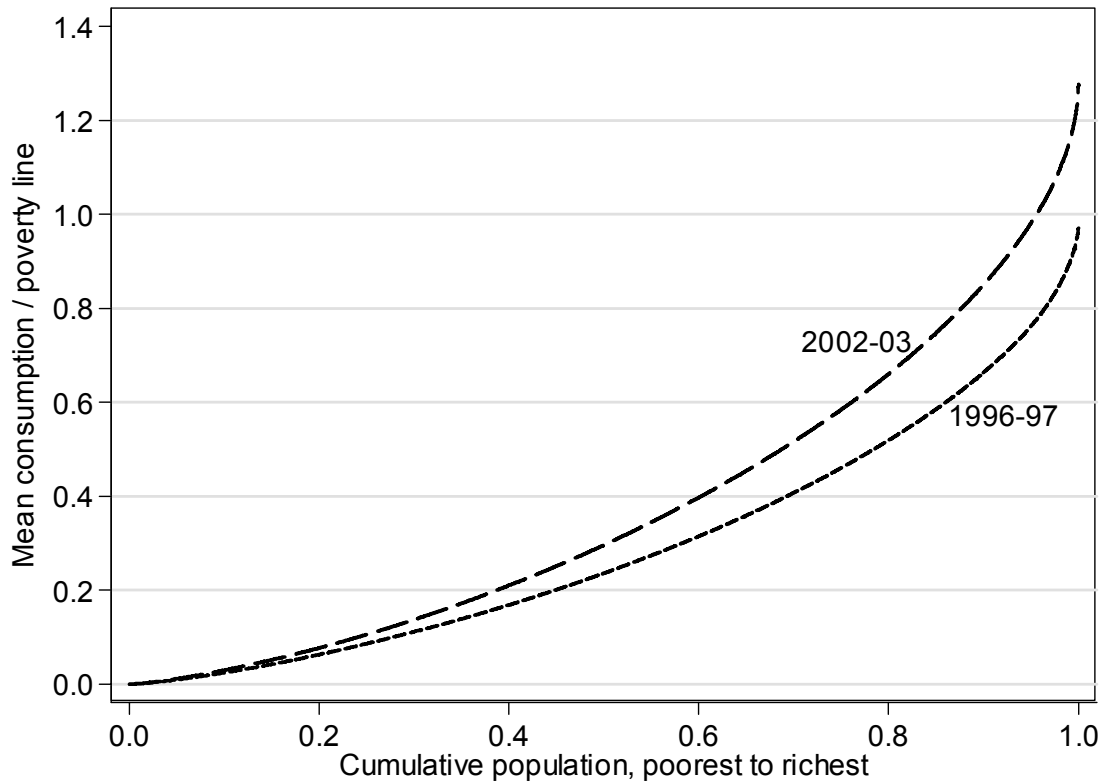
Of particular concern for poverty reduction efforts is the growth in consumption among the percentage of the population who fell below the poverty line in 1996–97. While inequality has increased moderately, there has been a rapid increase in the mean real consumption between the two sample periods. As noted, mean consumption per capita in 1996–97 was below the poverty line. In the 2002–03 IAF, the mean consumption in the sample was 128 percent of the poverty line, which represents a 31 percent increase in mean real consumption between the two time periods.

Of course, this increase in the mean consumption for the sample could, in principle, result solely from increases in consumption among the top 50 percent of the population. To explore the growth in consumption across the full distribution, the generalized Lorenz curves for the two data sets were drawn (see Figure 3). Unlike standard Lorenz curves, generalized Lorenz curves take into account not only the relative distribution of consumption, but also the absolute level, and can therefore be used to examine how consumption has changed across the distribution. The horizontal axis is the same as for standard Lorenz curves, but the vertical axis is rescaled by multiplying the cumulative share of total consumption times mean consumption per capita for the entire sample. Therefore, when p is 100 percent of the population, the y -value is equal to the mean real consumption per capita in the sample. Figure 3 shows that the 2002–03 generalized Lorenz curve dominates the 1996–97 curve.¹⁰ In other words, consumption is higher at each percentile point in the distribution in 2002–03 than it was in 1996–97.

¹⁰ Individual households could, of course, be worse off, implying that they fell to a lower percentile in the consumption distribution over the period.

For reduction of absolute poverty, that households at all percentiles consumed more in the 2002–03 IAF than in the 1996–97 IAF is arguably more significant than the marginal increase in inequality.

Figure 3—Generalized Lorenz curves for 1996-97 and 2002-03 IAF surveys



The change in inequality within subpopulations between the two survey periods was also examined. As shown in Table 6, the increase in inequality within both rural and urban areas is negligible. Changes in inequality measures within provinces varied somewhat. In two cases, Nampula and Manica, inequality marginally fell between the two sample periods. Inequality increased slightly in five provinces: Niassa, Zambézia, Sofala, Gaza, and Maputo Province (excluding Maputo City), and increased more rapidly in four others: Tete, Inhambane, Cabo Delgado, and Maputo City. In fact, the rapid increase in inequality in Cabo Delgado and Maputo City accounts for the majority of the

rise in consumption inequality seen nationally. Given the sampling problems in Cabo Delgado already discussed, it would be unwise to read too much into the sharp rise in inequality there.¹¹ The sharp rise in inequality in Maputo City gives more cause for concern, especially considering that the poverty headcount has remained essentially flat in the capital city between the two sample periods, despite the increase in mean consumption. The Gini coefficient has risen in Maputo City from 0.44, already the highest of all the provinces in 1996–97, to 0.52 in 2002–03. Moreover the *GE(2)* value for Maputo (not shown in Table 6) more than doubled from 0.95 to 1.97, which indicates

Table 6—Changes in inequality over time

Area	Mean consumption (proportion of poverty line) 2002–03	Increase in real consumption from 1996–97 (percent)	Gini		<i>GE(1)</i>	
			1996-97	2002-03	1996-97	2002-03
National	1.28	32	0.40	0.42	0.31	0.37
Rural	1.15	26	0.37	0.37	0.26	0.27
Urban	1.53	24	0.47	0.48	0.44	0.50
North	1.22	20	0.38	0.39	0.29	0.35
Center	1.40	63	0.37	0.39	0.27	0.31
South	1.15	4	0.43	0.47*	0.37	0.50**
Niassa	1.29	45	0.35	0.36	0.22	0.26
Cabo Delgado	1.27	8	0.37	0.44	0.27	0.62
Nampula	1.18	20	0.39	0.36	0.30	0.24
Zambézia	1.35	44	0.32	0.35	0.20	0.23
Tete	1.06	49	0.35	0.40	0.21	0.30*
Manica	1.41	22	0.41	0.40	0.36	0.30
Sofala	1.81	207	0.40	0.43	0.32	0.41
Inhambane	0.77	-1	0.38	0.44	0.31	0.40
Gaza	1.24	12	0.38	0.41	0.27	0.38
Maputo ^a	1.01	-6	0.42	0.43	0.35	0.36
Maputo City	1.69	10	0.44	0.52*	0.41	0.60*

^a Excluding Maputo City.

** = Difference between the two periods is statistically significant at the 1 percent level; * = difference between the two periods is statistically significant at the 5 percent level.

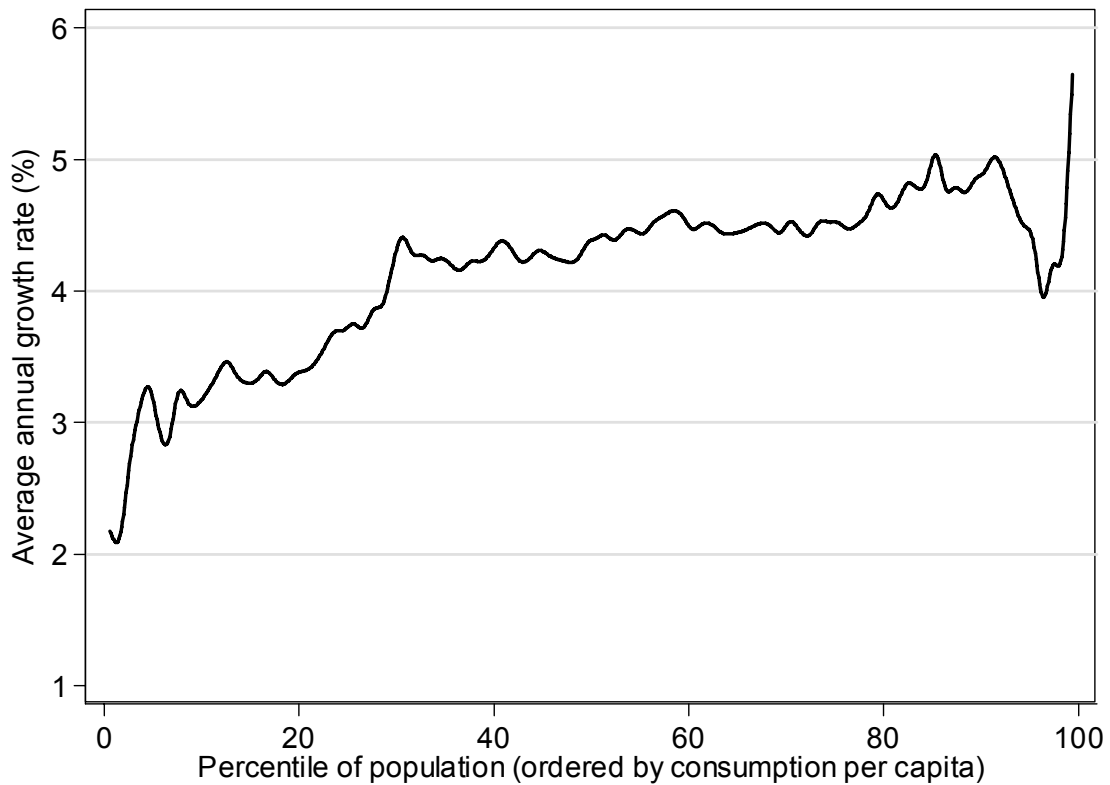
¹¹ Indeed, the *GE(2)* inequality measure, which gives higher weight to richer households, has increased sixfold.

a sharp rise in the consumption growth of the richest households relative to the sample as a whole. Of course, given Maputo City's capital status, with all the associated economic trappings this brings, that it is home to the richest households is no surprise. However, it is also home to a large impoverished population, including squatters, and is the final destination for many rural-urban migrants. What these results indicate therefore is that the benefits of economic growth in the city in recent years may not be reaching the poorer sections of society.

As shown in Table 6, most of the changes in the Gini coefficient and $GE(1)$ index at the national and subnational levels are not statistically significant. The increase in inequality in the southern region is significant, driven in part by the increased inequality within Maputo City, which is also significant. Tete is the only other province where increased inequality is significant, and that only for the $GE(1)$.

Another way to examine the relationship between changes in inequality and poverty reduction over time is to examine the rate of growth in consumption for different percentiles of the sample population. To do this, both samples were ordered from poorest to richest, and the difference in consumption calculated for each percentile. The annual average growth rates were calculated by taking the differences in consumption between the two samples for each percentile. The increase in mean consumption (from 97 to 128 percent of the poverty line) reflects an average annual growth rate in consumption of 4.6 percent. As illustrated in Figure 4, the average annual growth rate was higher among the nonpoor, thus increasing total inequality. Naturally, the extent of poverty reduction is less than if the same average growth rate had occurred with no change in inequality, but the difference is small. For example, had all percentiles of the population enjoyed the mean rate of growth in consumption, measured poverty in 2002-03 would only have fallen by a further percentage point to 53.0 percent of the population, rather than the 54.1 percent it actually stood at. At the national level we conclude that broad-based consumption growth has occurred.

Figure 4—Growth rate in consumption per capita, by percentile, 1996-97 to 2002-03



Inequality Decomposed by Household Characteristics

The $GE(1)$ estimates of inequality were decomposed into within-group and between-group components for a set of household characteristics. Of the total $GE(1)$ inequality in the sample, 5.4 percent is accounted for by differences in consumption between provinces, leaving 94.6 percent of inequality to be explained by inequalities within the provinces. These findings are important as they demonstrate that the difference in mean consumption between provinces is not the major explanation for inequality within the sample.¹²

¹² That only 5.4 percent of total inequality can be attributed to differences in the provincial means of consumption may appear surprising. Because of the additive nature of the decomposition, it follows that, other things equal, the between-share increases with the number of subgroups. Therefore, at the national level, inequality is 100 percent within, and at the individual level, inequality is 100 percent between.

We also decompose inequality by subgroup, based on key household characteristics. Table 7 disaggregates the total 2002–03 sample according to four characteristics: area of residence (rural or urban), sex of the head of household, literacy of the head of household, and whether or not the head of household’s principal sector of employment is agriculture. This yields 16 subgroups. As shown in Table 7, only 10 percent of total inequality is explained by differences in the means of these 16 subgroups, whereas 90 percent of inequality arises from inequality within the subgroups.

Table 7—Static decomposition of inequality, by subgroups, using the *GE(1)* measure, 2002-03

Characteristics of the household and head of household	Population share	<i>GE(1)</i> for subgroup	Percent of total
Rural, male, agricultural, illiterate	25.0	0.221	
Rural, male, agricultural, literate	22.6	0.199	
Rural, male, nonagricultural, illiterate	1.5	0.182	
Rural, male, nonagricultural, literate	6.7	0.427	
Rural, female, agricultural, illiterate	11.4	0.248	
Rural, female, agricultural, literate	1.8	0.319	
Rural, female, nonagricultural, illiterate	0.1	0.188	
Rural, female, nonagricultural, literate	0.2	0.335	
Urban, male, agricultural, illiterate	2.9	0.141	
Urban, male, agricultural, literate	4.4	0.496	
Urban, male, nonagricultural, illiterate	1.4	0.181	
Urban, male, nonagricultural, literate	15.7	0.523	
Urban, female, agricultural, illiterate	2.7	0.208	
Urban, female, agricultural, literate	1.0	0.683	
Urban, female, nonagricultural, illiterate	0.9	0.222	
Urban, female, nonagricultural, literate	1.7	0.383	
Within-group inequality		0.331	89.6
Between-group inequality		0.038	10.4

By contrast, some 7.2 percent of total inequality was accounted for by differences in consumption between those households whose household head’s principal livelihood was in agriculture and those whose employment was nonagriculturally based.¹³ This is an important finding as it demonstrates that there is considerably more inequality between agricultural and nonagricultural households than between rural and urban

¹³ That 7.2 percent of total inequality is accounted for by the agricultural/nonagricultural household head variable is notable, given that this is a simple two-category variable.

households per se. A key reason for this is the large number of urban households whose heads reported agriculture to be their chief source of income. Of the 4,005 household heads defined as urban dwellers in the 2002–03 survey, 1,193 identified agriculture as their chief income source. Notably the mean consumption for these households was just below the poverty line (at 99 percent of the poverty line). By contrast, the other 2,812 urban households whose heads' main income source was nonagricultural had a mean consumption of 178 percent of the poverty line. A similar difference emerges between rural households whose heads' main income source was agriculture and those whose income was nonagricultural, though there are relatively few of the latter group (see Table 8). Nevertheless, as the high standard deviations suggest, there is considerable inequality between households within these groups, particularly those households whose heads' main income source is nonagricultural.

Table 8—Rural and urban agricultural and nonagricultural households mean consumption, 2002-03

Grouping	Number of households	Mean consumption (as proportion of poverty line)	Standard deviation
Urban nonagricultural head	2,812	1.78	3.00
Urban agricultural head	1,193	0.99	1.23
Rural nonagricultural head	745	1.55	2.27
Rural agricultural head	3,950	1.08	0.87

Changes over time in inequality between subpopulations were also observed. The amount of consumption inequality in the sample explained by differences between living in rural and urban areas has remained more or less the same between the two sample periods (see Table 9). By contrast, the amount of inequality accounted for by differences in mean consumption between individuals living in different provinces and regions was far less in the 2002–03 survey. In 1996–97, the inequality between provinces accounted for 8.0 percent of the total inequality. By 2002–03, inequality between provinces only accounted for 5.4 percent of total inequality. This is important as it indicates that

inequality between provinces and regions has actually declined between the two survey periods.¹⁴

Table 9—Static decompositions, by subgroups, for both samples, using the *GE(1)* measure

Subgrouping	Percent of total inequality in sample accounted for in 1996–97	Percent of total inequality in sample accounted for in 2002–03
Rural-urban	2.6	2.5
Region	3.8	2.5
Province	8.0	5.4

4. Conclusions

The pattern of growth in Mozambique between 1996–97 and 2002–03 has benefited the poor to a considerable extent. The proportion of the population living below the poverty line has fallen by 15 percentage points. Moreover, all percentiles of the population have seen their consumption per capita grow in real terms at a rate of more than 3 percent annually during this period. Nevertheless, though all sections of society have enjoyed a rapid annual increase in consumption, the rate of growth in consumption has been slightly higher for richer households. This means that point estimates of inequality have increased, usually moderately and without statistical significance, with the Gini coefficient rising from 0.40 in 1996–97 to 0.42 in 2002–03.

In determining whether growth in Mozambique has been pro-poor, it is clear that this depends on what definition is used. Certainly growth in Mozambique has been broad-based, as it has benefited all percentiles of the population and the change in inequality measures at the national level have not been significant. Yet, 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

14 Excluding the Maputo City households, the amount of total inequality explained by differences in the mean consumption between provinces fell from 8.0 percent to 5.9 percent in the 1996-97 IAF, compared to a fall of just 0.1 percent from 5.4 percent in 2002–03.

Mozambique would not be deemed pro-poor. Given the 15 percentage point fall in the poverty headcount, this seems somewhat unintuitive. Indeed, using the more popular definition proposed by Ravallion and Chen (2003), that growth is pro-poor when the poverty incidence falls, one must conclude that the pattern of growth in Mozambique between 1996–97 has been pro-poor.

Interestingly, the use of the entropy class of inequality measures indicates inequality in real consumption between provinces and regions has diminished over time, which is in contrast to many popular claims. Nevertheless, the rapid rise in inequality observed in Maputo City is of growing concern and indicates the pattern of economic growth in the city in recent years may not be benefiting the poorer sections of society.

This paper has sought to describe the pattern of change in inequality in Mozambique rather than state the underlying reasons for the changes observed. Clearly, it is imperative that attention now turns to addressing these issues and devising policies to ensure that the growth in Mozambique continues to benefit the poorest sections of society.

References

- Arndt, C., and K. Simler. 2005. *Estimating utility consistent poverty lines*. Food Consumption and Nutrition Division Discussion Paper 189. Washington, D.C.: International Food Policy Research Institute.
- Christiaensen, L., L. Demery, and S. Paternostro. 2003. Macro and micro perspectives of growth and poverty in Africa. *World Bank Economic Review* 17 (3): 317–347.
- Dollar, D., and A. Kraay. 2002. Growth is good for the poor. *Journal of Economic Growth* 7 (3): 195–226.
- Hardle, W. 1990. *Applied nonparametric regression*. Cambridge: Cambridge University Press.
- INE (Instituto Nacional de Estatística). 2004. *Inquérito nacional aos agregados familiares sobre orçamento familiar 2002–03*. Maputo.
- Jenkins, S. 1991. The measurement of income inequality. In *Economic inequality and poverty: International perspectives*, ed. L. Osberg. Armonk, N.Y.: M. E. Sharpe, Inc.
- Kakwani, N., and E. Pernia. 2000. What is pro-poor growth? *Asian Development Review* 16 (1): 1–22.
- Kraay, A. 2004. *When is growth pro-poor? Cross-country evidence*. IMF Working Paper WP/04/47. Washington, D.C.: International Monetary Fund.
- MPF/UEM/IFPRI (Mozambique Ministry of Planning and Finance/Eduardo Mondlane University/International Food Policy Research Institute). 1998. *Understanding poverty and well-being in Mozambique: The first national assessment (1996–97)*. Maputo. Photocopied.
- _____. 2004. *Poverty and well-being in Mozambique: The Second National Assessment (2002-2003)*. Maputo. Photocopied.
- Oxfam. 2000. Growth with equity is good for the poor. Available at http://www.oxfam.org.uk/what_we_do/issues/debt_aid/growth_equity.htm

- Ravallion, M. 1994. *Poverty comparisons*. Chur, Switzerland: Harwood Academic Publishers.
- _____. 1998. *Poverty lines in theory and practice*. Living Standards Measurement Study Working Paper No. 133. Washington, D.C.: World Bank.
- _____. 2001. Growth, inequality, and poverty: Looking beyond averages. *World Development* 29 (11): 1803–1815.
- Ravallion, M., and S. Chen. 2003. Measuring pro-poor growth. *Economics Letters* 78: 93–99.
- Ravallion, M., and M. Lokshin. 2003. *On the utility consistency of poverty lines*. World Bank Policy Research Working Paper No. 3157. Washington, D.C.: World Bank.
- Tarp, F., K. Simler, C. Matusse, R. Heltberg, and G. Dava. 2002. The robustness of poverty profiles reconsidered. *Economic Development and Cultural Change* 51 (1): 77–108.
- UNDP (United Nations Development Programme). 1997. *Human development report 1997: Human development to eradicate poverty*. Available at <http://hdr.undp.org/reports/global/1997/en/>

FCND DISCUSSION PAPERS

- 201 *Community, Inequality, and Local Public Goods: Evidence from School Financing in South Africa*, Futoshi Yamauchi and Shinichi Nishiyama, September 2005
- 200 *Is Greater Decisionmaking Power of Women Associated with Reduced Gender Discrimination in South Asia?* Lisa C. Smith and Elizabeth M. Byron, August 2005
- 199 *Evaluating the Cost of Poverty Alleviation Transfer Programs: An Illustration Based on PROGRESA in Mexico*, David Coady, Raul Perez, and Hadid Vera-Ilamas, July 2005
- 198 *Why the Poor in Rural Malawi Are Where They Are: An Analysis of the Spatial Determinants of the Local Prevalence of Poverty*, Todd Benson, Jordan Chamberlin, and Ingrid Rhinehart, July 2005
- 194 *Livelihoods, Growth, and Links to Market Towns in 15 Ethiopian Villages*, Stefan Dercon and John Hoddinott, July 2005
- 193 *Livelihood Diversification and Rural-Urban Linkages in Vietnam's Red River Delta*, Hoang Xuan Thanh, Dang Nguyen Anh, and Ceclila Tacoli, June 2005
- 192 *Poverty, Inequality, and Geographic Targeting: Evidence from Small-Area Estimates in Mozambique*, Kenneth R. Simler and Virgulino Nhate, June 2005
- 191 *Program Participation Under Means-Testing and Self-Selection Targeting Methods*, David P. Coady and Susan W. Parker, April 2005
- 190 *Social Learning, Neighborhood Effects, and Investment in Human Capital: Evidence from Green-Revolution India*, Futoshi Yamauchi, April 2005
- 189 *Estimating Utility-Consistent Poverty Lines*, Channing Arndt and Kenneth R. Simler, March 2005
- 188 *Coping with the "Coffee Crisis" in Central America: The Role of the Nicaraguan Red de Protección Social (RPS)*, John A. Maluccio, February 2005
- 187 *The Use of Operations Research as a Tool for Monitoring and Managing Food-Assisted Maternal/Child Health and Nutrition (MCHN) Programs: An Example from Haiti*, Cornelia Loechl, Marie T. Ruel, Gretel Pelto, and Purnima Menon, February 2005
- 186 *Are Wealth Transfers Biased Against Girls? Gender Differences in Land Inheritance and Schooling Investment in Ghana's Western Region*, Agnes R. Quisumbing, Ellen M. Payongayong, and Keijiro Otsuka, August 2004
- 185 *Assets at Marriage in Rural Ethiopia*, Marcel Fafchamps and Agnes Quisumbing, August 2004
- 184 *Impact Evaluation of a Conditional Cash Transfer Program: The Nicaraguan Red de Protección Social*, John A. Maluccio and Rafael Flores, July 2004
- 183 *Poverty in Malawi, 1998*, Todd Benson, Charles Machinjili, and Lawrence Kachikopa, July 2004
- 182 *Race, Equity, and Public Schools in Post-Apartheid South Africa: Is Opportunity Equal for All Kids?* Futoshi Yamauchi, June 2004
- 181 *Scaling Up Community-Driven Development: A Synthesis of Experience*, Stuart Gillespie, June 2004
- 180 *Kudumbashree—Collective Action for Poverty Alleviation and Women's Employment*, Suneetha Kadiyala, May 2004
- 179 *Scaling Up HIV/AIDS Interventions Through Expanded Partnerships (STEPS) in Malawi*, Suneetha Kadiyala, May 2004
- 178 *Community-Driven Development and Scaling Up of Microfinance Services: Case Studies from Nepal and India*, Manohar P. Sharma, April 2004
- 177 *Community Empowerment and Scaling Up in Urban Areas: The Evolution of PUSH/PROSPECT in Zambia*, James Garrett, April 2004
- 176 *Why Is Child Malnutrition Lower in Urban than Rural Areas? Evidence from 36 Developing Countries*, Lisa C. Smith, Marie T. Ruel, and Aida Ndiaye, March 2004
- 175 *Consumption Smoothing and Vulnerability in the Zone Lacustre, Mali*, Sarah Harrower and John Hoddinott, March 2004
-

FCND DISCUSSION PAPERS

- 174 *The Cost of Poverty Alleviation Transfer Programs: A Comparative Analysis of Three Programs in Latin America*, Natàlia Caldés, David Coady, and John A. Maluccio, February 2004
- 173 *Food Aid Distribution in Bangladesh: Leakage and Operational Performance*, Akhter U. Ahmed, Shahidur Rashid, Manohar Sharma, and Sajjad Zohir in collaboration with Mohammed Khaliquzzaman, Sayedur Rahman, and the Data Analysis and Technical Assistance Limited, February 2004
- 172 *Designing and Evaluating Social Safety Nets: Theory, Evidence, and Policy Conclusions*, David P. Coady, January 2004
- 171 *Living Life: Overlooked Aspects of Urban Employment*, James Garrett, January 2004
- 170 *From Research to Program Design: Use of Formative Research in Haiti to Develop a Behavior Change Communication Program to Prevent Malnutrition*, Purnima Menon, Marie T. Ruel, Cornelia Loechl, and Gretel Pelto, December 2003
- 169 *Nonmarket Networks Among Migrants: Evidence from Metropolitan Bangkok, Thailand*, Futoshi Yamauchi and Sakiko Tanabe, December 2003
- 168 *Long-Term Consequences of Early Childhood Malnutrition*, Harold Alderman, John Hoddinott, and Bill Kinsey, December 2003
- 167 *Public Spending and Poverty in Mozambique*, Rasmus Heltberg, Kenneth Simler, and Finn Tarp, December 2003
- 166 *Are Experience and Schooling Complementary? Evidence from Migrants' Assimilation in the Bangkok Labor Market*, Futoshi Yamauchi, December 2003
- 165 *What Can Food Policy Do to Redirect the Diet Transition?* Lawrence Haddad, December 2003
- 164 *Impacts of Agricultural Research on Poverty: Findings of an Integrated Economic and Social Analysis*, Ruth Meinzen-Dick, Michelle Adato, Lawrence Haddad, and Peter Hazell, October 2003
- 163 *An Integrated Economic and Social Analysis to Assess the Impact of Vegetable and Fishpond Technologies on Poverty in Rural Bangladesh*, Kelly Hallman, David Lewis, and Suraiya Begum, October 2003
- 162 *The Impact of Improved Maize Germplasm on Poverty Alleviation: The Case of Tuxpeño-Derived Material in Mexico*, Mauricio R. Bellon, Michelle Adato, Javier Becerril, and Dubravka Mindek, October 2003
- 161 *Assessing the Impact of High-Yielding Varieties of Maize in Resettlement Areas of Zimbabwe*, Michael Bourdillon, Paul Hebinck, John Hoddinott, Bill Kinsey, John Marondo, Netsayi Mudege, and Trudy Owens, October 2003
- 160 *The Impact of Agroforestry-Based Soil Fertility Replenishment Practices on the Poor in Western Kenya*, Frank Place, Michelle Adato, Paul Hebinck, and Mary Omosa, October 2003
- 159 *Rethinking Food Aid to Fight HIV/AIDS*, Suneetha Kadiyala and Stuart Gillespie, October 2003
- 158 *Food Aid and Child Nutrition in Rural Ethiopia*, Agnes R. Quisumbing, September 2003
- 157 *HIV/AIDS, Food Security, and Rural Livelihoods: Understanding and Responding*, Michael Loevinsohn and Stuart Gillespie, September 2003
- 156 *Public Policy, Food Markets, and Household Coping Strategies in Bangladesh: Lessons from the 1998 Floods*, Carlo del Ninno, Paul A. Dorosh, and Lisa C. Smith, September 2003
- 155 *Consumption Insurance and Vulnerability to Poverty: A Synthesis of the Evidence from Bangladesh, Ethiopia, Mali, Mexico, and Russia*, Emmanuel Skoufias and Agnes R. Quisumbing, August 2003
- 154 *Cultivating Nutrition: A Survey of Viewpoints on Integrating Agriculture and Nutrition*, Carol E. Levin, Jennifer Long, Kenneth R. Simler, and Charlotte Johnson-Welch, July 2003
- 153 *Maquiladoras and Market Mamas: Women's Work and Childcare in Guatemala City and Accra*, Agnes R. Quisumbing, Kelly Hallman, and Marie T. Ruel, June 2003
- 152 *Income Diversification in Zimbabwe: Welfare Implications From Urban and Rural Areas*, Lire Ersado, June 2003
-

FCND DISCUSSION PAPERS

- 151 *Childcare and Work: Joint Decisions Among Women in Poor Neighborhoods of Guatemala City*, Kelly Hallman, Agnes R. Quisumbing, Marie T. Ruel, and Bénédicte de la Brière, June 2003
- 150 *The Impact of PROGRESA on Food Consumption*, John Hoddinott and Emmanuel Skoufias, May 2003
- 149 *Do Crowded Classrooms Crowd Out Learning? Evidence From the Food for Education Program in Bangladesh*, Akhter U. Ahmed and Mary Arends-Kuenning, May 2003
- 148 *Stunted Child-Overweight Mother Pairs: An Emerging Policy Concern?* James L. Garrett and Marie T. Ruel, April 2003
- 147 *Are Neighbors Equal? Estimating Local Inequality in Three Developing Countries*, Chris Elbers, Peter Lanjouw, Johan Mistiaen, Berk Özler, and Kenneth Simler, April 2003
- 146 *Moving Forward with Complementary Feeding: Indicators and Research Priorities*, Marie T. Ruel, Kenneth H. Brown, and Laura E. Caulfield, April 2003
- 145 *Child Labor and School Decisions in Urban and Rural Areas: Cross Country Evidence*, Lire Ersado, December 2002
- 144 *Targeting Outcomes Redux*, David Coady, Margaret Grosh, and John Hoddinott, December 2002
- 143 *Progress in Developing an Infant and Child Feeding Index: An Example Using the Ethiopia Demographic and Health Survey 2000*, Mary Arimond and Marie T. Ruel, December 2002
- 142 *Social Capital and Coping With Economic Shocks: An Analysis of Stunting of South African Children*, Michael R. Carter and John A. Maluccio, December 2002
- 141 *The Sensitivity of Calorie-Income Demand Elasticity to Price Changes: Evidence from Indonesia*, Emmanuel Skoufias, November 2002
- 140 *Is Dietary Diversity an Indicator of Food Security or Dietary Quality? A Review of Measurement Issues and Research Needs*, Marie T. Ruel, November 2002
- 139 *Can South Africa Afford to Become Africa's First Welfare State?* James Thurlow, October 2002
- 138 *The Food for Education Program in Bangladesh: An Evaluation of its Impact on Educational Attainment and Food Security*, Akhter U. Ahmed and Carlo del Ninno, September 2002
- 137 *Reducing Child Undernutrition: How Far Does Income Growth Take Us?* Lawrence Haddad, Harold Alderman, Simon Appleton, Lina Song, and Yisehac Yohannes, August 2002
- 136 *Dietary Diversity as a Food Security Indicator*, John Hoddinott and Yisehac Yohannes, June 2002
- 135 *Trust, Membership in Groups, and Household Welfare: Evidence from KwaZulu-Natal, South Africa*, Lawrence Haddad and John A. Maluccio, May 2002
- 134 *In-Kind Transfers and Household Food Consumption: Implications for Targeted Food Programs in Bangladesh*, Carlo del Ninno and Paul A. Dorosh, May 2002
- 133 *Avoiding Chronic and Transitory Poverty: Evidence From Egypt, 1997-99*, Lawrence Haddad and Akhter U. Ahmed, May 2002
- 132 *Weighing What's Practical: Proxy Means Tests for Targeting Food Subsidies in Egypt*, Akhter U. Ahmed and Howarth E. Bouis, May 2002
- 131 *Does Subsidized Childcare Help Poor Working Women in Urban Areas? Evaluation of a Government-Sponsored Program in Guatemala City*, Marie T. Ruel, Bénédicte de la Brière, Kelly Hallman, Agnes Quisumbing, and Nora Coj, April 2002
- 130 *Creating a Child Feeding Index Using the Demographic and Health Surveys: An Example from Latin America*, Marie T. Ruel and Purnima Menon, April 2002
- 129 *Labor Market Shocks and Their Impacts on Work and Schooling: Evidence from Urban Mexico*, Emmanuel Skoufias and Susan W. Parker, March 2002
- 128 *Assessing the Impact of Agricultural Research on Poverty Using the Sustainable Livelihoods Framework*, Michelle Adato and Ruth Meinzen-Dick, March 2002
-

FCND DISCUSSION PAPERS

- 127 *A Cost-Effectiveness Analysis of Demand- and Supply-Side Education Interventions: The Case of PROGRESA in Mexico*, David P. Coady and Susan W. Parker, March 2002
- 126 *Health Care Demand in Rural Mozambique: Evidence from the 1996/97 Household Survey*, Magnus Lindelow, February 2002
- 125 *Are the Welfare Losses from Imperfect Targeting Important?*, Emmanuel Skoufias and David Coady, January 2002
- 124 *The Robustness of Poverty Profiles Reconsidered*, Finn Tarp, Kenneth Simler, Cristina Matusse, Rasmus Heltberg, and Gabriel Dava, January 2002
- 123 *Conditional Cash Transfers and Their Impact on Child Work and Schooling: Evidence from the PROGRESA Program in Mexico*, Emmanuel Skoufias and Susan W. Parker, October 2001
- 122 *Strengthening Public Safety Nets: Can the Informal Sector Show the Way?*, Jonathan Morduch and Manohar Sharma, September 2001
- 121 *Targeting Poverty Through Community-Based Public Works Programs: A Cross-Disciplinary Assessment of Recent Experience in South Africa*, Michelle Adato and Lawrence Haddad, August 2001
- 120 *Control and Ownership of Assets Within Rural Ethiopian Households*, Marcel Fafchamps and Agnes R. Quisumbing, August 2001
- 119 *Assessing Care: Progress Towards the Measurement of Selected Childcare and Feeding Practices, and Implications for Programs*, Mary Arimond and Marie T. Ruel, August 2001
- 118 *Is PROGRESA Working? Summary of the Results of an Evaluation by IFPRI*, Emmanuel Skoufias and Bonnie McClafferty, July 2001
- 117 *Evaluation of the Distributional Power of PROGRESA's Cash Transfers in Mexico*, David P. Coady, July 2001
- 116 *A Multiple-Method Approach to Studying Childcare in an Urban Environment: The Case of Accra, Ghana*, Marie T. Ruel, Margaret Armar-Klemesu, and Mary Arimond, June 2001
- 115 *Are Women Overrepresented Among the Poor? An Analysis of Poverty in Ten Developing Countries*, Agnes R. Quisumbing, Lawrence Haddad, and Christina Peña, June 2001
- 114 *Distribution, Growth, and Performance of Microfinance Institutions in Africa, Asia, and Latin America*, Cécile Lapenu and Manfred Zeller, June 2001
- 113 *Measuring Power*, Elizabeth Frankenberg and Duncan Thomas, June 2001
- 112 *Effective Food and Nutrition Policy Responses to HIV/AIDS: What We Know and What We Need to Know*, Lawrence Haddad and Stuart Gillespie, June 2001
- 111 *An Operational Tool for Evaluating Poverty Outreach of Development Policies and Projects*, Manfred Zeller, Manohar Sharma, Carla Henry, and Cécile Lapenu, June 2001
- 110 *Evaluating Transfer Programs Within a General Equilibrium Framework*, Dave Coady and Rebecca Lee Harris, June 2001
- 109 *Does Cash Crop Adoption Detract From Childcare Provision? Evidence From Rural Nepal*, Michael J. Paolisso, Kelly Hallman, Lawrence Haddad, and Shibesh Regmi, April 2001
- 108 *How Efficiently Do Employment Programs Transfer Benefits to the Poor? Evidence from South Africa*, Lawrence Haddad and Michelle Adato, April 2001
- 107 *Rapid Assessments in Urban Areas: Lessons from Bangladesh and Tanzania*, James L. Garrett and Jeanne Downen, April 2001
- 106 *Strengthening Capacity to Improve Nutrition*, Stuart Gillespie, March 2001
- 105 *The Nutritional Transition and Diet-Related Chronic Diseases in Asia: Implications for Prevention*, Barry M. Popkin, Sue Horton, and Soowon Kim, March 2001
- 104 *An Evaluation of the Impact of PROGRESA on Preschool Child Height*, Jere R. Behrman and John Hoddinott, March 2001
-

FCND DISCUSSION PAPERS

- 103 *Targeting the Poor in Mexico: An Evaluation of the Selection of Households for PROGRESA*, Emmanuel Skoufias, Benjamin Davis, and Sergio de la Vega, March 2001
- 102 *School Subsidies for the Poor: Evaluating a Mexican Strategy for Reducing Poverty*, T. Paul Schultz, March 2001
- 101 *Poverty, Inequality, and Spillover in Mexico's Education, Health, and Nutrition Program*, Sudhanshu Handa, Mari-Carmen Huerta, Raul Perez, and Beatriz Traffon, March 2001
- 100 *On the Targeting and Redistributive Efficiencies of Alternative Transfer Instruments*, David Coady and Emmanuel Skoufias, March 2001
- 99 *Cash Transfer Programs with Income Multipliers: PROCAMPO in Mexico*, Elisabeth Sadoulet, Alain de Janvry, and Benjamin Davis, January 2001
- 98 *Participation and Poverty Reduction: Issues, Theory, and New Evidence from South Africa*, John Hoddinott, Michelle Adato, Tim Besley, and Lawrence Haddad, January 2001
- 97 *Socioeconomic Differentials in Child Stunting Are Consistently Larger in Urban Than in Rural Areas*, Purnima Menon, Marie T. Ruel, and Saul S. Morris, December 2000
- 96 *Attrition in Longitudinal Household Survey Data: Some Tests for Three Developing-Country Samples*, Harold Alderman, Jere R. Behrman, Hans-Peter Kohler, John A. Maluccio, Susan Cotts Watkins, October 2000
- 95 *Attrition in the Kwazulu Natal Income Dynamics Study 1993-1998*, John Maluccio, October 2000
- 94 *Targeting Urban Malnutrition: A Multicity Analysis of the Spatial Distribution of Childhood Nutritional Status*, Saul Sutkover Morris, September 2000
- 93 *Mother-Father Resource Control, Marriage Payments, and Girl-Boy Health in Rural Bangladesh*, Kelly K. Hallman, September 2000
- 92 *Assessing the Potential for Food-Based Strategies to Reduce Vitamin A and Iron Deficiencies: A Review of Recent Evidence*, Marie T. Ruel and Carol E. Levin, July 2000
- 91 *Comparing Village Characteristics Derived From Rapid Appraisals and Household Surveys: A Tale From Northern Mali*, Luc Christiaensen, John Hoddinott, and Gilles Bergeron, July 2000
- 90 *Empirical Measurements of Households' Access to Credit and Credit Constraints in Developing Countries: Methodological Issues and Evidence*, Aliou Diagne, Manfred Zeller, and Manohar Sharma, July 2000
- 89 *The Role of the State in Promoting Microfinance Institutions*, Cécile Lapenu, June 2000
- 88 *The Determinants of Employment Status in Egypt*, Ragui Assaad, Fatma El-Hamidi, and Akhter U. Ahmed, June 2000
- 87 *Changes in Intrahousehold Labor Allocation to Environmental Goods Collection: A Case Study from Rural Nepal*, Priscilla A. Cooke, May 2000
- 86 *Women's Assets and Intrahousehold Allocation in Rural Bangladesh: Testing Measures of Bargaining Power*, Agnes R. Quisumbing and Bénédicte de la Brière, April 2000
- 85 *Intrahousehold Impact of Transfer of Modern Agricultural Technology: A Gender Perspective*, Ruchira Tabassum Naved, April 2000
- 84 *Intrahousehold Allocation and Gender Relations: New Empirical Evidence from Four Developing Countries*, Agnes R. Quisumbing and John A. Maluccio, April 2000
- 83 *Quality or Quantity? The Supply-Side Determinants of Primary Schooling in Rural Mozambique*, Sudhanshu Handa and Kenneth R. Simler, March 2000
- 82 *Pathways of Rural Development in Madagascar: An Empirical Investigation of the Critical Triangle of Environmental Sustainability, Economic Growth, and Poverty Alleviation*, Manfred Zeller, Cécile Lapenu, Bart Minten, Eliane Ralison, Désiré Randrianaivo, and Claude Randrianarisoa, March 2000
- 81 *The Constraints to Good Child Care Practices in Accra: Implications for Programs*, Margaret Armar-Klemesu, Marie T. Ruel, Daniel G. Maxwell, Carol E. Levin, and Saul S. Morris, February 2000
-

FCND DISCUSSION PAPERS

- 80 *Nontraditional Crops and Land Accumulation Among Guatemalan Smallholders: Is the Impact Sustainable?* Calogero Carletto, February 2000
- 79 *Adult Health in the Time of Drought*, John Hoddinott and Bill Kinsey, January 2000
- 78 *Determinants of Poverty in Mozambique: 1996-97*, Gaurav Datt, Kenneth Simler, Sanjukta Mukherjee, and Gabriel Dava, January 2000
- 77 *The Political Economy of Food Subsidy Reform in Egypt*, Tammi Gutner, November 1999.
- 76 *Raising Primary School Enrolment in Developing Countries: The Relative Importance of Supply and Demand*, Sudhanshu Handa, November 1999
- 75 *Determinants of Poverty in Egypt, 1997*, Gaurav Datt and Dean Jolliffe, October 1999
- 74 *Can Cash Transfer Programs Work in Resource-Poor Countries? The Experience in Mozambique*, Jan W. Low, James L. Garrett, and Vitória Ginja, October 1999
- 73 *Social Roles, Human Capital, and the Intrahousehold Division of Labor: Evidence from Pakistan*, Marcel Fafchamps and Agnes R. Quisumbing, October 1999
- 72 *Validity of Rapid Estimates of Household Wealth and Income for Health Surveys in Rural Africa*, Saul S. Morris, Calogero Carletto, John Hoddinott, and Luc J. M. Christiaensen, October 1999
- 71 *Social Capital and Income Generation in South Africa, 1993-98*, John Maluccio, Lawrence Haddad, and Julian May, September 1999
- 70 *Child Health Care Demand in a Developing Country: Unconditional Estimates from the Philippines*, Kelly Hallman, August 1999
- 69 *Supply Response of West African Agricultural Households: Implications of Intrahousehold Preference Heterogeneity*, Lisa C. Smith and Jean-Paul Chavas, July 1999
- 68 *Early Childhood Nutrition and Academic Achievement: A Longitudinal Analysis*, Paul Glewwe, Hanan Jacoby, and Elizabeth King, May 1999
- 67 *Determinants of Household Access to and Participation in Formal and Informal Credit Markets in Malawi*, Aliou Diagne, April 1999
- 66 *Working Women in an Urban Setting: Traders, Vendors, and Food Security in Accra*, Carol E. Levin, Daniel G. Maxwell, Margaret Armar-Klemesu, Marie T. Ruel, Saul S. Morris, and Clement Ahiadeke, April 1999
- 65 *Are Determinants of Rural and Urban Food Security and Nutritional Status Different? Some Insights from Mozambique*, James L. Garrett and Marie T. Ruel, April 1999
- 64 *Some Urban Facts of Life: Implications for Research and Policy*, Marie T. Ruel, Lawrence Haddad, and James L. Garrett, April 1999
- 63 *Are Urban Poverty and Undernutrition Growing? Some Newly Assembled Evidence*, Lawrence Haddad, Marie T. Ruel, and James L. Garrett, April 1999
- 62 *Good Care Practices Can Mitigate the Negative Effects of Poverty and Low Maternal Schooling on Children's Nutritional Status: Evidence from Accra*, Marie T. Ruel, Carol E. Levin, Margaret Armar-Klemesu, Daniel Maxwell, and Saul S. Morris, April 1999
- 61 *Does Geographic Targeting of Nutrition Interventions Make Sense in Cities? Evidence from Abidjan and Accra*, Saul S. Morris, Carol Levin, Margaret Armar-Klemesu, Daniel Maxwell, and Marie T. Ruel, April 1999
- 60 *Explaining Child Malnutrition in Developing Countries: A Cross-Country Analysis*, Lisa C. Smith and Lawrence Haddad, April 1999
- 59 *Placement and Outreach of Group-Based Credit Organizations: The Cases of ASA, BRAC, and PROSHIKA in Bangladesh*, Manohar Sharma and Manfred Zeller, March 1999
- 58 *Women's Land Rights in the Transition to Individualized Ownership: Implications for the Management of Tree Resources in Western Ghana*, Agnes Quisumbing, Ellen Payongayong, J. B. Aidoo, and Keijiro Otsuka, February 1999
-

FCND DISCUSSION PAPERS

- 57 *The Structure of Wages During the Economic Transition in Romania*, Emmanuel Skoufias, February 1999
- 56 *How Does the Human Rights Perspective Help to Shape the Food and Nutrition Policy Research Agenda?*, Lawrence Haddad and Arne Oshaug, February 1999
- 55 *Efficiency in Intrahousehold Resource Allocation*, Marcel Fafchamps, December 1998
- 54 *Endogeneity of Schooling in the Wage Function: Evidence from the Rural Philippines*, John Maluccio, November 1998
- 53 *Agricultural Wages and Food Prices in Egypt: A Governorate-Level Analysis for 1976-1993*, Gaurav Datt and Jennifer Olmsted, November 1998
- 52 *Testing Nash Bargaining Household Models With Time-Series Data*, John Hoddinott and Christopher Adam, November 1998
- 51 *Urban Challenges to Food and Nutrition Security: A Review of Food Security, Health, and Caregiving in the Cities*, Marie T. Ruel, James L. Garrett, Saul S. Morris, Daniel Maxwell, Arne Oshaug, Patrice Engle, Purnima Menon, Alison Slack, and Lawrence Haddad, October 1998
- 50 *Computational Tools for Poverty Measurement and Analysis*, Gaurav Datt, October 1998
- 49 *A Profile of Poverty in Egypt: 1997*, Gaurav Datt, Dean Jolliffe, and Manohar Sharma, August 1998.
- 48 *Human Capital, Productivity, and Labor Allocation in Rural Pakistan*, Marcel Fafchamps and Agnes R. Quisumbing, July 1998
- 47 *Poverty in India and Indian States: An Update*, Gaurav Datt, July 1998
- 46 *Impact of Access to Credit on Income and Food Security in Malawi*, Aliou Diagne, July 1998
- 45 *Does Urban Agriculture Help Prevent Malnutrition? Evidence from Kampala*, Daniel Maxwell, Carol Levin, and Joanne Csete, June 1998
- 44 *Can FAO's Measure of Chronic Undernourishment Be Strengthened?*, Lisa C. Smith, with a Response by Logan Naiken, May 1998
- 43 *How Reliable Are Group Informant Ratings? A Test of Food Security Rating in Honduras*, Gilles Bergeron, Saul Sutkover Morris, and Juan Manuel Medina Banegas, April 1998
- 42 *Farm Productivity and Rural Poverty in India*, Gaurav Datt and Martin Ravallion, March 1998
- 41 *The Political Economy of Urban Food Security in Sub-Saharan Africa*, Dan Maxwell, February 1998
- 40 *Can Qualitative and Quantitative Methods Serve Complementary Purposes for Policy Research? Evidence from Accra*, Dan Maxwell, January 1998
- 39 *Whose Education Matters in the Determination of Household Income: Evidence from a Developing Country*, Dean Jolliffe, November 1997
- 38 *Systematic Client Consultation in Development: The Case of Food Policy Research in Ghana, India, Kenya, and Mali*, Suresh Chandra Babu, Lynn R. Brown, and Bonnie McClafferty, November 1997
- 37 *Why Do Migrants Remit? An Analysis for the Dominican Sierra*, Bénédicte de la Brière, Alain de Janvry, Sylvie Lambert, and Elisabeth Sadoulet, October 1997
- 36 *The GAPVU Cash Transfer Program in Mozambique: An assessment*, Gaurav Datt, Ellen Payongayong, James L. Garrett, and Marie Ruel, October 1997
- 35 *Market Access by Smallholder Farmers in Malawi: Implications for Technology Adoption, Agricultural Productivity, and Crop Income*, Manfred Zeller, Aliou Diagne, and Charles Mataya, September 1997
- 34 *The Impact of Changes in Common Property Resource Management on Intrahousehold Allocation*, Philip Maggs and John Hoddinott, September 1997
- 33 *Human Milk—An Invisible Food Resource*, Anne Hatløy and Arne Oshaug, August 1997
- 32 *The Determinants of Demand for Micronutrients: An Analysis of Rural Households in Bangladesh*, Howarth E. Bouis and Mary Jane G. Novenario-Reese, August 1997
-

FCND DISCUSSION PAPERS

- 31 *Is There an Intrahousehold 'Flypaper Effect'? Evidence from a School Feeding Program*, Hanan Jacoby, August 1997
 - 30 *Plant Breeding: A Long-Term Strategy for the Control of Zinc Deficiency in Vulnerable Populations*, Marie T. Ruel and Howarth E. Bouis, July 1997
 - 29 *Gender, Property Rights, and Natural Resources*, Ruth Meinzen-Dick, Lynn R. Brown, Hilary Sims Feldstein, and Agnes R. Quisumbing, May 1997
 - 28 *Developing a Research and Action Agenda for Examining Urbanization and Caregiving: Examples from Southern and Eastern Africa*, Patrice L. Engle, Purnima Menon, James L. Garrett, and Alison Slack, April 1997
 - 27 *"Bargaining" and Gender Relations: Within and Beyond the Household*, Bina Agarwal, March 1997
 - 26 *Why Have Some Indian States Performed Better Than Others at Reducing Rural Poverty?*, Gaurav Datt and Martin Ravallion, March 1997
 - 25 *Water, Health, and Income: A Review*, John Hoddinott, February 1997
 - 24 *Child Care Practices Associated with Positive and Negative Nutritional Outcomes for Children in Bangladesh: A Descriptive Analysis*, Shubh K. Kumar Range, Ruchira Naved, and Saroj Bhattarai, February 1997
 - 23 *Better Rich, or Better There? Grandparent Wealth, Coresidence, and Intrahousehold Allocation*, Agnes R. Quisumbing, January 1997
 - 22 *Alternative Approaches to Locating the Food Insecure: Qualitative and Quantitative Evidence from South India*, Kimberly Chung, Lawrence Haddad, Jayashree Ramakrishna, and Frank Riely, January 1997
 - 21 *Livestock Income, Male/Female Animals, and Inequality in Rural Pakistan*, Richard H. Adams, Jr., November 1996
 - 20 *Macroeconomic Crises and Poverty Monitoring: A Case Study for India*, Gaurav Datt and Martin Ravallion, November 1996
 - 19 *Food Security and Nutrition Implications of Intrahousehold Bias: A Review of Literature*, Lawrence Haddad, Christine Peña, Chizuru Nishida, Agnes Quisumbing, and Alison Slack, September 1996
 - 18 *Care and Nutrition: Concepts and Measurement*, Patrice L. Engle, Purnima Menon, and Lawrence Haddad, August 1996
 - 17 *Remittances, Income Distribution, and Rural Asset Accumulation*, Richard H. Adams, Jr., August 1996
 - 16 *How Can Safety Nets Do More with Less? General Issues with Some Evidence from Southern Africa*, Lawrence Haddad and Manfred Zeller, July 1996
 - 15 *Repayment Performance in Group-Based credit Programs in Bangladesh: An Empirical Analysis*, Manohar Sharma and Manfred Zeller, July 1996
 - 14 *Demand for High-Value Secondary Crops in Developing Countries: The Case of Potatoes in Bangladesh and Pakistan*, Howarth E. Bouis and Gregory Scott, May 1996
 - 13 *Determinants of Repayment Performance in Credit Groups: The Role of Program Design, Intra-Group Risk Pooling, and Social Cohesion in Madagascar*, Manfred Zeller, May 1996
 - 12 *Child Development: Vulnerability and Resilience*, Patrice L. Engle, Sarah Castle, and Purnima Menon, April 1996
 - 11 *Rural Financial Policies for Food Security of the Poor: Methodologies for a Multicountry Research Project*, Manfred Zeller, Akhter Ahmed, Suresh Babu, Sumiter Broca, Aliou Diagne, and Manohar Sharma, April 1996
 - 10 *Women's Economic Advancement Through Agricultural Change: A Review of Donor Experience*, Christine Peña, Patrick Webb, and Lawrence Haddad, February 1996
 - 09 *Gender and Poverty: New Evidence from 10 Developing Countries*, Agnes R. Quisumbing, Lawrence Haddad, and Christine Peña, December 1995
-

FCND DISCUSSION PAPERS

- 08 *Measuring Food Insecurity: The Frequency and Severity of "Coping Strategies,"* Daniel G. Maxwell, December 1995
 - 07 *A Food Demand System Based on Demand for Characteristics: If There Is "Curvature" in the Slutsky Matrix, What Do the Curves Look Like and Why?,* Howarth E. Bouis, December 1995
 - 06 *Gender Differentials in Farm Productivity: Implications for Household Efficiency and Agricultural Policy,* Harold Alderman, John Hoddinott, Lawrence Haddad, and Christopher Udry, August 1995
 - 05 *Gender Differences in Agricultural Productivity: A Survey of Empirical Evidence,* Agnes R. Quisumbing, July 1995
 - 04 *Market Development and Food Demand in Rural China,* Jikun Huang and Scott Rozelle, June 1995
 - 03 *The Extended Family and Intrahousehold Allocation: Inheritance and Investments in Children in the Rural Philippines,* Agnes R. Quisumbing, March 1995
 - 02 *Determinants of Credit Rationing: A Study of Informal Lenders and Formal Credit Groups in Madagascar,* Manfred Zeller, October 1994
 - 01 *Agricultural Technology and Food Policy to Combat Iron Deficiency in Developing Countries,* Howarth E. Bouis, August 1994
-

