Growth Without Change:
The Elusiveness of Agricultural and Economic Transformation in Mozambique

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1. Introduction

Mozambique is a unique case study in economic transformation, or lack thereof, even by African standards. Independence (1975) and peace (1992) have come relatively recently to Mozambique. The impacts of colonial heritage, civil war, and grand economic strategies on the country's path and potential are still clearly seen. From the mid-1960s to the early 1990s overall economic development and the transformation of rural and urban areas were effectively stalled by almost continuous conflict, first in the War of Liberation against Portugal and then, after independence, civil war between the FRELIMO Government and the RENAMO rebels. The civil war would claim more than a million lives and displace more than 3 million people, a fifth of the population. In 1992 the Government and the rebels signed a peace agreement, paving the way for elections in 1994. By this time, the government was already adopting a more market-friendly development strategy, in contrast to its initial Marxist economic vision (Saul 1987; Sidaway 1993; Sidaway and Power 1995; Jenkins 2003).

Mozambique has experienced rapid economic growth over the last decade and both agriculture and nonagriculture sectors have [2]grown. There has been relatively fast urbanization in Mozambique, with the percent of urban population tripling between 1980 and 2010 (from 13 percent to 38 percent). The agriculture sector continues to command a high share of employment (76 percent in 2006/2007), but there is little evidence of agricultural transformation with only a small percent of farmers reporting use of improved technologies. Government expenditure in agriculture is below the CAADP target of 10 percent, and averages 5-6 percent of GDP. With significant agricultural potential and, at the time of peace, more than 70 percent of the population in rural areas, agriculture and rural development should have emerged as a central focus for policy attention but it did not. Most recently, the government has emphasized foreign investment as the key to growth, especially in mining and other mega-projects.

While over the past decade rates of economic growth have been high, these megaprojects have had only a minor impact on government revenue, national employment, and poverty reduction (Andersson 2001; Thirtle, Lin, and Piesse 2003; Sonne-Schmidt, Arndt, and Magaua 2009), even as a majority of citizens in both urban and rural areas remain poor. Although poverty has declined from the levels found in the 1990s, current incidence of poverty continues to be quite high with 50 percent of the urban and 57 percent of the rural population living below the poverty line. To accelerate growth and poverty reduction, and overall development for the national economy, Mozambique's growth strategy would from increased investments in agriculture and infrastructure. Agriculture is a vital income source for a majority of the population, contributing more than 25 percent to GDP, 20 percent of

[1] The authors are grateful to Emily Schmidt and Mekamu Kadir for undertaking most of the calculations, maps, and initial analysis of the section on agglomeration indices. They also thank Paulo Covele for additional research assistance and preparation of maps and Margaret McMillan for comments.

[2] Economic growth attributed to agriculture, however, appears to stem from area expansion and valuation of output. In fact, productivity seems to have stagnated.

export earnings, and providing key inputs into the manufacturing sectors, whose agricultural processing sectors contribute a further 7 percent to national GDP.

In this paper we explore how rural-urban transformation, which one would expect to accompany economic development, is proceeding in Mozambique. We view transformation through two lenses: how rural areas are transforming to acquire “urban” characteristics, such as improved services and well-being; and how the overall economy is changing in light of economic growth and urbanization. The macro-economic policies and real exchange rate patterns during the past decade are analyzed briefly in Section 2, followed by a study of the patterns and trends of rural-urban transformation across a range of economic and social dimensions (Section 3). We then try to explain these differences in the context of key policies, development strategies, and expenditures in Mozambique. We examine the consequences of this context for growth and change in agricultural and non-agricultural sectors and for migration and economic diversification (Section 4). In the concluding section (Section 5) we reflect on our findings and advance ideas on how Mozambique’s development strategy can achieve a more productive and pro-poor transformation of both rural and urban areas.

In general we find that Mozambique is becoming increasingly urbanized, but with much more urbanization in the south, especially through the growth of Maputo, the capital. With investments in social sectors like education, some gaps in well-being between rural and urban areas have become smaller. Better roads have improved connectivity. But economic growth has not led to reductions in poverty, agricultural productivity has not budged in decades, and north and south are still largely divided. Consequently, the south is turning to South Africa instead of the north to meet its demands for food and agricultural products. Results from a DCGE model (Thurlow 2009) suggest that efforts to achieve Mozambique’s growth and poverty reduction goals would be greatly strengthened by investing more in agriculture, especially through establishment of new commercial export crops, such as jatropha, which can produce a more pro-poor outcome when compared to other, more capital-intensive crops such as sugarcan, and can offer diversification in rural employment options. The higher growth potential of these export crops relative to that of food crops means that export-led growth will still account for a large share of overall poverty reduction under the CAADP scenario of achieving 10 percent annual growth, despite these sectors’ lower poverty-growth elasticities. There is considerable variation in the importance of different crops in different parts of the country, implying that development strategies should be developed at the sub-national level. Genuine economic transformation is on hold, as the agricultural sector waits for more and higher quality investments in markets and technologies for smallholders; removal of constraints imposed by land and financial markets; a more effective public sector; and emergence of a more dynamic private sector.

2. Macro-economic Policy and Real Exchange Rates

Macro-economic and trade policies are one crucial aspect of development strategy, influencing the relative prices of tradable and non-tradable goods and services. These policies also directly affect prices of tradable agricultural commodities, such as cotton and cashews, and thereby heavily influence agricultural incomes and rural poverty. As shown below, for most of the past two decades, Mozambique’s macro-economic policies, as reflected in the real exchange rate, have not been favorable towards production of tradable goods and services and thereby have tended to hinder long term structural transformation and growth.

The real exchange rate (RER) measures the relative price of tradables to non-tradables and can be defined as: RER = ER * PT / PNT, where ER is the nominal exchange rate measured in units of local currency per international currency, PT is the world price of tradables in a common international currency (typically an index such as the weighted average of producer prices index of trading partners) and PNT is a measure of domestic prices of non-tradables, such as the domestic consumer price index. Over the 2000-2010 period, the nominal exchange rate (meticais/US$) depreciated by an average of 5.1 percent per year, while world prices in dollars (measured against the US Producer Price Index) grew by 4.0 percent per year. Thus, world prices measured in meticais rose by 9.4 percent per year, as compared to a domestic price increase of 10.6 percent, and the real exchange appreciated by an average of 1.1 percent per year (Table 1).[3] In addition, Mozambique's real exchange rate since 1995 has been relatively stable. The real exchange rate index has varied between 93 and 109 (1995 = 100) from 2003 to 2010, as nominal exchange rate depreciations have consistently kept up closely with domestic inflation (Figure 1).

Cross-country regressions by McMillan and Rodrik (2011) suggest that Mozambique's real exchange rate between 1995 and 2005 (measured by directly comparing prices of goods and services cross countries) was overvalued by about 20-40 percent relative to an estimated equilibrium real exchange rate. In other words, according to this analysis, domestic prices of tradables in Mozambique (and incentives for their production) were significantly lower than their equilibrium values.

Table 1: Mozambique Nominal and Real Exchange Rates, 1995 - 2010

	Nominal Exchange Rate	Nominal Exchange Rate	World Price Index	World Price Index (Mt)	CPI	Real Exchange Rate
	(Mts/$)	(1995=100)	(1995=100)	(1995=100)	(1995=100)	(1995=100)
1995-1999	11.3	125.2	80.0	126.4	147.2	87.3
2000-2004	21.2	234.9	86.8	257.2	241.5	107.5
2005-2010	26.7	295.6	110.3	413.1	418.4	98.9
2010	34.0	376.3	117.4	557.0	514.5	108.6
Trend 1995-2010	8.2%	8.2%	3.0%	11.5%	10.6%	0.9%
Trend 2000-2010	5.1%	5.1%	4.0%	9.4%	10.6%	-1.1%

Source: IMF International Financial Statistics and authors' calculations.

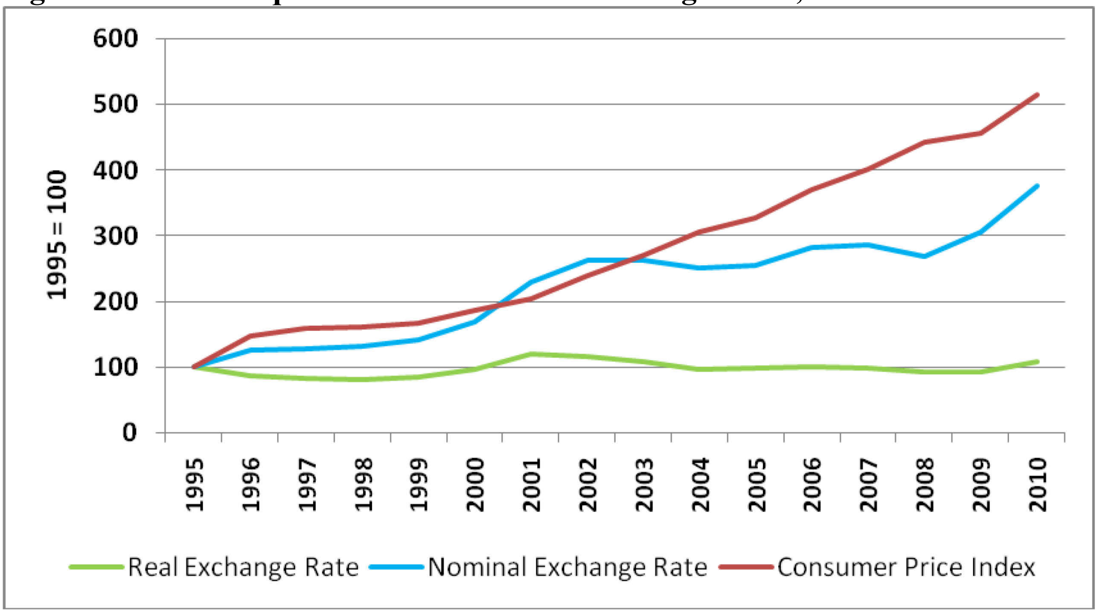
[3] Mozambique has a floating exchange rate system, but maintains restrictions on foreign exchange flows, including requiring authorization for purchases of foreign exchange in excess of $5,000 for some transactions (IMF Country Report No. 09/227, July 2009). http://www.imf.org/external/pubs/ft/scr/2009/cr09227.pdf
The central bank also varies the amount of foreign exchange available in the domestic market to meet macro-economic objectives and has adjusted levels of sales of foreign exchange in the domestic market as a means of influencing domestic money supply and inflation (as in mid-2010, IMF 2011).

Table 2: Mozambique Purchasing Power Parity Real Exchange Rates and Undervaluation, 1995 - 2010

	Nominal Exchange Rate (Mts/$)	Real Exchange Rate US Dollar (1995=100)	Real Exchange Rate PPP Index (1995=100)	Equilibrium Real Exchange Rate (1995=100)	Undervaluation (percent)
1995-1999	11.3	87.3	88.8	129.5	-37.9%
2000-2004	21.2	107.5	112.5	140.7	-22.8%
2005-2010	26.7	98.9	113.8	122.7	-7.5%
2010	34.0	108.6	---	---	---
Trend 1995-2010	8.2%	0.9%	2.3%	-0.5%	---
Trend 2000-2010	5.1%	-1.1%	0.1%	0.6%	---

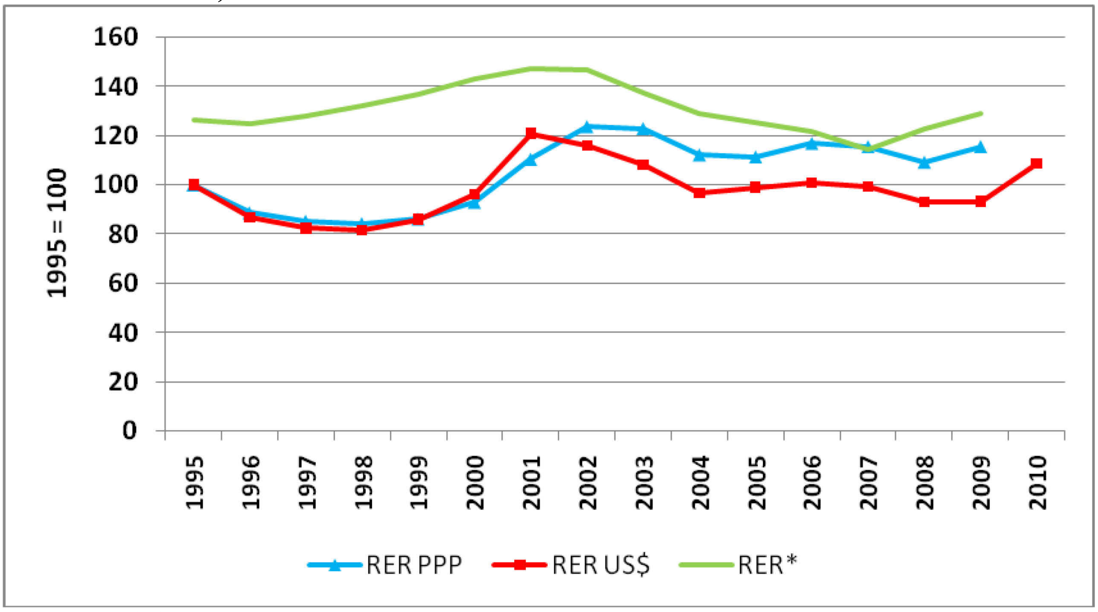
Source: Rodrik (2008).
Note: Real Exchange Rate PPP Index, Equilibrium Exchange Rate, and Undervaluation data are up to 2009.

Figure 1: Mozambique Nominal and Real Exchange Rates, 1995 - 2010



Source: IMF International Financial Statistics and authors' calculations.

Figure 2: Mozambique Purchasing Power Parity Real Exchange Rates and Undervaluation, 1995 - 2010



Source: Rodrik (2008).

3. Patterns and trends in rural-urban transformation in Mozambique

In this section we describe recent demographic, economic, and social patterns of rural-urban transformation in Mozambique. In reality, there is no clear demarcation between rural and urban. Definitions vary, but usually include criteria of population size and the presence or absence of certain services.[4] These definitions still include many spaces that one might not think of as "urban" because they do not look like a city. This is typical for developing countries, as most small urban centers there tend to exhibit a mix of what one would perceive as urban and rural (Satterthwaite and Tacoli 2003). For instance, rural dwellers will earn income from manufacturing or services, not just farming; and urban traders or processors will be intimately connected with the food and agricultural system. This is the case in Mozambique. Municipalities are a varied landscape of cane huts and cement structures. The economy is composed of a rich mosaic of formal and informal economic activities in both urban and rural areas, where household incomes often depend on both farm and nonfarm activities.

Fortunately, a strict definition of what is urban and what is rural is not necessary for this paper. It is, however, important to recognize that transformation occurs along a complex set of spatial, sectoral, and demographic vectors and that statistics presented for "urban" and

[4] In fact, in Mozambique, different state agencies use different definitions. The Ministry of State Planning MAE) defines urban areas based on their levels of socio-economic and cultural development. The Ministry for the Coordination of Environmental Action (MICOA) defines an urban area based on the proportion of land devoted to "urban" usage. And the National Institute of Statistics (INE) calculates urbanization based on urban enumerations. These areas had previously been identified as urban, and the boundaries of these units were kept the same in the 1997 and 2007 census. Consequently, even if a rural area had become predominantly "urban" by 2007, the area remained classified as rural if that had been its designation in 1997. The definitions are complicated further since an urban or rural area, as defined by the census, may contain a locality defined differently. Conversely, the locality, such as a district, can contain both urban and rural areas.

"rural" do not represent clearly divided regions. Rather, the terms reflect simple judgments of divisions made at some point in the rural-urban continuum.

3.1. Urbanization

In terms of demographics, urbanization in Mozambique has been relatively quick, with increases due to both natural increase and rural in-migration. UN estimates suggest that the urban population share rose from about 2 percent in 1950 to 13 percent in 1980 and to 40 percent in 2010 (Table 3). By 2025 Mozambique is likely to cross a historic threshold, joining Latin America in having a majority of urban residents (Montgomery 2008). On the whole, Mozambique is urbanizing somewhat faster than the average for Southern Africa but more slowly than the average for Eastern Africa (Annex Figure A.1).

Currently, the annual rate of increase in the urban population is about 3 to 4 percent, a substantial decline from the 10 percent per year experienced in the 1970s, when rural dwellers were fleeing conflict. The rural population is now only growing at about 1 percent per year, and will actually begin to grow smaller in another 15 to 20 years (UN 2010). About 10 percent (about 2.3 million people) of the country's population lives in the Maputo-Matola area, the capital region located in the southernmost part of the country.

If urbanization in Mozambique proceeds as in other sub-Saharan African nations, most growth will occur because of the transformation and reclassification of formerly rural settlements on the peripheries of larger urban areas and because of natural increase within cities, rather than migration (Kessides 2005; Crush, Frayne, and Grant 2006). Circular and seasonal migration tend to be the most important kinds of migration, and international migration, especially of rural dwellers to the South Africa mines, is particularly important in Mozambique.

Urbanization has not necessarily generated significant positive impacts. Some urban areas have developed more than others, especially Maputo and cities in the southern region, and infrastructure development, especially housing and road networks, has not kept up. The richer, more urban southern region is also strengthening its traditional economic ties with South Africa, which may lessen demand for food and agricultural products from the more agricultural north. As we will see, the latest poverty statistics suggest that urban areas in general have not been engines of employment growth, and urban poverty remains high. Moreover, even if the urban economies could create more jobs, the majority of Mozambique's poor will still be left in rural areas for a long time to come.

Table 3. Rural and urban populations: Estimates and projections, 1950-2050

Year	Total population (in thousands)	Rural population (in thousands)	% Rural	Urban population (in thousands)	% Urban
1950	6 442	6 289	98	153	2
1960	7 646	7 366	96	280	4
1970	9 449	8 903	94	546	6
1980	12 138	10 547	87	1 591	13
1990	13 543	10 686	79	2 857	21
2000	18 249	12 649	69	5 601	31
2010	23 406	14 410	62	8 996	38
2020	*28 545*	*15 338*	*54*	*13 208*	*46*
2030	*33 894*	*15 695*	*46*	*18 199*	*54*
2040	*39 185*	*15 379*	*39*	*23 805*	*61*
2050	*44 148*	*14 399*	*33*	*29 750*	*67*

Source: UN 2010.

3.2. Agglomeration indices

Another way to look at "urban-ness" is through an agglomeration index (Uchida and Nelson 2010). This index attempts to provide a sensible measure of "urban-ness" that can vary across time and space and is comparable across countries. The index is based on three factors: population density, the population of a nearby "large" urban center, and travel time to that large urban center from outlying areas.[5] According to this measure, the percentage of the Mozambican population that was urbanized rose from 15 percent to 21 percent (6 percentage points) from 1997 to 2007. This compares to the UN figure of about 26 percent urban in 1995 and 35 percent in 2005 (UN 2010)[6]. This reflects the agglomeration index's focus on calculating the (generally larger) area of influence of a "large" urban center, rather than reliance on an administrative definition.

As shown in Table 4, some provinces, in the south and center of the country, particularly Gaza and Sofala, became significantly more urbanized over the period. Gaza went from 16 percent urban in 1997 to 30 percent in 2007, and Sofala from 19 percent to 36 percent. The least urban provinces are Tete (11 percent), Cabo Delgado (9 percent), and Inhambane and Zambezia (10 percent).[7] Consequently, in the northern region, 13 percent of the population lives in an urbanized area, whereas almost 3 times that figure – 38 percent– of the population in the southern region is urban. In fact, of the provinces in the southern region, with the exception of Inhambane, more than one of every four people lives in an urbanized area. This distinction matters. As shown in Table A.1, by regional standards, Mozambique as a whole (at 21.2 percent) is more urbanized than Malawi (17.6 percent) and Swaziland (19 percent), but far less urbanized than Tanzania (26 percent), Zambia (30.5 percent), Zimbabwe (33.2 percent), and South Africa (49.4 percent). Yet *southern* Mozambique is second only to South Africa in terms of urbanization levels (Table A.1).

Travel Times. The travel time to cities of at least 50,000 people is a particularly interesting component of this index. It not only indicates urbanization but also reveals connectivity between rural and urban areas. Reducing travel time improves market connections, which should improve market efficiency and lead to greater economic growth and improvements in welfare. Figure 3 shows the current road and rail network in Mozambique. The only major progress on this front in decades is the improvement in road quality (and perhaps in rail quality but this information is not available). Total lengths of the road and rail networks have remained largely unchanged practically since independence. Nevertheless, improvement in road quality in recent years has helped to reduce travel time to larger cities for much of the population.

Comparison of Figures 4a and 4b, which map the agglomeration index, shows a significant increase in accessibility between 1997 and 2007. In 1997, approximately 23 percent of the population was within 3 hours travel time to a city of at least 50,000 people, yet this increased to 40 percent by 2007 (calculations not shown). Part of this improvement is due to the fact that Mozambique also now has more cities of over 50,000. In 1997

[5] Locations are categorized as urban if the area has a population density greater than 150 people per km^2 and is located within one hour travel time of a city of at least 50,000 people.

[6] National census data from the National Statistics Institute (INE) reported that the population was 28.5 percent urban in 1997 and 30.3 percent urban in 2007 (INE 1999; INE 2008a). Such a small increase is unlikely, and is probably a result of the fact that the census kept the classifications of census areas the same (as urban or rural) for both the 1997 and the 2007 census.

[7] The rather odd finding that Maputo City is not 100 percent urban is because there a few areas that fall within the Maputo City administrative unit that are further than one hour from the city center. This is likely due to water barriers (Maputo Bay) or other topographical anomalies.

Mozambique had 19 cities of over 50,000 inhabitants and 33 cities of over 20,000. In 2007 there were four more cities of more than 50,000 people (23 total) and 19 more cities of more than 20,000 (52 total). Figure 5 shows the growth and appearance of new cities between 1997 and 2007, with the new cities in red. This growth in small and medium cities is occurring along major transportation routes. These transport corridors link the cities, which then benefit from economies of scale and greater variety of goods and services.

There are significant regional differences in connectivity. Additional analysis (not shown) found that approximately 70 percent of the population in the south can access a major city within 3 hours. In contrast, although the north contains more than two-thirds of the country's total population, only 26 percent of inhabitants can get to a city of at least 50,000 people within 3 hours. This is partly because the population is highly dispersed over a large area, and partly because major roads are designed to link ports such as Nacala to inland populations both in Mozambique and in Mozambique's landlocked neighbors. Fifty to sixty percent of the inhabitants in Tete and Niassa are still between 5 and 10 hours away from a major city; and 12-15 percent are still more than 10 hours away from a city of 50,000 or more. However, the situation in the north is improving. For example, between 1997 and 2007 the percentage of people who could connect to a major city within 3 hours more than doubled from 13 percent to 28 percent.[8]

Table 4. Agglomeration index: Levels of urbanization, by province and region

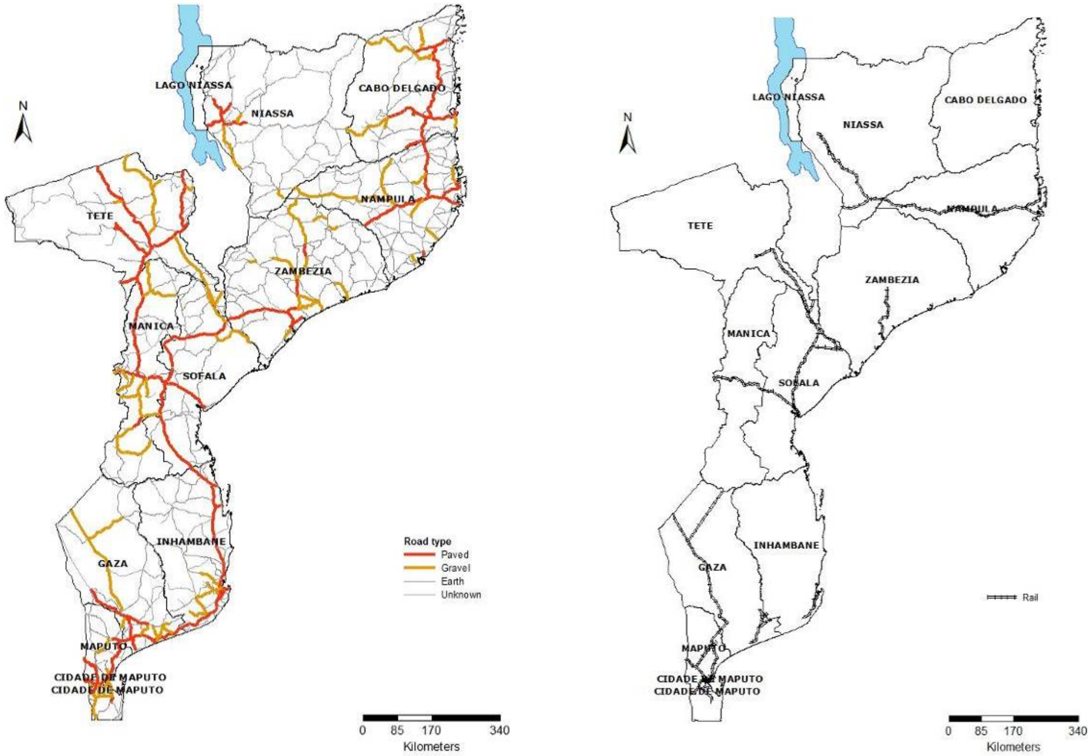
	1997		**2007**	
Province Name	**Total Population (Thousands)**	**Percentage Urban**	**Total Population (Thousands)**	**Percentage Urban**
Southern Region	**5,355**	**27.8**	**6.579**	**38.2**
Maputo City	987	82.9	1,120	98.1
Gaza	1,084	16.2	1,251	29.8
Inhambane	1,150	5.7	1,302	9.6
Maputo Province	820	21.9	1,233	25.8
Sofala	1,314	19.2	1,672	35.6
Northern Region	**10,178**	**8.4**	**14,045**	**13.2**
Cabo Delgado	1,311	6.9	1,632	8.6
Manica	994	19.5	1,438	21.1
Nampula	3,021	5.3	4,049	14.3
Niassa	769	15.2	1,227	18.3
Tete	1,157	7.2	1,802	11.1
Zambezia	2,926	7.2	3,897	10.4
Mozambique	**15,534**	**15.1**	**20,624**	**21.2**

Source: Own calculations.

[8] Although urbanization is taking place in the Beira area, the links to other nearby urban centers, such as to Chimoio, the next largest city, are still lacking.

Figure 3. Road and Rail Networks in Mozambique, 2010

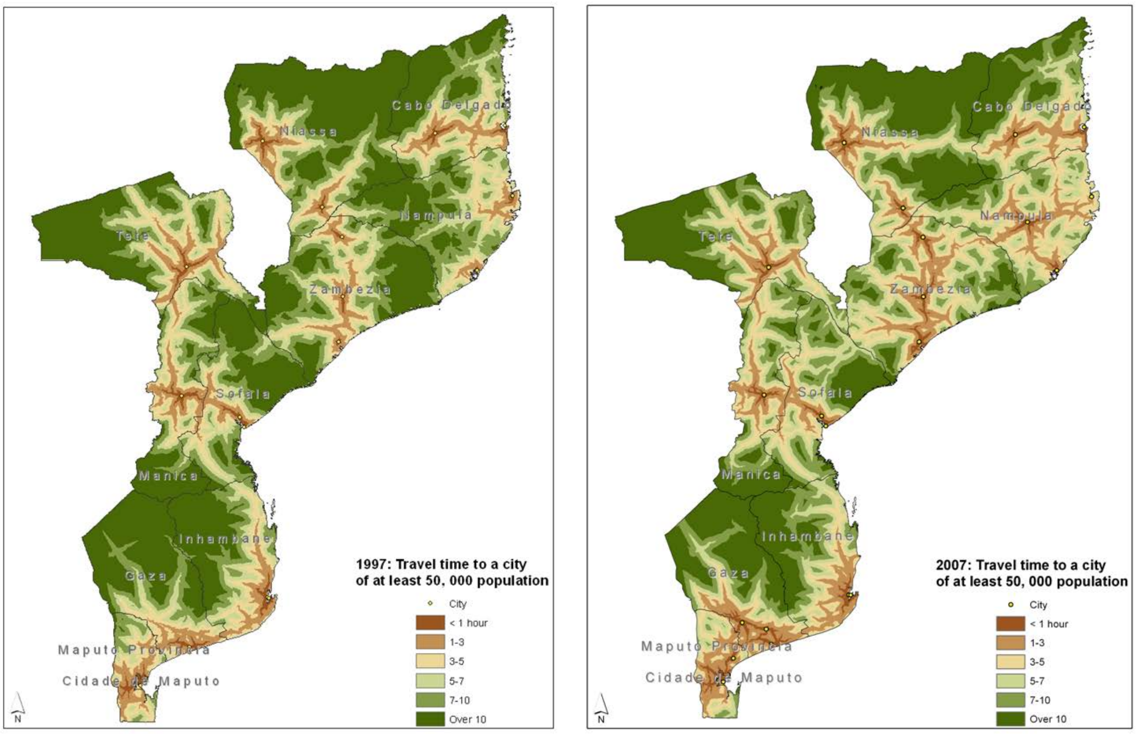
3a. Road **3b. Rail**



Source: Adapted from Administracão Nacional de Estradas, Government of Mozambique, 2011.

Figure 4. Travel time to cities of at least 50,000 inhabitants

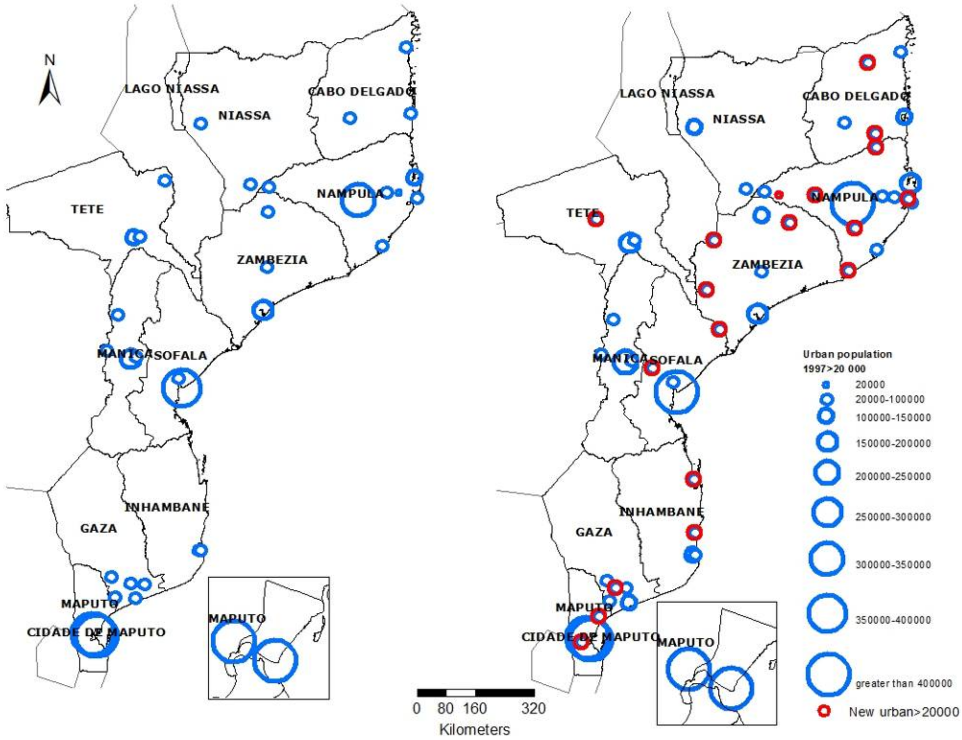
4a. 1997 **4b. 2007**



Source: Own calculations.

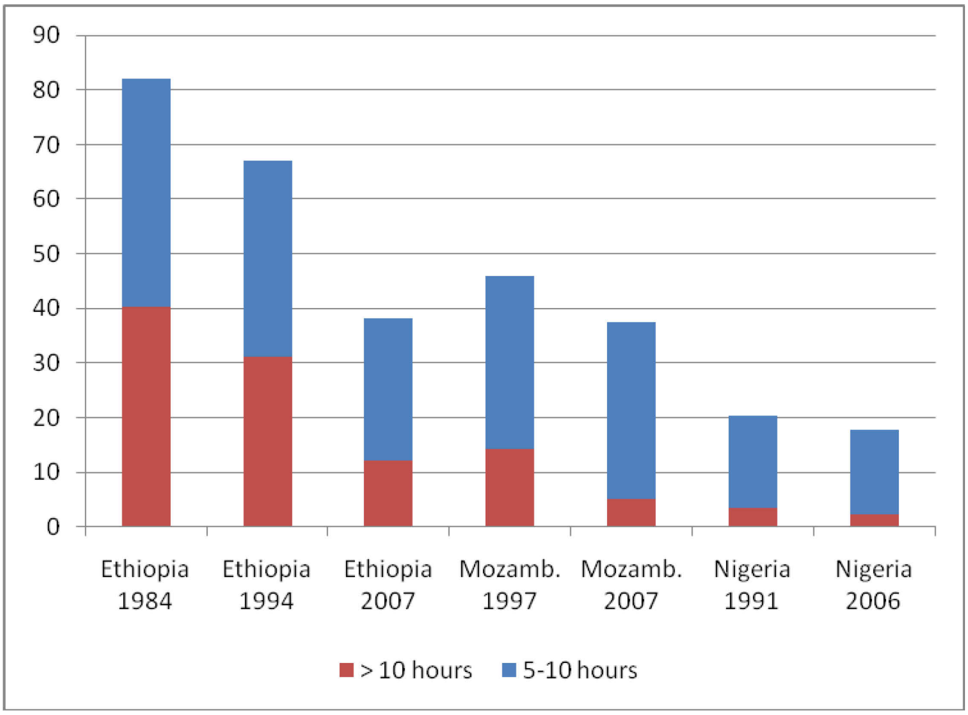
Figure 5. Changes: Cities larger than 20,000: 1997 and 2007

5a. 1997 **5b. 2007**



Source: Own calculations.

Figure 6. Percentage of Population by Travel Time to Agglomeration of 50 Thousand People or More



Source: Schmidt (2011).

Table 5: Percentage of Population by Travel Time to Agglomeration of 50 Thousand People or More

	<1 Hour	1-3 Hours	3-5 Hours	5-10 Hours	> 10 Hours
Ethiopia					
1984	6.74	1.96	9.22	41.77	40.31
1994	8.38	6.44	18.19	35.96	31.03
2007	12.48	23.56	25.73	26.03	12.20
Malawi					
2008	13.30	69.20	15.90	1.60	0.00
Mozambique					
1997	12.77	20.07	21.17	31.72	14.26
2007	16.77	23.22	22.42	32.55	5.03
Nigeria					
1991	18.51	41.15	20.09	16.68	3.57
2006	19.81	42.33	20.01	15.5	2.35
Uganda					
2002	18.73	46.42	21.63	12.72	0.5
2010	23.15	48.39	21.63	6.29	0.54

Source: Schmidt (2011).

3.3. Trends in sectoral employment

It is difficult to discuss employment in Mozambique with great confidence. Mozambique does not have reliable labor statistics, and much employment is in the informal sector and agriculture. The last known labor survey (IFTRAB) was conducted in 2005 (INE 2006). There is also the problem that individuals may engage in multiple or seasonal occupations. We can be certain, however, that the agricultural sector has been the main employer of the Mozambican population over the last two decades (Table 6). A key characteristic of the typical transformation process is the change in the share of employees in the various key sectors of the economy, such as agriculture, industry, and services. But by this measure, any transformation has been slow, despite urbanization.

Table 6. Employment in key sectors over time (percentage)

	1990-95	1996-2000	2001-05	2006-07
Agriculture	81.5	80.8	79.9	76.1
Mining	0.9	0.6	0.5	0.6
Manufacture	3.8	3.4	3.2	3.2
Energy	0.1	0.1	0.2	0.2
Construction	1.4	2.0	2.2	2.5
Commerce	4.2	6.5	7.7	7.6
Transport, communication, and storage	1.2	0.5	0.9	1.1
Others	6.8	6.1	5.5	7.4

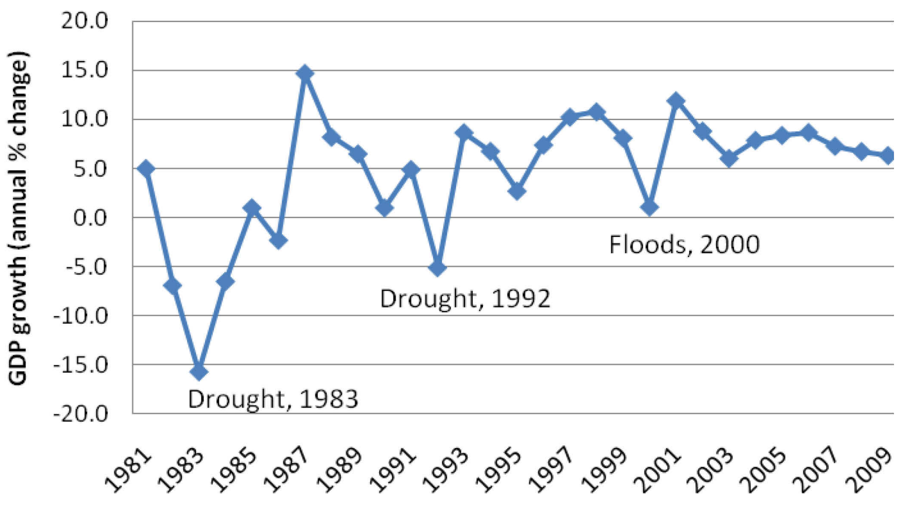
Source: Based on MPF/UEM/IFPRI 1998; INE 1999; MPF/IFPRI/PU 2004; INE 2006; Brück and van den Broeck 2006; INE 2008a.

Table 6 shows that in the past 15 years, the proportions of employment in the various sectors have changed very little, despite economic growth. Only employment in commerce changed substantially, practically doubling from about four percent in 1990-95 to almost eight percent in 2006-07. Comparison of these figures with levels of urbanization means that even some urban dwellers count agriculture as their primary occupation. In 1990-95 about 75 percent of the population lived in rural areas, whereas more than 80 percent of the population counted agriculture as their main sector of employment. The IFTRAB survey, undertaken in 2004-2005, found an even stronger disconnect between what is termed "rural" and occupational categories. That survey indicated that 86 percent of the economically active population worked in agriculture, whereas only 66 percent of the population lived in rural areas. These findings are consistent with the observation that many of the areas classified as urban in Mozambique are still largely rural and agricultural in nature. The differentiation between north and south also emerges here: According to this survey, in 2004-05 more than 90 percent of the economically active population was employed in agriculture in the north, whereas in the more urbanized and diversified south agriculture accounted for about 72 percent of employment (INE 2006).

3.4. Trends in growth and sectoral contributions

The economy of Mozambique is tightly connected to the well-being of agriculture. And, given the fact that agriculture in Mozambique is almost entirely rainfed, the well-being of agriculture is tightly connected to the weather. Between 1993 and 2008, Mozambique reported an average annual GDP growth of 8.2 percent. This was one of the fastest economic growth rates in Africa, although growth in absolute terms was not comparatively as high because the country had a very low starting point (INE 2010). Mostly because of droughts, rains, and floods, there is significant variation over time (Figure 7). For example, the country was severely hit by droughts in 1983 and 1992, resulting in declines in growth of 15.5 percent and 5 percent respectively. The floods of 2000 were responsible for the dip in GDP growth observed that year.

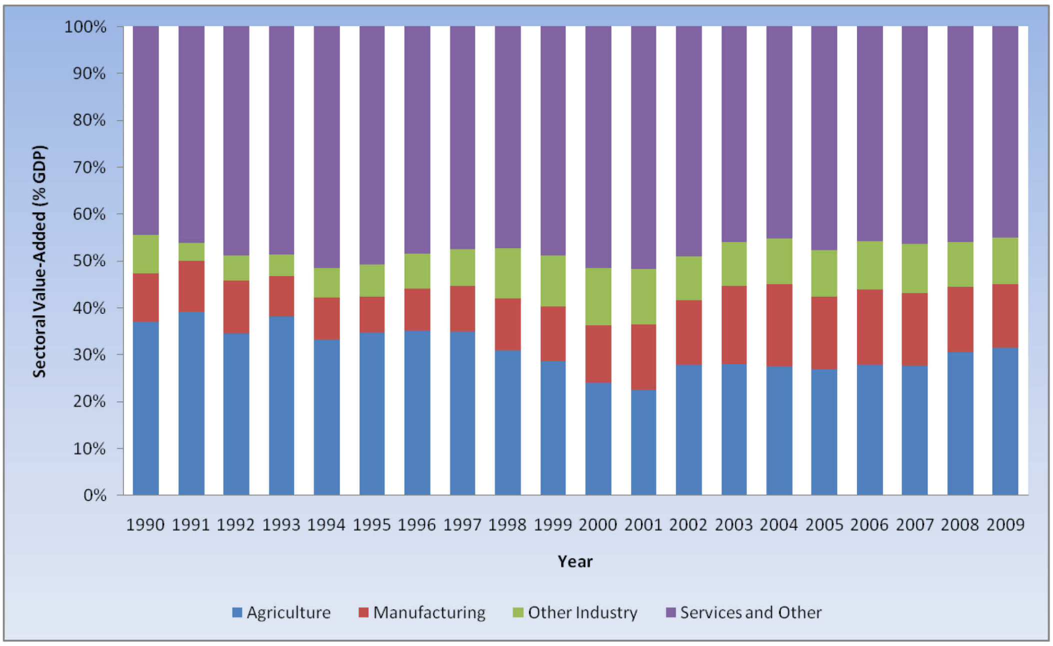
Figure 7. Annual percent growth in GDP 1981-2009.



Source: World Bank 2011a.

Typically in economic transformation, per capita GDP will increase and both the proportion of the population engaged in agriculture and the economic contribution of agriculture will decline. In Mozambique, with peace, GDP per capita rose rather rapidly from about USD200 per year in the early to mid-1990s to just over USD400 per year today, some 20 years later. The relative contribution of agriculture to GDP has varied over time (again linked to the weather) but experienced only a slow decrease in that time period, from about 37 percent in 1990 to the low 30s in 2008 and 2009. During most of the 2000s, the contribution was in the mid- to upper 20s (Figure 8). The stability of this structure is somewhat surprising, given such strong overall growth during the period and the indications from other sources (e.g., the agricultural household survey) that agricultural productivity is very low.

Figure 8. Percentage in value-added over time by economic sector



Source: World Bank 2011a.

As for the non-agricultural sectors the largest expansions have been in industry and manufacturing, driven by various megaprojects (Sonne-Schmidt, Arndt, and Magaua 2009). Overall, industry (including manufacturing) rose from about 18 percent in 1990 to about 23 percent in 2009. The percentage contribution had even been somewhat higher earlier in the 2000s.

The transformation from agriculture to other sectors is proceeding only slowly in Mozambique, and the non-agricultural sectors do not yet hold much promise for absorbing significant amounts of labor. Growth in the industrial sector is due largely to megaprojects, which often get tax breaks (thus not providing government further revenue for investment), do not appear to generate significant local employment, and may repatriate profits outside the country. Manufacturing may require skills that the Mozambican labor force does not yet have; and services are likely to be generated by government (with limited prospects for growth), technologies like communications with investment in capital rather than labor, or by a low-paid service sector (taxi drivers, housekeepers).

Results from a DCGE model from CAADP country studies indicate that if Mozambique can reasonably improve crop yields from their current levels and achieve the target set for the non-crop agricultural sub-sector growth, then the CAADP target of 6 percent agricultural growth in 2006-2015 is achievable. Agricultural growth at 6.6 percent per year will lead to an increase in the overall GDP growth from 6.3 to 7.0 percent per year. With such high growth rates poverty at the national level can be reduced to 32.6 percent by 2015 with additional 4.3 percentage point reduction from the level without additional agricultural growth. This means that the higher agricultural growth under the CAADP scenario would help Mozambique achieve MDG1 and would lift an additional 0.98 million people above the poverty line by 2015.

Table 7. GDP growth rates in the Baseline and CAADP scenarios

	Average annual growth rate (%)	
	Baseline scenario 2006-15	CAADP scenario 2006-15
Total GDP	6.3	7.0
Agricultural sub-sectors	4.2	6.6
Cereals	3.5	4.7
Maize	3.6	5.0
Rice	4.1	5.3
Other cereals	2.5	3.0
Root crops	4.7	5.2
Cassava	4.7	5.2
Other roots	4.3	4.7
Pulses and nuts	3.6	4.3
Pulses & oils	3.9	4.5
Groundnuts	4.2	5.3
Cashew nuts	1.5	1.0
Horticulture	4.3	5.7
Vegetables	4.3	5.3
Fruits	4.3	5.2
Export-oriented crops	4.7	6.1
Tobacco	1.5	3.5
Cotton	8.3	8.3
Sugarcane	7.5	7.5
Tea	4.0	5.4
Other crops	2.0	5.4
New crops	0.0	765.0
Bananas	0.0	577.5
Sugarcane (ethanol)	0.0	717.4
Jatropha (biodiesel)	0.0	837.9
Livestock	5.2	6.0
Cattle	6.1	6.7
Poultry	4.9	5.8
Other livestock	5.0	5.7
Fisheries	2.0	3.6
Forestry	5.3	6.0
Manufacturing	5.9	7.2
Other industry	10.0	8.5
Services	6.5	6.9

Source: 2003 Mozambique social accounting matrix and Mozambique DCGE model, excerpted from Thurlow (2009).

3.5. Rural-urban migration

Patterns of both internal and international migration still show the imprint of civil war, historical links to employment in South Africa (especially mining), and continued low levels of agricultural productivity and high levels of rural poverty. During the armed conflict, a large number of people moved to cities in search of a safer place to live. While the migration that occurred after the war is more complex, there is evidence of three different migration patterns: rural-urban, rural-rural, and international (Dávila et al. 2008; Raimundo 2009). Rural-to-urban migration is the most predominant, with the south, with its large metropolis of Maputo-Matola, being a prime destination. In the southern provinces, 33 percent of the total population is originally from central or northern provinces. In contrast just 15 percent of those in northern provinces are from elsewhere, while only about 10 percent of those in the central provinces are from elsewhere (Raimundo 2009).

A survey conducted in 2008 gives insight into what has happened in the southern provinces (Galego and Mendola 2010). The authors looked at individual-level characteristics of migrant and non-migrant household members. They found that 12 percent of their sample individuals were working away from home, while six percent were return migrants, mostly from South Africa. Return migrants were predominantly men of working age, usually married and more educated than non-migrants. The average duration of migration away from home was a bit less than a year, and the reason for return had to do mainly with family and with the end of a job or vacation. But 58 percent of returnees intended to leave again in the future. Migrants returned mostly once per year, and 45 percent of them sent remittances home, with the money spent on primary needs such as food, clothing, and housing.

Although it might not be the preferred form of employment for many, seeking employment in South Africa is still an option due to the limited absorptive capacity of Mozambique's formal economy (de Vletter 2007; Raimundo 2009) and the agricultural sector. Recently, however, labor migration out of rural areas has been constrained by the reduction of recruitment of workers to the mines by the South African government. Increased antagonism in South Africa toward foreigners has prompted the Mozambican government to repatriate more than 30,000 of its nationals (Kapp 2008). The integration of these workers in the Mozambican economy has been difficult since some of them have not worked in any other sector but mining for their whole adult life.

3.6. Well-being in rural and urban areas: Poverty, nutrition, and education

Trends and differences in measures of well-being, which reflect income opportunities and access to services and programs, are another indication of rural-urban transformation. Since the notion of poverty is multidimensional, we look at monetary as well as other indicators of well-being, such as nutritional status and education.

Table 8 shows that poverty, in terms of consumption expenditure, declined substantially between 1996-97 and 2002-03: by about 15 points nationally, 16 points in rural areas, and 11 points in urban areas. However, between 2002-03 and 2008-09 poverty stayed about the same, with a small rise in rural poverty and a small decrease in urban poverty (though differences were not statistically significant). Regionally, the northern provinces are less poor than the central and southern provinces, although poverty in Maputo City is much lower than elsewhere in the country. These provincial differences, and the changes since 2002-03, are intriguing but point to improvements in agricultural services and productivity in some provinces (like Tete) and the negative impact of weather shocks, plant disease, and turmoil in neighboring countries (Zimbabwe) that affected trade in others (Sofala, Zambézia).

There has been energetic debate about the accuracy of these figures. It may be, for instance, that the 2002-03 figures should have been calculated higher. But if the figures are broadly correct, they suggest that Mozambique's growth path has not been pro-poor over the last decade. Perhaps economic growth is heavily driven by foreign investments with little impact on poverty. Lack of improvements in agricultural productivity has meant little increase in rural incomes, and important coconut and cassava production in central provinces was hit hard by disease. Global price rises for food also occurred in this period, and with relatively free trade that price instability was transferred to Mozambique. Because the poor spend large shares of their incomes on food, this price instability disproportionately affected them. The high cost of living in urban areas – including recent food inflation – may partially explain why urban poverty remains high, even in the southern provinces (Tvedten, Paulo, and Rosário 2009).

Malnutrition. Despite robust economic growth, child malnutrition remains high (Table 8, Figures A.2 and A.3). In 2008-09, almost half of Mozambican children under five were chronically malnourished (46.4 percent); about 7 percent of them suffered from acute malnutrition. As shown in Table 8 and Figure A.2, rural children were more likely to be stunted than urban ones, although urban children were slightly more likely to be wasted than rural ones (difference was not statistically significant).[9] Those in the north were much more likely to be stunted than those in the south. Almost 6 of every 10 rural children in the north suffered from chronic malnutrition (Figure A.2).

Indicators of malnutrition are not necessarily consistent with the patterns of poverty (Table 8). In 2008, monetary poverty tended to be highest in the central provinces, somewhat lower in the south, and then much lower in the north (59.7 percent, 56.9 percent and 46.5 percent, respectively). However, chronic malnutrition is *highest* in the north, and much lower in the south, with the center in the middle. Figures in the north range from 45 percent in urban areas to 57 percent in rural ones, 43 percent (urban) and 50 percent (rural) in the center, and 23 percent (urban) and 33 percent (rural) in the south. The contrast with the poverty results is not entirely surprising as the link between malnutrition and income is tenuous. Yet chronic malnutrition represents the cumulative effects of deprivation, and so such a difference in magnitude and ordering is curious. This likely points to the influence of other factors that may differ across the regions, such as maternal education, feeding practices, and availability of health care.

Figure A.3 compares results from surveys of malnutrition across time. The surveys are not directly comparable, as survey methods and samples differed, but they show similar levels of malnutrition and suggest a slow secular decline in stunting.

Education. Mozambique has made significant progress in increasing the share of children of school age who are studying (Figure 9). The net enrolment rates (NER) of children of primary school age (6-13 years old) in urban areas of north, center, and south range from 74 to 91 percent, with the highest figure in the south. The figures for rural areas are lower, but are still relatively high, ranging from 68 percent in the north to 86 percent in the south. NERs of youth of secondary school age (14-18 years old) are much lower, with a substantial difference between urban and rural areas. Importantly, access to schooling appears to have increased most where it was lowest in the period between the most recent poverty surveys, reducing regional inequalities (MPD/DNEAP 2010).

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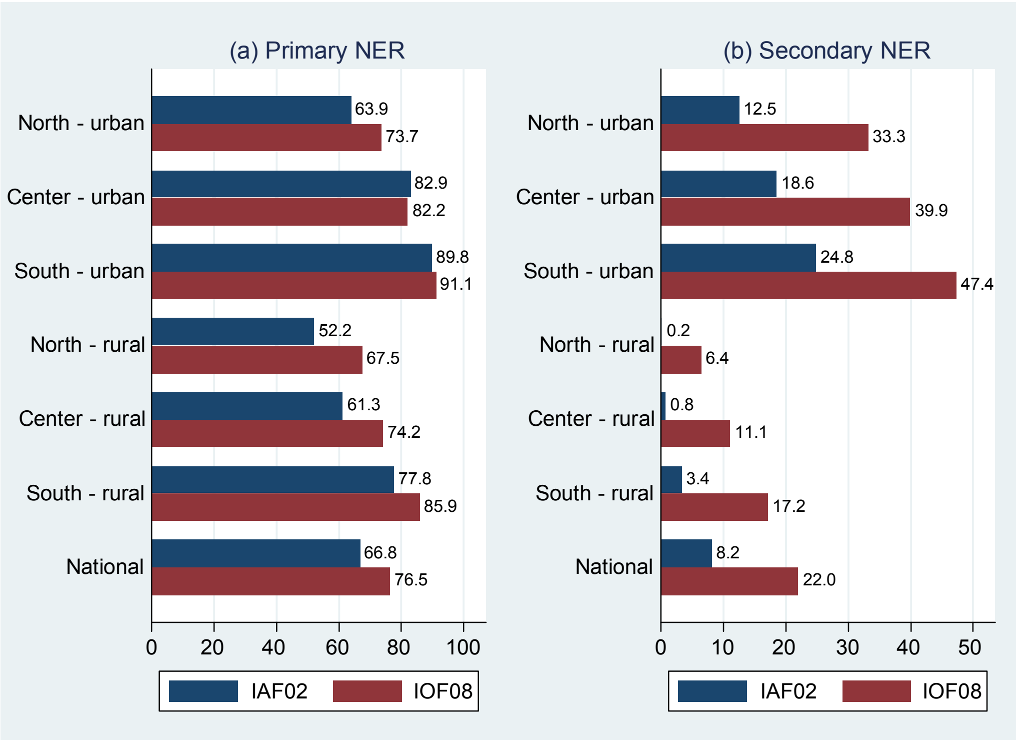
[9] Stunting, or chronic malnutrition, refers to low height- or length-to-age and reflects the cumulative effects of environmental shocks on the child. As such, it is a good measure of overall deprivation over time. Wasting, or acute malnutrition, refers to low weight-to-height (or length). This measure tends to reflect current dietary and health conditions.

Table 8. Poverty and malnutrition, by survey year and location

Description/ Survey year	Poverty headcount 1996-97	Poverty headcount 2002-03	Poverty headcount 2008-09	Stunting 2008-09
National	69.4	54.1	54.7	46.4
Urban	62.0	51.5	49.6	36.4
Rural	71.3	55.3	56.9	49.9
North	**66.3**	**55.3**	**46.5**	**45-57 (u-r)**
Niassa	70.6	52.1	31.9	
Cabo Delgado	57.4	63.2	37.4	
Nampula	68.9	52.6	54.7	
Zambezia	68.1	44.6	70.5	
Center	**73.8**	**45.5**	**59.7**	**43-50 (u-r)**
Tete	82.3	59.8	42.0	
Manica	62.6	43.6	55.1	
Sofala	87.9	36.1	58.0	
South	**65.8**	**66.5**	**56.9**	**23-33 (u-r)**
Inhambane	82.6	80.7	57.9	
Gaza	64.6	60.1	62.5	
Maputo Province	65.6	69.3	67.5	
Maputo City	47.8	53.6	36.2	

Source: MPD/DNEAP 2010. Note: Exact figures for stunting were not available at the provincial level. Figures are for urban (u) and rural (r) areas in each region.

Figure 9. Net enrolment rates (NER), primary and secondary schooling, in rural and urban areas, by region, 2002-03 and 2008-09



Source: MPD/DNEAP 2010.

Note: IAF02 and IOF08 are the household poverty assessments carried out in 2002-03 and 2008-09, respectively.

4. Explaining rural-urban transformation in Mozambique

Above we described rural-urban transformation largely through one of our lenses, namely how rural areas are changing or becoming more akin to urban areas. We reviewed urbanization patterns, sectoral growth and employment, trends in migration, and different aspects of welfare in both rural and urban areas. The main findings of that analysis are threefold. First, Mozambique is transforming relatively slowly. The vast majority of the workforce is still in agriculture, and a majority of the population is still rural. Second, there is a substantial north-south division. The south is much more urbanized and "connected" than the north. It also has a more educated population with lower malnutrition. Surprisingly, however, poverty remains quite high even in the south, perhaps related to the high cost of living. Third, although there was substantial poverty reduction in the 1990s, this appears to have come to a halt from between 2002 and 2008. In this section we try to explain these three facts by examining transformation of agriculture and the larger economy, particularly in light of development strategies and policies, public expenditures, and migration and economic diversification.

4.1. Agricultural development

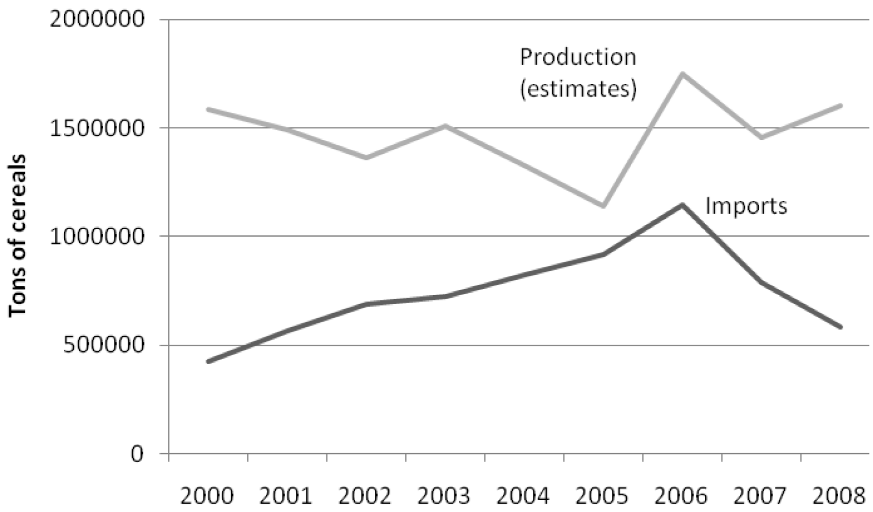
Mozambique is a large country (796,000 square kilometers) with an abundance of land and water, excellent coastal access, and fertile agroecological zones that should allow it to produce a variety of crops and livestock (de Marrule 1998; Green et al. 2006; Brück and Schindler 2009). In fact, central and northern regions are particularly apt for crop production, and the south for livestock. Still only about 10 percent of its 36 million potentially arable hectares are cultivated (Figure A.4), and agricultural productivity remains stuck at levels of the 1960s (Mosca 2011).

Table A.2 shows food production trends in Mozambique from 2002 to 2008. The tables uses the most reliable data for agriculture in Mozambique, the agricultural household survey, or TIA, that has been conducted almost every year since 2002. These data show that production of almost all major food crops has not kept pace with population growth (maize, millet, cowpea, and cassava) or has even declined (rice, sorghum, groundnuts). On a per capita basis, then, most food production has shown negative growth. Figure 10 shows FAO estimates of cereal production and import trends in Mozambique (FAO 2011). Domestic production has been varied, reflecting the vagaries of weather, but with no real signs of an upward trend.

In per capita terms cereal production has actually declined in recent years. Consequently, the share of imported cereals to total cereals has risen almost continuously in Mozambique, reaching very high levels in the mid-2000s. Imports have declined somewhat in recent years. Most imported cereals are consumed in the south, particularly in Maputo City. Although Maputo does get not insignificant amounts of cereals and beans from the center and north provinces, domestic production is clearly not enough to meet southern demand. Trends in root crop production (e.g., cassava), which are also a major source of calories in Mozambique, are somewhat more favorable than cereal production (Table A.3). The high dependence on cereal imports leaves consumers in rural and urban areas vulnerable to fluctuations in international prices. Weakness in market infrastructure that could connect urban demand in the south with agricultural areas in the center and north, and development of good road networks between the south and South Africa, means the south will likely look even more to South Africa to satisfy demand.

In terms of non-food production, FAO estimates it increased by 700 percent from 1994 to 2004 (though generally starting from a low base). In contrast, food production increased by only 70 percent, largely due to area expansion (FAO 2011). Some sub-sectors,

Figure 10. Cereal production and import trends, 2000-2008



Source: FAO 2011.

like tobacco and sugar, or perhaps jatropha, may prove to be greater engines of growth in the future.

Why is agriculture performing so poorly? Agricultural production in Mozambique suffers from lack of access and availability of improved technologies, markets, and government services. In addition, agricultural production in Mozambique is almost entirely rainfed, yet rainfall is erratic and not well-distributed. Almost every year Mozambique suffers from droughts and floods, with droughts being more predominant in the southern provinces and floods more common in the central and northern provinces. Rainfall variability is thus the major constraint to agricultural production and a major explanation for the great variability in crop incomes from one season to the other. Some large-scale irrigation investments have been pursued in the south, but in general the large majority of farmers do not irrigate their fields. Water harvesting and conservation technologies are still markedly sparse (Boughton et al. 2006).

Labor and lack of mechanization may also be major constraints to increased productivity. The average farm size is very low (less than 2 has. for a family of around 5 persons), yet Walker et al. (2004) report that in 2002 the majority of farmers said they could expand their farm sizes if they wanted to. Observers caution that, in fact, to now most farmers use the hand hoe for tilling, and other methods may now be needed for agricultural extensification. These include the use of animal traction and mechanized tractors. Animal traction, however, is more suitable to the less-agriculturally-suitable southern provinces and parts of the central provinces. This is because in the northern provinces, cattle are susceptible to the endemic tse-tse fly disease, limiting ability to expand the cultivated areas with animal traction (Alfredo et al. 2005). Mechanized tractors may also be more suitable for use in the south, where roads and access to maintenance depots and fuel are better (Cunguara and Hanlon 2010). Observers also note that labor may emerge as a constraint to improved weeding and that lack of access to credit can restrict access to inputs or wage-labor that could lead to cultivation of larger plots.

The use of other inputs is also extremely low (Table 9). Less than 10 percent of farmers use fertilizer, pesticides, irrigation, credit, or extension services. This is due to lack of access to credit (Langyintuo and Mekuria 2005), a wealth bias in extension services (Walker et al. 2004; ECON Analysis 2005; Gêmo, Eicher, and Teclemariam 2005; Mather 2009; Cunguara and Hanlon 2010; Cunguara and Moder 2011), and poor market access (Crawford, Jayne, and Kelly 2005; Minde, Mazvimavi, and Manussa 2010; Uaiene, Arndt, and Masters 2009; Arndt and Tarp 2001; Arndt et al. 2000; Massingue et al 2004; Tostão and Brorsen 2005; Mather, Boughton, and Jayne 2011; Cirera and Arndt 2008; Cunguara and Darnhofer 2011). For most crops actual yields are about 20 to 30 percent of potential yields, with cassava the only exception (Table A.3). These facts suggest that Mozambican agriculture needs sustained investment on multiple fronts, particularly development of input and output markets, including finance, since this is a prerequisite for adoption of improved technologies.

The case of maize production suggests that improvement is possible, however, even under current conditions. A study of maize production between 1996 and 2008 noted that the bottom-earning quintile of maize producers accounted for less than two percent of total production, while the top quintile accounted for more than half (Cunguara and Kelly 2009). Households in higher quintiles achieved higher production levels because they cultivated larger fields and obtained higher yields. Total maize production in the top quintile in 2008 was approximately 44 times greater than that in the bottom quintile, but total cropped area (of maize and all other crops) was only roughly twice as large. This suggests that these farmers were able to access more land as well as more labor, machinery, or other inputs.

Table 9. Characteristics of agriculture production in Mozambique, 2002-2008

Description	2002	2008	Δ 2002-2008 (percent)
Cultivated area ('000 hectares)	4,185	5,602	33.9
No. small and medium sized farms ('000)	3,127	3,725	19.1
Average farm size (ha.)	1.3	1.5	12.4
Household size (average no. members)	5.0	5.1	2.0
Rural population (millions)	12.4	15.1	21.5
Household heads with 4th grade education (%)	31.1	42.3	36.0
Receipt of extension (% farms)	13.5	8.3	-38.5
Use of chemical fertilizer (% farms)	3.8	4.1	7.9
Use of pesticides (% farms)	6.8	3.8	-44.1
Use of irrigation (% farms)	10.9	8.8	-19.3
Receipt of credit (% farms)	2.9	2.6	-10.3

Source: Adapted from MPD/DNEAP (2010).

4.2 Price and marketing policies

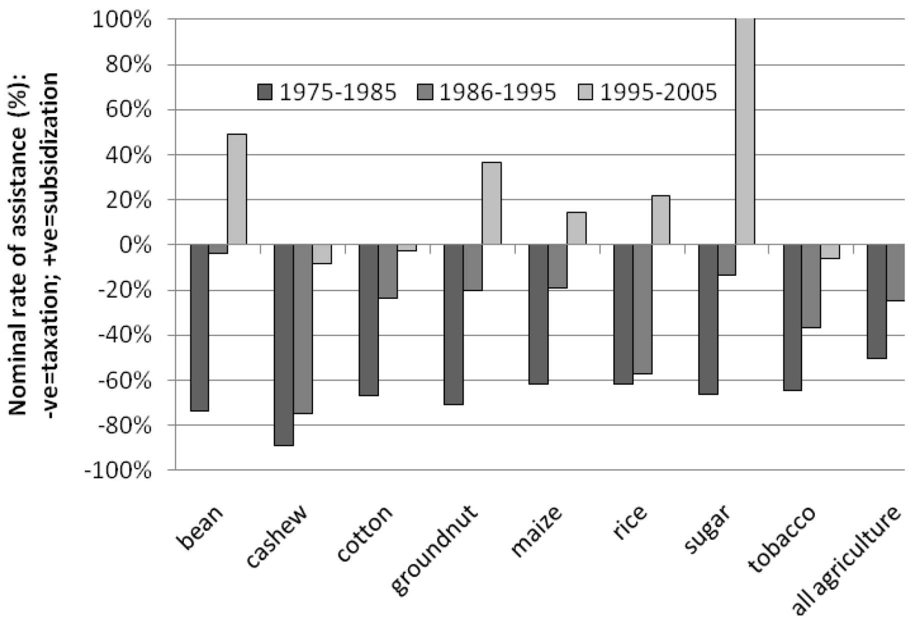
4.2.1 Colonial era and civil war period

Agriculture has also been affected by price and marketing policies. The colonial era and civil war periods had three important characteristics relevant to Mozambique's rural-urban transformation, particularly the north-south divide. Throughout the colonial period, the northern and central provinces were almost entirely rural, and based around large plantations in the central areas and cash crops in the north (Silva 2007). Some urbanization occurred in the southern provinces where the majority of the Portuguese settled (Olsefski 2009). Cash crops were exported using the Nacala port, located in the northern part of the country, but otherwise northern provinces had little incentive for economic connections with the rest of the country. The Portuguese, mainly traders, focused more attention on commerce with the land-locked countries to Mozambique's west, rather than trade and agricultural development in the north. Rail lines extended from ports at Beira and Nacala to what are now Malawi, Zambia, and Zimbabwe. During the War of Liberation even this development of infrastructure ground to a halt. The bridge connecting the central and northern provinces over the Zambezi River, for example, was planned before independence, but not completed until 34 years later.

Investment did not return after independence because of the ongoing civil war (1976-1992). If anything, the civil war accelerated differences between north and south. Soon after independence, the government began 'socialization' of rural areas. This involved the forced concentration of the rural population in communal villages and large state farms, many of which were formerly colonial estates (Mosca 2011). The state-led farming model provided weak incentives for investment to increase productivity, especially as the government implicitly taxed the agricultural sector.

Figure 11 demonstrates this in the form of nominal rates of assistance or taxation to tradable crops, with negative rates representing net taxation and positive rates measuring net subsidization. Prior to the structural adjustment reforms in 1987 the government heavily taxed agriculture by regulating farmgate prices and supporting an overvalued exchange rate. Farmgate price regulation was done through a monopsonistic marketing board (AGRICOM) through which commercial grain, particularly cereals, had to be sold. This board set both pan-territorial and pan-temporal producer and consumer prices that were below free market levels. Large plantations and commercialization and processing firms were also state-owned. Although AGRICOM functioned to some extent, in practice AGRICOM had neither the reach nor resources to fully control prices, and most goods were sold on the parallel market. This system inhibited farmers from seeing genuine market prices and undermined incentives for production (Alfieri, Arndt, and Cirera 2007; Mosca 2011).

Figure 11. Nominal rate of assistance (NRA) to agriculture, selected years (1975-2005)



Source: Anderson 2008.

4.2.2 Post-conflict period

Towards the end of the civil war the government began to engage in market-oriented reforms. In this period, prices and commercialization were gradually liberalized and a new tax structure and lower import tariffs were introduced. Many state-owned agricultural enterprises were privatized.[10] The exchange rate was allowed to fluctuate. Today Mozambique generally allows free trade for normally tradable goods as well as the major food staples (maize, cassava, rice, sorghum). At times the government may issue indicative, nonbinding price guidelines (Alfieri, Arndt, and Cirera 2008; Mosca 2011).

In combination with the effects of exchange rate liberalization, these reforms resulted in higher rates of nominal rates of assistance to agriculture (NRA) over this period, though rates stayed negative on average.[11] This remained true for cashews, tobacco and rice until the mid 1990s (Figure 11). Since then, import duties have been further reduced and simplified.[12] The main tax is a 17 percent value-added tax (VAT). This tax is not effectively enforced on domestic agricultural products, so essentially it functions as a 17 percent import duty for agricultural products (which largely explains the positive NRAs over 1995-2005). The exchange rate is also allowed to fluctuate, so there can be an implicit tax (or subsidy) (Alfieri, Arndt, and Cirera 2008; Mosca 2011).

As shown, crops that were subsidized in 1995-2005 include sugar, bean, groundnut, rice, and maize, with export interventions only for a few crops (cashews, tobacco, and cotton). Export interventions generally aimed at assisting the local processing industry. Nominal rates of assistance were zero for many crops, but positive (i.e. net subsidies) for sugar, beans, groundnuts, maize and rice. Only cashews and tobacco were slightly taxed in aggregate.

Production subsidies have generally not been part of the policy landscape in this period. However, under the Food Production Action Plan (PAPA) the government introduced direct subsidies for seeds, fertilizers, and agricultural equipment and machinery, but this program reaches less than 10 percent of producers. This situation may change in the near future, as the government plans to provide highly subsidized inputs, particularly seeds and fertilizer, in order to accelerate the adoption of modern technologies by farmers producing the targeted crops (maize, rice, wheat, cassava, soybean) as well as poultry.

4.3 Government expenditures

These discouraging facts about Mozambican agriculture indicate that government efforts to improve agriculture have not been effective. This is not for want of agricultural strategies on paper. Table A.4 lists major government strategies and programs in the post-independence era. In addition to the more generic poverty reduction strategies, there have been several

[10] In principle liberalization may have been "good" economic policy, but it also negatively affected transformation of agricultural processing sectors by shutting down much of the industry. Many cashew processing factories, for example, were closed, destroying thousands of "good" jobs, especially in urban areas (McMillan, Horn, and Rodrik 2003).

[11] If a tariff on an imported product is the only distortion, its effect on producer incentives can be measured as the nominal rate of direct assistance to farm output (NRA). This figure provides a single-indicator measure of direct and indirect assistance to (or taxation of) the farm sector.

[12] As of 2006, agricultural products are subject to a 20 percent import tariff, except for those products considered raw materials or basic food products. Maize, rice, tobacco, and cottonseeds pay just 2.5 percent tariff. Sugar pays 7.5 percent (Anderson 2006; Alfieri, Arndt, and Cirera 2007; Anderson et al. 2008). Preferential trade with other SADC countries did not start for agricultural products until 2007.

strategies specifically for agriculture, including PROAGRI II, the Green Revolution Strategy, the Rural Development Strategy, and the Food Production Action Plan. A new Agricultural Sector Development Strategy (PEDSA) is close to approval, to replace the current one, which dates from 1996. The rural transformation process in Mozambique thus appears inhibited not only by underinvestment but also by ineffectiveness in implementation and limited quality of the investments that are made.

Government budget expenditures on agriculture fall significantly below CAADP target of 10 percent, at around 6 to 7 percent of the government budget generally and only 3 to 5 percent in recent years. Much of the government budget has been focused on education, roads and health. While these investments have some benefit for agriculture (certainly roads), they are not substitutes for investments in agriculture (Table 10).

Total spending on agriculture increased from 2001 but since then to the last year for which we have data (2007), it has fluctuated with no clear trend (Figure 12). Expenditures from the Ministry of Agriculture (MINAG) have actually been stable, in real terms, and have provided around 50 to 70 percent of public expenditures, subject to variations from other sources.[13]

There are likely a number of reasons for the ineffectiveness of public spending on agriculture in Mozambique. First, government capacity for analysis and implementation at national and lower levels is weak. This is complicated by the fact that the government is currently pursuing administrative decentralization. The goal of decentralization is a worthy one, but there are significant implementation problems associated with weak incentives, poor capacity and politicization of spending.[14]

The spatial pattern of spending also seems at odds with the importance of agriculture or population. Spending in the two most populated provinces of Zambézia and Nampula, which are crucial for cereal production in Mozambique, exhibits low levels of spending in comparison to the other provinces (Table A.5). Because government spending is reported by institution, rather than functional category, it is difficult to assess quality of spending. Money for research, however, is generally funneled through specific institutes so we have some insight into expenditure in this key category. For research the government spends around US$6 million (MT140 million) per year, about 4.1 percent of recorded agricultural spending and 0.24 percent of agricultural GDP, which is low by international standards (Walker et al. 2006).

What are the implications of agriculture's underdevelopment for rural-urban transformation? First, without significant gains in productivity and household income, rural Mozambicans have little capacity to diversify their incomes through nonfarm investments, and little disposable income to increase demand and encourage growth in nonfarm goods and services. Second, low levels of production mean that consumers are highly dependent upon imports. This further weakens the linkages between consumer demand in urban and rural areas and the development of the national rural areas that could supply them.

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[13] These sources include autonomous agencies such as the FDA (Agricultural Development Fund), GPZ (Zambézia Planning Office), large-scale irrigation projects located in Massingir and Chókwè, DNPDR (National Directorate for the Promotion of Rural Development), and OIIL (Local Initiatives Investment Budget).

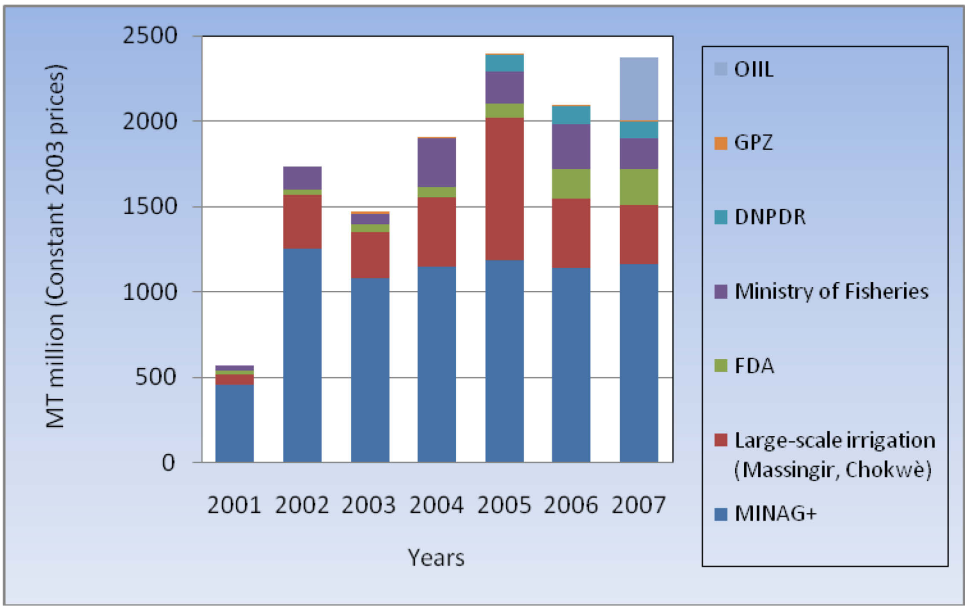
[14] Organizationally, Ministry staff at the local level respond not only to national authorities but also to district and provincial authorities in terms of activities and expenditures. These officials may not share the same priorities as the national level. The most visible expression of decentralization efforts is the OIIL (Local Initiatives Investment Budget), almost known as "7 milhões." This program allocates 7 million meticais (or about $200,000) to each district annually. The transfer is made in the form of a block grant. Spending is left to the discretion of the district councils, although the money should be spent on employment creation and agricultural development. In theory, this structure should make expenditures more responsive to local needs; in practice, the discretion given to the local authorities means that they may respond more to personal and political concerns.

Table 10. Sector Share (Percentage) of Total Government Expenditure

Sector	1999	2000	2001	2002	2003	2006	2007
Education	16.1	19.8	23.3	18	17.8	20.3	21.6
Health	13.4	12.9	9.9	12.6	14.9	13.9	13.4
Infrastructure	13.3	15.7	17.4	16.5	11.8	16.8	14.1
Agriculture and rural development	5.2	6.3	3.4	5.5	6.9	4.6	3.7
Governance, security, judicial system	8.9	7.8	7.7	7.7	8.9	8.1	8
Other sectors	43.1	37.5	37.8	38.9	39.4	36.3	39.2

Source: IMF 2004 and Ministry of Finance 2011.
Notes: Amount excludes interest payments. Data on actual expenditures not available for 2004 and 2005

Figure 12. Public expenditures in agriculture, 2001-2007 (constant 2003 values)



Source: World Bank 2011b.

4.4 Growth in nonagricultural sectors

While the majority of Mozambique's population works in agriculture or closely related occupations, transformation implies their transition to other sectors. In current unpromising conditions for agriculture, and a static production structure (refer to Figure 8), what is occurring with nonagricultural sectors? What might be their contribution to transformation?

As we noted in the introduction, megaprojects financed by foreign investment are a key element of Mozambique's current economic growth strategy. The first of these was the Mozal aluminum smelter in Maputo province, created with a $2.1 billion investment by Australian and South African interests. This made Mozambique one of the larger aluminum exporters in the world. Other megaprojects include a gas pipeline from Inhambane province to South Africa and a total of $950 million in investments in titanium mines and smelters. By late 2010 nine megaprojects were estimated to total $9.82 billion in investment, creating five to six thousand direct jobs, and hundreds of supply contracts (Sonne-Schmidt, Arndt, and Magaua 2009).

Table 11 shows the contribution of these megaprojects to GDP in an indirect fashion. The projects all fall under the industry category of mining, manufacturing and utilities, although these projects have also driven growth in construction. In 1994 industry accounted for just 8 percent of GDP, but by 2009 it accounted for 20.4 percent, with construction adding another 4 percent. The majority of this growth is related to megaprojects. Sonne-Schmidt, Arndt, and Magaua (2009) estimate that these projects contributed to 12 percent of the economic expansion from 2002-2006, whereas industry as a whole contributed 20 percent. Megaprojects contribute substantially to export revenue, perhaps over 50 percent in 2006 (Sonne-Schmidt, Arndt, and Magaua 2009). And there may be other benefits, such as improvements in infrastructure (e.g., the Maputo port) and the overall investment climate. Although industry is smaller in size than agriculture, it contributed as much as agriculture to overall growth.

Table 11. Sectoral sources of economic growth: 1994-2009

	Agriculture	Industry (including megaprojects)	Construction	Wholesale and retail	Transport, storage, commun	Other
Sector share: 1994	31.3%	8.0%	2.1%	16.3%	10.2%	32.3%
Sector share: 2009	27.1%	20.4%	3.3%	16.0%	10.8%	22.7%
Growth rate	164.2%	676.1%	378.6%	199.3%	225.6%	114.5%
Growth rate weighted by 1994 share	51.4%	54.3%	8.1%	32.6%	23.0%	37.0%
Contribution to total economic growth	25.0%	26.4%	3.9%	15.9%	11.2%	18.0%

Source: Own calculations from UN 2011.
Notes: Industry includes mining, manufacturing and utilities.

The contribution of megaprojects to poverty reduction, however, is very low. For instance, the southern provinces have absorbed most of this foreign-direct investment (FDI) but had little or no poverty reduction in recent years. This is likely due to the fact that these projects generate little employment relative to other sectors (see Table 6, which indicates that employment shares have not changed much over the years) and contribute little to government revenue, which could be used for investment. Finally, because megaprojects were attracted via tax breaks, their contribution to government revenue is far smaller than their production size would suggest. For example, for Mozal and others, the standard income tax of 32 percent was replaced by a fixed tax equivalent to 1 percent of their exports in 2006 (Sonne-Schmidt, Arndt, Magaua 2009). Consequently, while the growth of foreign investment is not necessarily harmful, FDI-led growth in Mozambique is not pro-poor and may mean that policymakers ignore the lagging sectors of the economy because overall economic growth rates appear impressive.

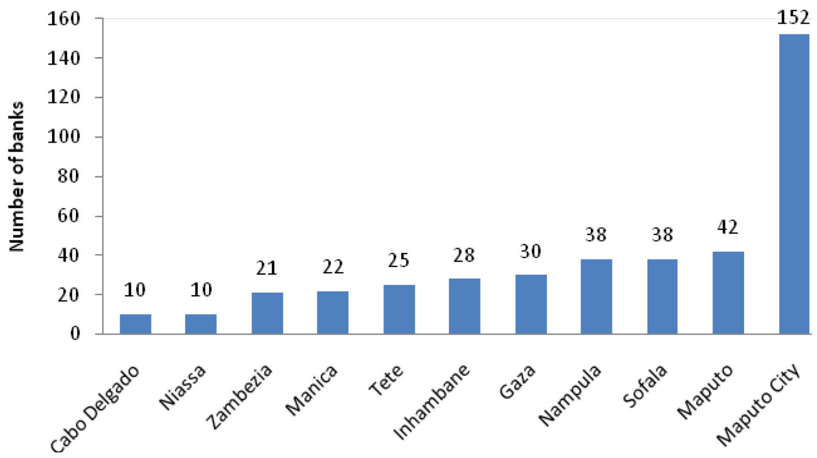
In addition to agriculture, nonfarm enterprises are also lagging. Table 12 reports results from a 2007 World Bank enterprise survey (World Bank 2011c). Although Mozambique compares favorably to the region on a number of dimensions, Mozambican firms appear highly capital constrained and also face significant regulatory and administrative barriers. Figure 13 also shows the weak financial infrastructure, especially outside Maputo City. Again, access to banks is generally much better in the south of the country. Microfinance has also witnessed some expansion in Mozambique, but the sector is still underdeveloped (de Vletter 2006). Firms have also cited electricity supply as a major or severe problem, although that appears to be a minor constraint relative to the situation in other African countries.

Table 12. Self-reported constraints (2007 firm survey)

Percent of Firms Naming as a Major Constraint	Mozambique	Africa	All countries
Non-infrastructure constraints			
Tax administration	15.8	26.9	23.7
Business licensing and permits	13.7	16.2	15.5
Crime, theft and disorder	33.6	28.8	25.9
Access to finance	50.1	44.8	30.7
Customs and trade regulations	12.2	21.8	16.9
Labor regulations	6.0	8.7	11.7
Infrastructure constraints			
Number of power outages in a typical month	3.0	10.5	9.0
Average number of incidents of water insufficiency in a month	2.3	7.2	6.3
Delay in obtaining a water connections (days)	34.1	29.5	34.3
Delay in obtaining a mainline telephone connection (days)	5.0	30.7	25.4
Delay in obtaining an electrical connection (days)	12.7	31.2	36.8

Source: World Bank 2011c.

Figure 13. Number of banks, by province



Source: Banco de Moçambique 2011

4.5 Migration, income diversificsation, and farm-nonfarm linkages

Migration in Mozambique has facilitated rural-urban transformation. Colonial migration patterns were largely influenced by push factors such as the hut tax, xibalo labor (colonial system of forced labor), drought, and famine. Later, employment in South Africa, particularly in the mining sector, was the preferred income-generating choice of Mozambican men from the rural (and often urban) south (de Vletter 2007). After independence, the failure of communal development to stimulate rural development gave another push to rural dwellers to migrate to the cities (Raimundo 2009). And rural poverty, related to continuing low levels of agricultural productivity, has been a "push factor" throughout the independence era.

As for internal migrants, Dávila et al. (2008) argue that the perpetual movement between urban and rural areas by individual workers and household members is a central part of livelihood strategies. They also highlight fragilities in the agricultural production chains and in the underlying infrastructure, both of which seem unable to support trade across long distances, except to large city markets in the north (e.g., Nampula or Nacala), or those closer to major production centers such as those in South Africa. To this must be added farmers' own livelihood strategies in an increasingly monetized economy. In particular, seasonal or temporary migration can be a useful strategy for obtaining cash to pay for basic services and goods usually found in cities and towns.

Finally, natural disasters also play a role. The National Institute for Disaster Management estimates that in the 20 years up to 2003, between 100,000 and 2.5 million peple were internally displaced due to floods and droughts (Raimundo 2009). While exact figures are not known, a number of these displaced people have relocated in urban areas. Overall then, migration in Mozambique is largely a push phenomenon driven by low levels productivity and commercialization in agriculture and periodic climatic shocks.

Low levels of productivity can also impel rural dwellers to diversify their income sources, although once again there is a regional distinction, with the south offering more opportunities than the north. For instance, smallholders in southern provinces may be compelled to diversify outside agriculture because they cultivate relatively smaller fields. Transportation and market access are also relatively better in the south, and literacy and educational levels are higher, so that the context is more favorable to nonfarm income generating activities (Cunguara and Darnhofer 2011). At the same time, residents of southern provinces historically have a closer connection with South Africa, providing labor for the mines. As a result, residents of southern provinces receive more remittances from family members working in South Africa than residents of other provinces. This additional income can play an important role in overcoming some of the barriers to participation in the nonfarm sector (Thirtle, Lin, Piesse 2003). Overall, the World Bank estimates that Mozambique received USD111 million in formal remittances in 2009, up substantially from USD69 million in 2005. For comparison, Mozambique received about USD600 million in FDI in 2009, and USD2 billion in foreign aid (World Bank 2011a).

In addition to regional differences in nonfarm income, the diversification pattern outside agriculture appears to differ by the quality of the agricultural season. Farmers in the bottom quintile of household income per adult equivalent tend to participate in nonfarm activities mostly as a drought-coping mechanism, whereas households in the top quintile seem to engage in nonfarm activities mostly as a permanent livelihood strategy (Figure 14). For instance, participation in nonfarm activities was higher for all income groups in the drought year 2005, although participation in nonfarm activities (when comparing the three years) is significantly smaller for the top income group. Income diversification through on-going participation in nonfarm activities may thus be a route out of poverty (Cunguara, Langyintuo, and Darnhofer 2011).

This result is consistent with other studies, which show a positive and significant correlation between wealth and income generation through nonfarm income-generating activities (Reardon 1997; Barrett, Reardon and Webb 2001; Walker et al. 2004; Benfica 2006; Mather, Cunguara, Boughton 2008). This can be related to the inability of the poor to engage in activities of high return, which tend to require initial investments. Such barriers to entry to high-return activities can be eased through livestock ownership, which is often a source of assets (Osbahr et al. 2008). Thus, programs promoting livestock ownership are likely to have a significant impact on poverty reduction (Walker et al. 2004). In designing such programs, equity issues must be taken into account to ensure that the poorer households, especially the less educated and female-headed ones, benefit as they are often those that find it most difficult to access high-return activities (Cunguara, Langyintuo, and Darnhofer 2011).

Figure 14. Households engaged in nonfarm activities (percentage), by year and income quintile

Source: Cunguara, Langyintuo, and Darnhofer 2011.

Diversification can also occur within the household's own agricultural production system. Boughton et al. (2006) note rural households increased the average number of crops they grew between 1996 and 2002. The data show an increase in the percentage of farmers cultivating sesame and tobacco. These cash crops are usually associated with higher participation in nonfarm activities. Benfica (2006) documents that in the Zambezi valley, farmers growing cotton and tobacco spend more money on non-agricultural commodities. Similar results were reported earlier in Tschirley and Benfica (2001). This suggests that development programs should support the dual nature of incomes that rural households derive through both agricultural production and other activities.

One potential way to encourage this transformation and improve rural incomes is through greater support for investment in agro-processing and market infrastructure (Cunguara and Darnhofer 2011). For example, in the southern provinces female-headed households are more likely to engage in milling and agro-processing activities than their male counterparts. Given that these households are usually among the poorest, investments in agro-processing plants in rural areas, and a better connection of these plants to the urban centers through improvements in market infrastructure is likely to benefit both the rural and the urban poor. In general, female-headed households appear to engage in nonfarm activities that do not require distant travel and that allow for flexible time management, such as cutting firewood, sticks, grass and palm tree leaves, milling and agro-processing activities, or collecting honey and bush fruits. This may be associated with women's role in household chores as well as other potential barriers to access to wage employment.

5. Conclusions: Towards a more effective rural-urban transformation?

This paper has highlighted a number of disturbing and sometimes puzzling facts about the rural-urban transformation in Mozambique. With regard to the first of our lenses on transformation, it could be said that "urban-ness" is coming to rural areas. Mozambique is indeed urbanizing due to a combination of population growth, rural-urban migration and improved connectivity. Connectivity has improved and reduced travel times, thus improving connections to urban centers, their markets, and their services. Significant strides have been made in increasing access to education. Although not shown, we know that cellphone network coverage and clinics are also more abundant. Further, an analysis of Mozambique's real exchange rate movements between 1995 and 2010 suggests that macro-economic policies have been favorable towards production of tradable goods and services, thereby promoting long term structural transformation and growth.

Despite these advances, use of improved agricultural technologies and productivity remain unchanged over years, input and output markets remain fragile, the structure of economic production has stagnated, and the country's transformation patterns are highly uneven. Colonization and conflict imprinted a stark north-south divide that has arguably been exacerbated by a growth strategy relying on foreign investment and increasingly tight connections between South Africa and the southern provinces. Moreover, while significant progress in fighting poverty was made in the 1990s, this progress now appears to have stalled. Rural poverty may actually be increasing. This lack of progress applies equally to urban areas, which also seem particularly vulnerable to food price inflation and provide potential sources of political protest.

The lack of poverty reduction appears to be related to the fact that industrial growth has been driven by megaprojects with few connections to the larger Mozambican economy and to the underperformance of agriculture, especially in those food crops produced by the poor. Production in several key crops has not even kept pace with population growth. Transformation in agriculture has been minimal since colonial times, although road quality improvements may be improving access to markets, especially to those in smaller urban centers. Government expenditures on agriculture are not adequate either in terms of levels or productivity. This raises questions not only about the appropriateness of investments, policies, and programs but also about the effectiveness of institutions and implementation.

The underperformance of agriculture in Mozambique is even more disturbing given that the country has considerable natural potential in terms of land and water resources and almost free access to international markets. The question is how to relieve constraints on productivity and land expansion, which may have reached a natural limit given current labor availability and production methods. The limited role of the private sector in input and output markets, especially in terms of providing credit, must be addressed as do any constraints put on production by the current system of land holding. Growth in agricultural production and productivity and development of the full food and agricultural system, including agro-processing, is of paramount importance in supporting the rural-urban transformation. The fact that 80 percent of the population work in a sector from which there are few rapid outlets and that is essentially stalled in terms of productivity and change presents Mozambique with a serious social, not just economic, question.

Initiatives for agricultural growth must, however, ensure a connectedness to urban centers. Urban markets within Mozambique have grown; Mozambique now has more than 52 cities of more than 20,000 people. Towns and smaller cities are much more accessible than export markets to rural and periurban producers, and are likely much more accessible to them than to South African producers. But much of the food market in urban areas is currently being supplied by South Africa, especially in the south. The potential to replace South African imports at a lower cost exists but is still weakly explored, although this varies by crop. Without stronger rural-urban linkages it may well be that the Mozambican economy becomes increasingly dualized, in terms of the north-south divide and the nature of urban and rural economies. As this study shows, greater public investment in agriculture and infrastructure has the potential to accelerate growth and poverty reduction, and overall development for the national economy.

Recent social disruptions may be indicative of a turbulent future if the dynamics behind development of both urban and rural areas are not addressed. As in other countries, the centers of protests tend to be in the cities where food inflation is felt most. In February 2008 and September 2010 violent riots erupted in urban centers over the rising cost of living, including price rises for bread, other staples, and the cost of basic services. Dozens lost their lives, hundreds were injured, and several physical infrastructures were attacked, including a school. These problems are symptomatic of a troubled economy.

The discussion above obviously necessitates public investments, polices, and programs, including fostering an enabling environment for the private sector. But beyond economic or technological solutions, there must also be an enabling environment for effective public sector action. One of the political constraints to a pro-poor rural-urban transformation is the lack of distinction between the state and the ruling party. This may influence the decisionmaking process in terms of resource allocation. For example, Zavale et al. (2009) argue that the government budget allocation to various sectors reflects both policy and development priorities, as well as political compromises. Agricultural investments are still low (less than 10% of total government budget), and the allocation of the scarce agricultural resources could be improved by allocating funds (and human resources such as extension workers) to provinces based on agricultural potential and the number of inhabitants. This would ensure that provinces such as Zambézia and Nampula, with high agricultural potential, are prioritized in budget allocation.

A second constraint pertains to the nature of development policies in place. Some of them are biased in favor of urban dwellers, such as subsidies on electricity connections or water or basic food items, such as bread. Most of these were introduced following the food riots in 2008, as a direct response to urban protests and pressures. How best to support agricultural production and rural dwellers is only given limited debate, and potential responses, such as broad inputs subsidies or direct distribution by the government, historically have presented problems of effectiveness and financial sustainability.

A third constraint relates to the need for public reform in government institutions. For example, many extension workers are on an annual contract, which encourages the more productive agents to seek jobs with NGOs and the private sector (Eicher 2002). Moreover, the government faces a significant challenge in recruiting and retaining qualified employees that can provide solid analysis and advice and promote effective policy change, due to lower wages relative to the private sector. Institutional ineffectiveness in design of investment as well as execution means that employees in the agricultural sector have a difficult time lobbying the government and donors for more resources. Resources allocated to agriculture have actually declined since 2005. This leads to even more serious constraints on needed investment in services, such as research and extension, infrastructure, and human resources. The answers to the transformation question, then, lie not only in improving the technologies and markets available to farmers but also in improving government commitment to the sector.

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Annex A: Additional Tables and Figures

Figure A.1: Percentage of the urban population in selected regions and Mozambique

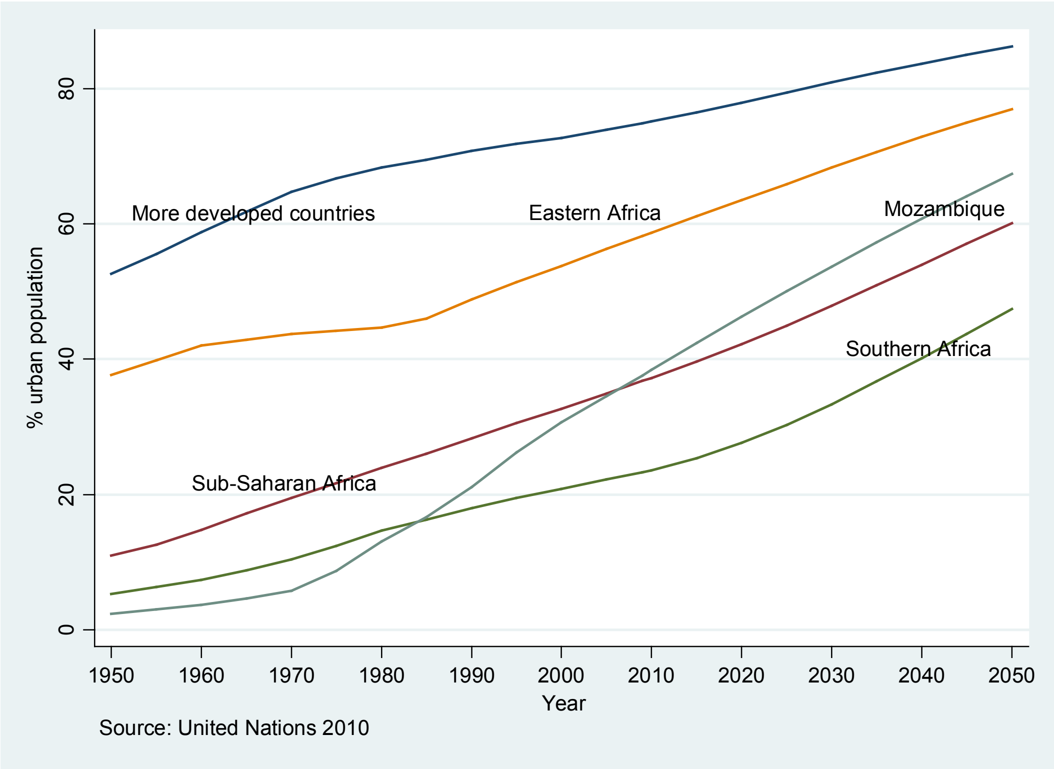
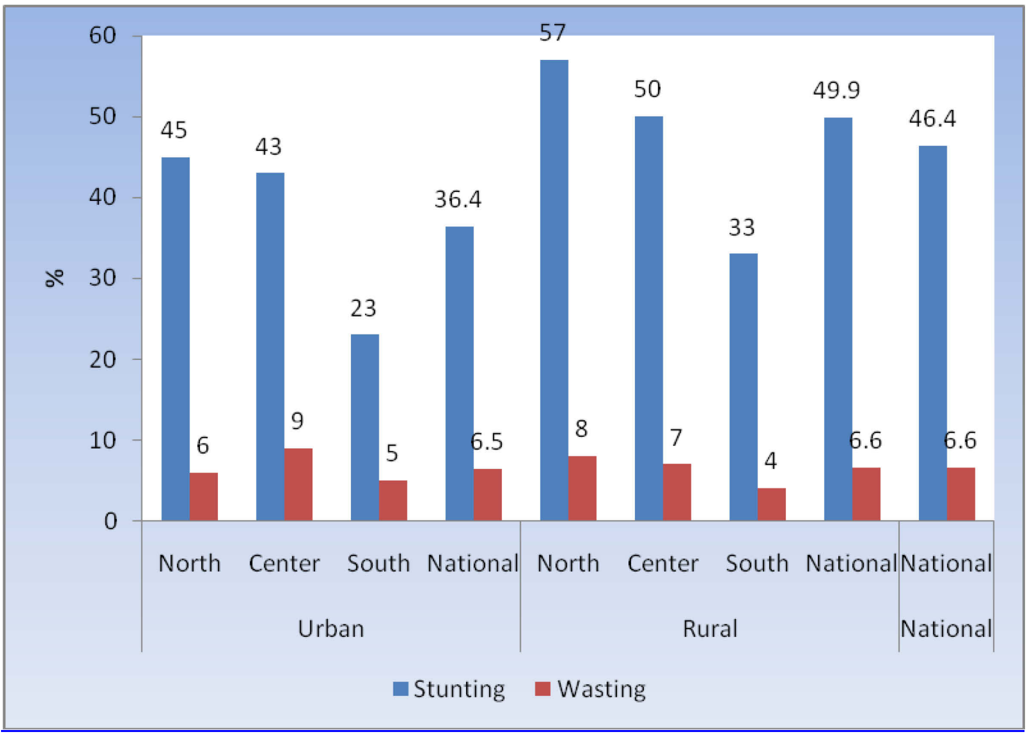


Table A.1: Agglomeration Index, Southern and Eastern Africa

Country	Agglomeration Index	UN Estimate
Mozambique	21.2	34.5
Malawi	17.6	15.1
South Africa	49.4	56.9
Swaziland	19	23.4
Tanzania	25.8	22.3
Zambia	30.5	34.8
Zimbabwe	33.2	33.8

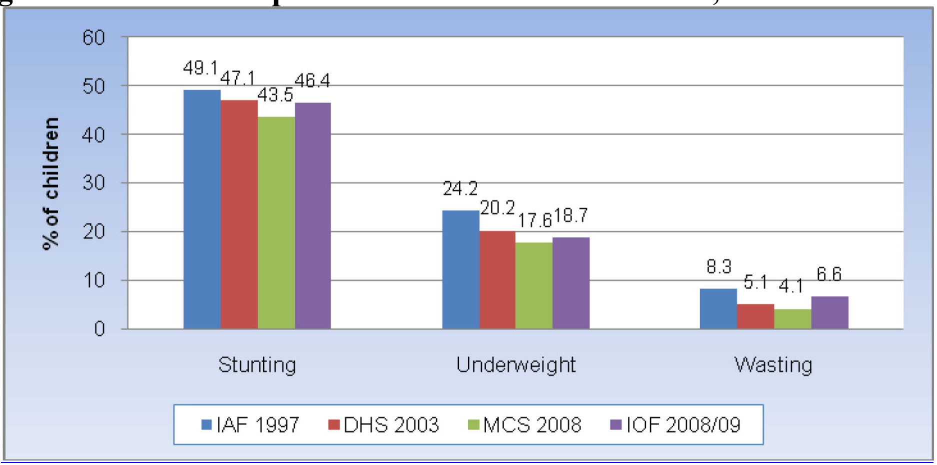
Source: For Mozambique, own calculation for agglomeration index and UN 2010 (for year 2005). For all others, Uchida and Nelson 2010.

Figure A.2. Prevalence of child malnutrition in rural and urban areas, and by region, 2008-2009



Source: MPD/DNEAP 2010.

Figure A.3. Trends in prevalence of child malnutrition, 1996-97 to 2008-09



Source: MPD/DNEAP 2010.

Figure A.4: Agricultural Conditions in Mozambique

A.3.a. Rainfall in Mozambique, 2005-07 — **A.3.b. Land suitability for agricultural use**

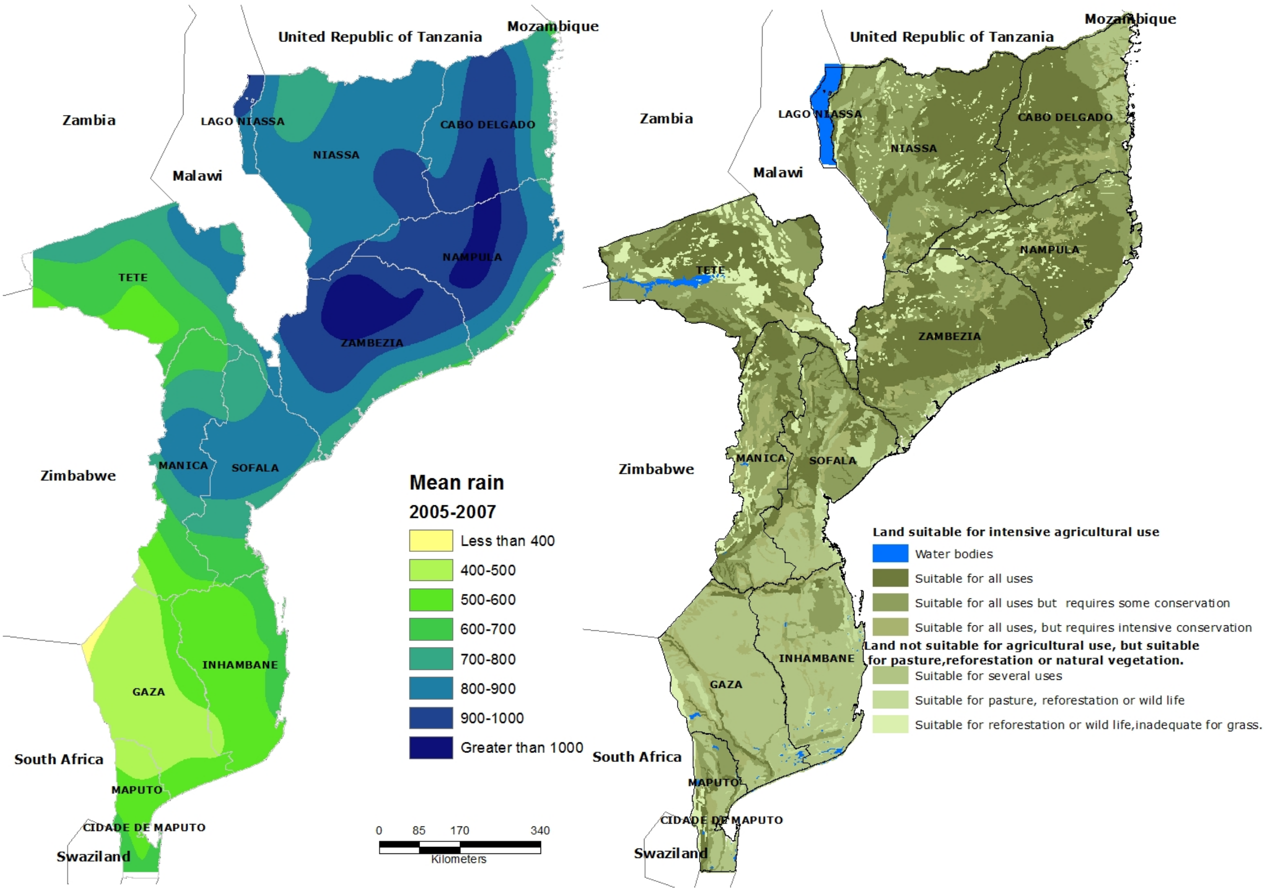


Table A.2. Food production trends in Mozambique, 2002-2008

Crop/year	2002	2008	Growth rate 2002-08	Coefficient of variation: 2002-08
Total production (million Kg)				
Maize	1,115	1,214	8.9	12.7
Rice	93	88	-5.9	18.7
Sorghum	138	126	-8.6	22.8
Millet	12	15	19.7	27.5
Groundnuts – large husks	38	31	-17.5	21.4
Groundnuts – small husks	64	71	10.9	16.5
Butter bean	36	53	47.1	15.5
Cowpea	54	62	15.5	13.1
Bambara groundnut	23	13	-44.0	34.3
Pigeon Pea	32	64	101.6	32.2
Cassava	3,446	4,055	17.7	15.7
Sweet Potatoes	456	610	33.7	22.9
Population growth			17	

Source: Adapted from MPD/DNEAP 2010 (using TIA data) and UN 2010.

Table A.3. Estimated actual and potential crop yields (select major crops)

Crop	Average actual yield (t/ha)	Average potential yield (t/ha)
Maize	0.9	5.0-6.5
Sorghum	0.4	0.8-2.0
Rice	1.0	2.5-6.0
Beans	0.5	2.5
Cassava	6.0	5.0-10.0
Cotton	0.5	1.0-2.0

Source: Loening and Perumalpillai-Essex 2005 and Howard et al. 1998.

Table A.4. Key policies and interventions in agriculture since independence

	Period	Development strategies/plans	Intended Outcomes
Conflict period	1975-1981	Central planning. Heavy government intervention in production (state farm, state enterprise). Fixed prices and salaries.	Rapid industrialization and development. However, smallholder farming was neglected. Rapid rural urbanization through "Communal villages". Reduction of rural exodus.
	1981-1986	Currency devaluation, dismantling of price controls	Producer prices for traditional export crops were periodically revised; pan-territorial and pan-temporal price policy abandoned. Minimum (reference) price setting for crops in monopsonic markets such as cotton and tobacco still used.
Post-conflict period	1992-1997	Structural Adjustment Program (SAP)	Price deregulation or tying of domestic producer prices more closely to international prices, currency devaluation, privatization
	1995-	Agricultural Policy and Implementation Strategy (PAEI)	Improved food security; sustainable economic development; reduction of unemployment and poverty reduction
	1999-2004	PROAGRI I	Coordination of activities in the agricultural sector, while also building the ability of the Ministry of Agriculture and Rural Development to play an effective and appropriate role in a market economy.
	2001-2005	Poverty Reduction Strategy Paper (PARPA I)	Rapid economic growth. Recovery of industries and job creation in urban centers. Focus on inflation reduction, rehabilitation of productive capacities, restoration of infrastructure & social services and reduction of imports. Greater ownership of the loan programs (mainly from the World Bank and International Monetary Fund) by the Government, leading to better fiscal policy.
	2003-	Agenda 2025	Long term vision and strategy for Mozambique
	2006-2011	PROAGRI II	Harmonized international development partner support to the agriculture sector
	2006-2009	PARPA II	Reduce poverty headcount from 54% to 45%.
	2007	Green Revolution Strategy	Increase agricultural production and productivity to reduce hunger and food insecurity; increase export and supply of raw material for local industry
	2007	Rural Development Strategy (EDR)	Enhance productivity, competitiveness and wealth creation; sustainable use and management of natural resources; strengthening of social capital; expansion of human capital, technology and innovation; good governance and promotion of a market economy
	2007-	Local Investment Fund	Increase monetization of rural areas; address market failures in provision of rural financial services; increase food production and create employment opportunities
	2008-2011	Food Production Action Plan (PAPA)	Food import substitution through local food production of maize, rice, wheat, oil crops cassava, potato and poultry
	2009-2015	Agricultural Sector Development Strategy (PEDSA)	Enhance profitability, competitiveness and value added of the agricultural sector (not yet approved)
	2011-	National Development Strategy (NDS)	Guide the country's path towards poverty eradication, prosperity and development goals. Links short-term priorities with long-term goals, integrate sector plans within a coherent overall strategy, and identify concrete programmes to be implemented (being drafted)

Source: Compiled by the authors.

Table A.5. Expenditure, GDP, and rural population, by province, 2004-06

	Expenditure (Million MZN)	Share of Expenditure	GDP (Million MZN)	Agri GDP (Million MZN)	Agri GDP share	Rural Population	Rural Population share
Niassa	62.69	11.1%	5,102.93	1,896.51	37.3%	718,928	5.5%
Cabo Delgado	50.13	9.1%		3,404.44	44.8%	1,260,709	9.6%
Nampula	77.77	14.0%		7,377.32	35.7%	2,670,281	20.3%
Zambezia	54.47	10.0%	17,604.88	9,678.97	55.0%	3,031,893	23.0%
Tete	42.99	7.8%	7,585.68	2,071.40	21.5%	1,206,037	9.2%
Manica	49.83	9.0%	20,658.47	2,437.95	34.9%	887,187	6.7%
Sofala	58.25	10.5%	16,976.47	3,010.70	17.7%	898,812	6.8%
Inhambane	61.52	11.1%	9,129.83	3,873.36	42.3%	1,120,690	8.5%
Gaza	53.30	9.7%	6,880.08	2,510.52	36.5%	985,380	7.5%
Maputo	42.51	7.7%	50,768.11	1,548.63	3.0%	391,490	3.0%
National							

Source: Zavale et al. (2009), based on MINAG and INE data