Private Investment in the Agriculture Sector in Mozambique

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Contents

Illustrations

Figures

Tables

Exhibits

1. Introduction

This short paper has been prepared as a background study for a review of public expenditure on agriculture (AgPER) this is being conducted by the Ministry of Agriculture and the World Bank.[1] The paper has three objectives: first, to examine the data framework for tracking private investment in the agriculture sector in Mozambique; second, to identify major factors constraining private investment in agriculture; and third, to assess the implications for public expenditure management to accelerate agricultural development.

In line with the AgPER, this paper uses the Africa Union/NEPAD definition of agriculture, which includes crops, livestock, fisheries and forestry. Agro-processing activities, though classified as manufacturing operations, enter the analysis, too, through their influence on investment in agriculture via the farm to market value chain. The analysis addresses investment at three levels: foreign direct investment; commercial investment by national enterprises; and investment by small scale household farms.

Section 2 provides background information on the agriculture sector in Mozambique. Section 3 examines the available data on trends in investment in agriculture, and offers suggestions to improve the statistical basis for monitoring the effectiveness of government programs to stimulate agricultural development. Section 4 outlines the major factors that drive or constrain investment in agriculture. Section 5 concludes with implications for the role of the state in stimulating and facilitating investment in agriculture.

[1] World Bank (December 2007), Aide-Memoire: Preparation mission for the Assessment of Public Expenditures for Agriculture (AgPER).

2. Agriculture Sector in Mozambique

Increased investment and rising productivity in agriculture are vitally important in Mozambique as a foundation for sustainable growth, poverty reduction, job creation, and enhanced benefits from trade.

In 2006, agriculture generated an estimated 25.2 percent of GDP in Mozambique.[2] This compares to an estimated 30.8 percent of GDP 10 years earlier (Figure 2-1). This drop in the *relative share* of agriculture is a normal feature of successful economic growth and structural transformation, not a sign of stagnation. On the contrary, national accounts data indicate that value added in agriculture (at constant prices) grew at an average annual rate of 5.7 percent between 1996 and 2006, accelerating to 7.7 percent over the latest five years. The latter figure includes growth rates of 8.4 percent for crops, 6.7 percent for animal husbandry, 5.3 percent for forestry, and 5.5 percent for fisheries. Overall value added in agriculture expanded by 74 percent over the past 10 years. Much of the early growth derived from the resettlement of populations displaced by the war. If the GDP statistics are at all accurate, the recent strong performance suggests that there has been substantial investment in agriculture (including investment in clearing land for extensive expansion of the area cultivated).[3]

Over the past 10 years the importance of agriculture as a source of exports has also declined, despite strong growth in absolute terms. The mixed picture is due to the advent of mega-project exports of aluminum ingots, electricity, and natural gas. Table 2-1 shows exports by major product from 2000 to 2007 (preliminary data). Over this period the dollar value of agricultural exports (including fishery products) grew at an average rate of 8.6 percent per year, and by 77.6 percent overall; nonetheless, the sector's share of total export earnings fell from 42.6 percent at the beginning of the decade to just 11.4 percent last year.

The declining contribution of agriculture to GDP and to export revenue greatly understates the sector's importance for economic and social development. In 2005, approximately two-thirds of the population lived in rural areas.[4] Nearly 93 percent of them earn their livelihoods from

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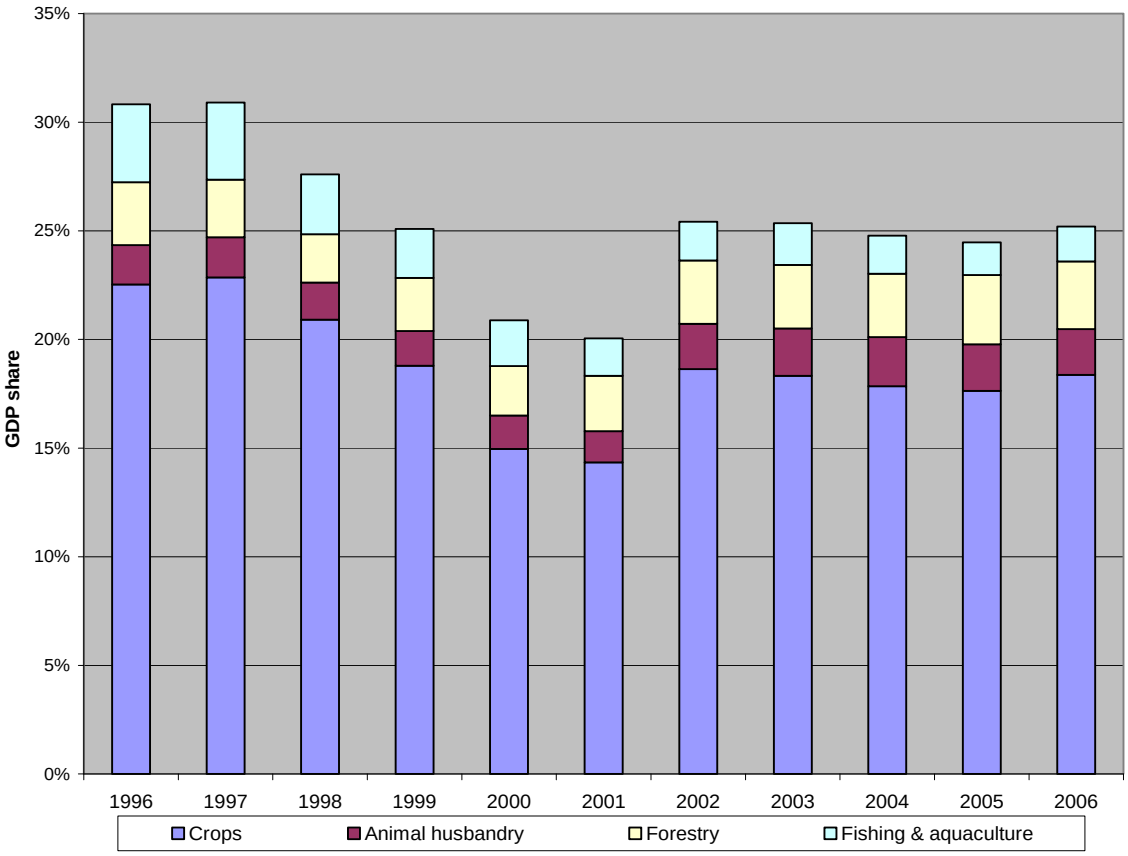
[2] The GDP data in this paragraph are calculations by the author based on data provided by INE.

[3] Questions can be raised about the accuracy of GDP estimates for agriculture given that most of the production takes place on small family farms.

[4] World Bank, World Development Indicators, 2007.

agriculture, and more than half—55.3 percent, according to the national household survey in 2002/03—live in absolute poverty (as measured by consumption).[5] Nearly every rural household relies on agriculture as the primary source of livelihood. Indeed, the 2004/05 Labor Force Survey found that agriculture accounts for 78.5 percent of total employment in Mozambique, and 87.3 percent of the economically active women.[6]

Figure 2-1
Value Added in Agriculture as Percentage of GDP, 1996-2006



Source: Author's calculations from INE data

With nearly more than three-fourths of the workers producing just one-fourth of GDP in agriculture, it is evident that labor productivity is far lower in this sector than in industry or services.[7] The extremely low productivity is symptomatic of the prevalence of traditional low-

[5] The labor force statistic is from INE, *Inquérito Integrado à Força de Trabalho (2004/2005, Relatório Final*, 2006. The poverty statistic is from INE, *Inquérito aos Agregados Familiares* (IAF) 2002-03, cited in the Government's *Action Plan for the Reduction of Absolute Poverty 2006-2009* (PARPA II), p. 12.

[6] INE, IFTRAB 2004/2005, *op. cit.*

[7] The data on employment and GDP shares imply that average labor productivity in agriculture is less than one-tenth the average for other sectors. This huge productivity differential is inconsistent with the relatively small rural-urban differential in poverty incidence, which casts doubt on the accuracy of the statistics.

Table 2-1

Major Exports, 2000 – 2007 (US$ million)

Export product	2000	2001	2002	2003	2004	2005	2006	2007	2007 Share
Aluminum ingots	60,160	383,100	361,100	567,600	915,011	1,020,547	1,401,315	1,480,218	61.4%
Other	81,394	120,192	172,443	204,892	123,814	196,832	237,149	245,022	10.2%
Electricity	66,979	57,346	107,378	113,268	102,252	141,800	177,820	239,684	9.9%
Natural gas (SASOL)					31,273	100,158	109,606	120,652	5.0%
Shrimp	*91,458*	*92,448*	*114,241*	*75,822*	*91,751*	*70,888*	*86,676*	*62,133*	*2.6%*
Sugar					*25,796*	*37,700*	*71,351*	*61,763*	*2.6%*
Tobacco					*40,940*	*43,245*	*110,337*	*51,775*	*2.1%*
Cotton	*25,495*	*18,271*	*15,925*	*32,442*	*35,791*	*56,267*	*45,691*	*41,998*	*1.7%*
Wood	*14,601*	*12,559*	*17,977*	*20,434*	*29,967*	*32,353*	*35,593*	*31,903*	*1.3%*
Re-export of fuel					62,800	11,827	31,781	28,707	1.2%
Bunkers				8,046	8,031	5,884	28,742	20,949	0.9%
Cashews, processed	*11,946*	*10,895*	*16,201*	*7,438*	*21,209*	*17,588*	*23,678*	*10,754*	*0.4%*
Cashews, unprocessed	*8,399*	*2,104*	*1,114*	*1,499*	*8,015*	*5,514*	*13,010*	*8,862*	*0.4%*
Maize					*3,205*	*3,185*	*5,017*	*5,079*	*0.2%*
Lobsters	*269*	*314*	*855*	*455*	*756*	*841*	*1,172*	*1,219*	*0.1%*
Gold, non-monetary					1,341	464	1,970	1,102	0.0%
Tires	299	4,584	1,501	11,376	1,653	142	182	284	0.0%
Fruit	*819*	*254*	*110*	*593*	*160*	*21*	*44*	*15*	*0.0%*
Copra	*2,143*	*1,067*	*967*	*47*	*95*				*0.0%*
Total Agriculture Exports	***155,130***	***137,912***	***167,390***	***138,730***	***257,685***	***267,602***	***392,568***	***275,502***	***11.4%***
Total Exports	**363,962**	**703,134**	**809,812**	**1,043,913**	**1,503,861**	**1,745,256**	**2,381,132**	**2,412,120**	**100.0%**
Agriculture / Total Exports	**42.6%**	**19.6%**	**20.7%**	**13.3%**	**17.1%**	**15.3%**	**16.5%**	**11.4%**	

Source: INE and author's calculations

input, low-output farming techniques. Annual agricultural surveys (TIA) show that small-scale family farms comprise 99.5% of all agricultural enterprises. The vast majority of smallholder farms rely on traditional plant varieties and cultivation techniques. Very few use modern seeds, inorganic fertilizer, pesticides, herbicides, animal or mechanical traction, or irrigation. These conditions reflect a combination of serious problems including lack of education, lack of access to markets for supplies and farm products, poor infrastructure of all types, and lack of finance. In addition, the rural population is dispersed geographically, adding to the cost and logistical difficulty of providing market-supporting infrastructure and services.

The prevailing productivity differentials across sectors imply that structural transformation – involving a movement of labor from agriculture to other activities – will be an important source of rising productivity and poverty reduction in Mozambique. But there is an equally pressing need for structural transformation *within* agriculture to introduce more efficient farming techniques for small-holders, increase the production of commercial crops, and facilitate the expansion of medium to large scale commercial farming.[8] In addition, the transformation of agriculture is also strongly influenced by the development of competitive agro-processing industries and improvements in efficiency throughout the supply chains that link farmers to national, regional and international markets.

Mozambique is blessed with an abundant endowment of land, water and sun. It also has an advantageous location relative to regional markets and sea routes to Asia and Europe; an abundance of low-cost labor; and a variety of climatic zones providing favorable growing conditions and market timing for many types of products. The opportunities appear to be vast, ranging from expansion of traditional products such as maize, sugar, cotton, cashews and coconuts, to new commercial developments such as bio-fuels, fruits & vegetables, plantation forestry, soya and other legumes, poultry, sunflowers, and fish farming.[9] In addition, world market prices for most of these products are very favorable, which should further improve the prospects for development.

For these reasons, the agricultural sector in Mozambique should be a strong magnet for foreign and domestic investment – if the enabling environment were favorable. Yet there are serious obstacles to success, as evidenced by the country's relatively weak record of attracting major investments in agriculture and agro-industry, as well as the limited role of commercial farming relative to smallholder production. In this context, the objective of the paper is to see what we know about trends in private investment in agriculture, and to assess the main impediments to more rapid progress.

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[8] In regions that are not well connected to national or international markets, enhancing productivity for basic food crops can have a negative effect on welfare for food surplus households by driving down the local market price of the crop at harvest time. This can be avoided by improving marketing channels, shifting more labor and land into commercial crops, or improving storage facilities so that additional output does not flood the market at harvest time.

[9] More problematic is the fisheries sector, which has been in decline because of over-exploitation of stocks, particularly for prawns. The Ministry of Fisheries, however, estimates the potential sustainable harvest of all fish products to be 240,000 tons, compared to an actual harvest of just over 90,000 tons in 2006. This estimate of the potential harvest suggests that there is great scope for growth in fisheries, too, despite sluggish recent performance (www.mozpesca.gov.mz/economia.html, accessed May 30, 2008.

3. Monitoring Trends in Private Investment in Agriculture

What are the facts on private investment trends in agriculture? In search of an answer, this section reviews six sources of data, with an emphasis on weaknesses in the available statistics.[10] The discussion also identifies several possible approaches to improve the existing data systems in order to provide better information for monitoring the effectiveness of public expenditures on agricultural development in stimulating investment in agriculture.

AUTHORIZED INVESTMENT PROJECTS

The Investment Promotion Center (CPI) produces regular data reports on authorized investment projects. The data cover both foreign and national investments, with a breakdown by sector, by province, by district, and by country of origin, along with the proposed owner' equity capital, the value of loans and supplementary capital, and the expected number of jobs to be created. Prospective investors provide this information in the course of applying for CPI assistance and investment incentives under the Law on Investment and the Code of Fiscal Benefits.[11] The incentives include guarantees on repatriation of dividends and capital, access to international arbitration, exemptions from customs duties on Class "K" capital goods, and other tax benefits for designated types of investment.

Table 3-1 and Figure 3-1 show investment in agriculture (including fisheries) as authorized by CPI over the past five years. The total jumped more than eight-fold from US$69.5 million in 2003 to $594.3 in 2007. Approved FDI held between US$27.2 million and US$38.2 million from 2003 to 2006 before rising to US$95.6 million in 2007. Domestic direct investment was much less, rising from US$4.0 million in 2003 to US$17.0 million in 2007. Complementary capital (Empréstimos e Suprimentos) far exceeded equity investments each year, rising from US$38.3 million in 2003 to US$481.7 million in 2007. [12]

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[10] Because of time constraints, only passing remarks are included about statistics at the subnational level.

[11] The Law on Investments is Law no. 3/93, of 24th June, with supporting regulations. The Code of Fiscal Benefits was issued as Decree no. 16/2002, of 27 June. CPI services are available for national investments of US$5,000 or more of own equity capital, and direct foreign investments of US$50,000 or more (Decree no. 36/95, of 8th August, Article 6). This excludes nearly all investment by smallholders, who in any case are extremely unlikely to satisfy CPI documentation requirements or to bear the costs of formalizing their investment plans.

[12] The large figure for "other capital" is driven by a highly leveraged US$510 million sugar project in Gaza.

Table 3-1

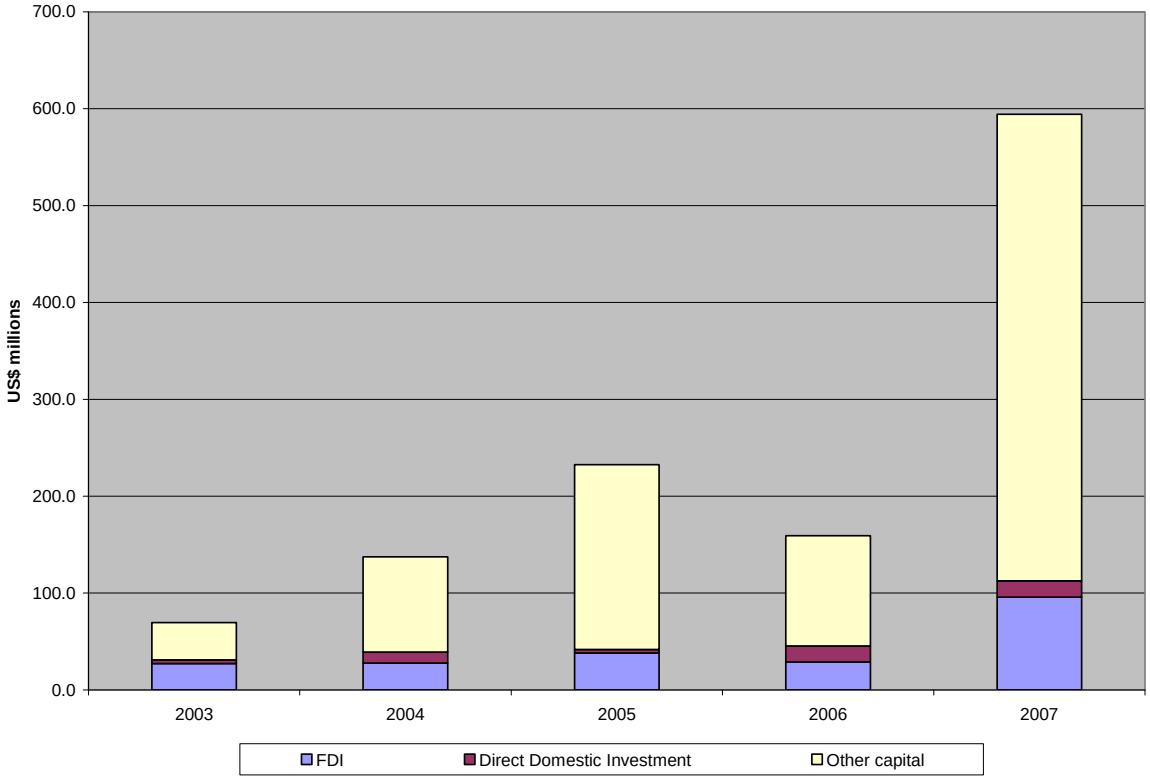
Authorized Investments in Agriculture by Year, Province and Type (USD '000)

		2003			2004			2005			2006			2007		
Sector	**Province**	**IDE**	**IDN**	**Other capital**	**IDE**	**IDN**	**Other capital**	**IDE**	**IDN**	**Other capital**	**IDE**	**IDN**	**Other capital**	**IDE**	**IDN**	**Other capital**
Agriculture & Agro-Industry	Cabo Delgado	50		4001				1,194								
	Gaza				100	20	1,933	16,200	378	1,643	80	52	3,018	35,203	6,055	475,043
	Inhambane	50	38	100	905	0		141	325		239	80		283		
	Manica	410	1,485	6,466	3,084	750	10,822	2,241		1,397	1,100		1,470	531		
	Maputo	14,322	58	3,571	4,019	1,367	3,464	4,344	598	107,829	6,226	1,468	15,380	49,801	6,369	1,144
	Nampula	8,000	26	12,466	1,443		558	50	50	663	0	6,032		50		250
	Niassa				2,305		13,000	1,117	143	66,075	10,000	2,000	68,000			
	Sofala	2,925	553		5,468	8,336	46,911	9,771	2,016	7,240	100	6,709	16,504			
	Tete				1,449		2,050	529			2,350	150				
	Zambézia	353	223	6,912	271	554	3,443	2,102	5	5,720	700	5	9,294		3,026	3,316
	TOTAL	**26,110**	**2,382**	**33,516**	**19,043**	**11,027**	**82,181**	**37,689**	**3,515**	**190,567**	**20,794**	**16,495**	**113,666**	85,867	15,451	479,753
Aquaculture & Fishing	Cabo Delgado				1,995	5	16,000							326		100
	Inhambane							329								
	Maputo		1,421	2,303										9,450	1,050	
	Nampula	1,000	50	50				175		175						
	Niassa														500	
	Sofala				5,000	372		50		170					10	1,800
	Tete		173	258	1,352	59					8,223					
	Zambézia	50		2,200	277											
	TOTAL	**1,050**	**1,644**	**4,811**	**8,625**	**435**	**16,000**	**555**	**0**	**345**	**8,223**	**0**	**0**	9,776	1,560	1,900
Combined, by type of investment		**27,160**	**4,026**	**38,327**	**27,668**	**11,462**	**98,181**	**38,244**	**3,515**	**190,912**	**29,018**	**16,495**	**113,666**	**95,643**	**17,011**	**481,653**
Combined, all types of investment			**69,513**			**137,311**			**232,671**			**159,179**			**594,307**	

Source: Author's computations from data provided by the Investment Promotion Center (CPI)

Note: Other capital = "emprestimos e suprimentos" (loans and aid)

Figure 3-1
Authorized Investments in Agriculture, by Year and Type (USD '000)



Source: Author's calculations from CPI data

Two major problems with the CPI statistics limit their value for monitoring trends in agricultural investment. First, authorized investment is not the same as actual investment. Some plans do not materialize, and those that do may be smaller or larger than planned. In addition, data on projects approved for a particular year provide little or no information on the timing of the investments. For example, CPI figures show a 20-fold jump in direct investment between 2006 and 2007, from $276.6 million to $5.76 billion, but the latter figure includes a $5 billion petroleum refinery project in Nacala. Yet news reports state that the refinery project is "expected to start operating within the next seven years."[13] Thus, the huge increase recorded in 2007 bears no relationship to actual investment that year.

To address this problem, and also to provide follow-up support to clients, CPI introduced a process of post-approval visits to a sample of investors each quarter. CPI provided for this study on the findings from recent visits to investors in Manica. Of 50 clients targeted for a visit, with projects that were approved between 2004 and 2007, 20 were either not traceable or not operating. Among the 30 clients with active operations, 12 had exceeded their employment plan, four had achieved their plan, and 14 fell short of plan at the time of the visits.

The second problem is that the breakdown by sector uses a broad classification with only two categories relating to agriculture: (1) agriculture and agro-industry, including forestry; and

[13] Source: http://allafrica.com/stories/200805160920.html, accessed May 27, 2008.

(2) aquaculture and fisheries.[14] The reports do not separate agro-industry from agriculture and provide no details by crop or product.

The CPI data on investment approvals gives a good picture of interest in Mozambique among investors. But it does not and probably cannot provide a solid basis for monitoring trends in actual investment in agriculture. Nonetheless, it would be useful for CPI to improve the quality of the data by compiling and disseminating greater detail on the composition of the proposed investments by sector and product. The value of the CPI data on approvals could also be enhanced by providing information to the public on findings from the post-approval visits in a format that will protect proprietary information.

FOREIGN INVESTMENT INFLOWS

The Bank of Mozambique (BdM) compiles data on foreign capital inflows for the balance of payments statistics. The data are obtained from documents filed by foreign investors, who must register inflows in order to qualify for later repatriation of dividends and capital. Thus, the BdM data provide a good picture of actual cross-border investment flows to complement the CPI data on investment approvals. Obviously, this source provides no information on investment by domestic enterprises.

As with the CPI data, foreign investment statistics compiled by BdM distinguish owners' equity capital from loans and supplementary capital. Technically, only the former component constitutes foreign direct investment (FDI). BdM also provides a breakdown by country of origin and by sector. The sector classification, however, is reported at a high level of aggregation. Specifically, there are just two lines relating to agriculture: one for Agriculture, Animal Production, Hunting and Forestry, and one for Fisheries. In addition, data on investment in agro-industry is lumped together with other manufacturing activities. BdM does not compile the data at finer levels of disaggregation. With appropriate modifications to the data entry process, and perhaps revisions to forms that are used to register foreign investment flows, it should be possible for BdM to compile statistics with greater detail on sectors and sub-sectors.

Despite a legal requirement for foreign investors to register capital inflows at BdM within 120 days of CPI approval, CPI officials have found that many clients fail to comply. This can occur because an investor simply overlooks the procedure, is badly advised by an agent, or chooses not deal with the extra paperwork. In an interview, BdM officials agreed that compliance is incomplete, and mentioned that they even try to seek out authorized investors who fail to register, to avoid disputes in the future about repatriation of dividends and capital. Despite the gaps in compliance, large investors almost certainly adhere to the law. Hence, the BdM data probably captures the lion's share of all foreign investments, and the trends are likely to be fairly accurate.

Table 3-2 summarizes the pattern of foreign investment recorded by BdM in the past five years. No regular trend in the data emerges. Between 2001 and 2007, total foreign investment (FDI plus associated capital inflows) varied between 1.6 percent and 8.3 percent of GDP, averaging 5.1 percent.

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[14] CPI statistics include seven other sector categories: industry; transport and communication; tourism and hotels; construction; mineral resources and energy; banking, insurance and leasing; and other.

Table 3-2

Foreign Investment by Sector, 2001 – 2007 (million US dollars)

Equity investment

Sector (INE classifications)	2001	2002	2003	2004	2005	2006	2007
Agriculture, Animal Husbandry, Forestry	4.3	27.3	14.8	1.7	3.1	0.5	28.1
Fisheries	1.7	1.9	9.9	6.9	4.2	0.0	-0.2
Extractive Industry (coal, petroleum, gas, minerals)	0.0	42.3	173.5	167.4	5.7	36.9	39.3
Manufacturing	194.1	212.3	108.9	0.3	1.3	47.3	39.1
Electricity, Gas, Water - Production and Distribution	1.2	53.0	11.3	0.0	0.0	0.4	2.0
Construction	10.6	4.4	2.3	10.9	0.3	0.0	2.0
Commerce	0.0	0.0	0.0	5.9	8.8	9.9	13.4
Hotels and Restaurants	2.9	2.2	0.3	2.3	12.4	4.7	3.4
Transport, Storage and Communications	0.0	0.0	0.8	29.3	2.6	6.8	5.0
Finance	0.0	0.0	6.1	7.6	1.9	5.3	33.7
Real Estate and Business Services	21.1	2.7	1.1	1.4	6.5	0.1	0.5
Public Administratino, Defence and Social Insurance	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Education	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Health and Social Action	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Port Services	0.0	0.0	0.0	0.0	12.6	0.0	0.0
Other Services	19.6	1.2	7.7	0.9	0.0	0.0	1.1
Total	255.4	347.3	336.7	234.6	59.8	111.8	167.3

Equity investment plus supplementary capital

Sector (INE classifications)	2001	2002	2003	2004	2005	2006	2007
Agriculture, Animal Husbandry, Forestry	4.3	27.3	14.8	1.7	7.2	-6.8	48.6
Fisheries	1.7	1.9	9.9	6.9	19.5	-2.5	-3.3
Extractive Industry (coal, petroleum, gas, minerals)	0.0	42.3	173.5	173.2	26.4	104.8	202.2
Manufacturing	194.1	212.3	108.9	4.7	-10.9	47.5	68.1
Electricity, Gas, Water - Production and Distribution	1.2	53.0	11.3	0.0	2.5	0.4	2.0
Construction	10.6	4.4	2.3	10.9	8.1	-2.8	2.1
Commerce	0.0	0.0	0.0	5.9	10.4	9.5	18.7
Hotels and Restaurants	2.9	2.2	0.3	2.3	10.8	4.5	2.9
Transport, Storage and Communications	0.0	0.0	0.8	29.3	-1.7	6.7	25.2
Finance	0.0	0.0	6.1	7.6	1.9	-7.4	34.6
Real Estate and Business Services	21.1	2.7	1.1	1.4	7.3	-0.4	0.5
Public Administratino, Defence and Social Insurance	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Education	0.0	0.0	0.0	0.0	1.3	0.0	0.0
Health and Social Action	0.0	0.0	0.0	0.0	-0.2	0.0	0.0
Port Services	0.0	0.0	0.0	0.0	25.2	0.0	24.6
Other Services	19.6	1.2	7.7	0.9	0.0	0.0	1.0
Total	255.4	347.3	336.7	244.7	107.9	153.7	427.4

Source: Bank of Mozambique

Investment in agriculture, excluding fisheries, averaged 4.0 percent of total foreign investment, and 0.8 percent of GDP from agriculture. Including fisheries, the corresponding figures are 7.3 percent of total foreign investment and 1.2 percent of sector GDP. This level of foreign investment is too small to account for more than a fraction of growth in agriculture as estimated in the national accounts data, though it is clearly an important source of growth for particular sub-sectors such as sugar and tropical fruits.

COMMERCIAL BANK LENDING TO AGRICULTURE

The Bank of Mozambique also compiles regular data reports on commercial bank credit to the economy, with breakdowns by sector, type of loan, and province. In this case the sector categories provide reasonably good detail. In particular, credit to agriculture includes separate entries for tea, sugar, cashew, sisal, copra, cotton, and other crops, as well as livestock, forestry, and fisheries. In addition, the data for manufacturing separately records lending for agro-industry, which covers food processing, drinks and tobacco processing. On loan use, BdM usefully distinguishes between working capital credit and investment credits.

Most of the tabulations show credit outstanding at the end of a given time period; the change from one period to the next is therefore a measure of the net flow of lending during the period. BdM also provides information on gross new lending, repayments, and net lending, by broad sector classification[15] and type of loan.

This data set can be an important basis for monitoring trends in agricultural investment, but only to the extent of investments financed by bank loans. This is a serious limitation, given that enterprise surveys in Mozambique and other countries in the region show that businesses rely far more on self-finance and retained earnings than on bank loans, due to problems of access to credit and high interest rates (as well as risk aversion, which the surveys usually fail to mention). Hence, data on bank loans cannot provide a measure of overall investment in agriculture, even among formally registered enterprises.

Another limitation is that the sector classifications may be problematic. One well informed source strongly cautioned that many of the loans recorded as going to agriculture are actually used for other activities such as transportation, marketing, processing, or trading. This is partly a reflection of the fact that agricultural enterprises are often engaged in a variety of related activities. In addition, the tax code creates a strong incentive for corporate groups to use creative accounting to record profitable activities as arising from agriculture (see section IV). Further field inquiries might help to clarify the extent to which these considerations undermine the value of this data set for tracking bank-financed investment in agriculture.

Keeping these issues in mind, Table3-3 summarizes the data on commercial bank lending to agriculture over the past five years.

[15] This tabulation from BdM has only one line for agriculture overall, and one line for industry overall.

Table 3-3

Bank Credit by Sector, 2003–2007 (million meticais)

Economic Activity	Dec-03		Dec-04		Dec-05		Dec-06		Dec-07	
	Investment Credit	Total Credit	Investment Credit	Total Credit	Investment Credit	Total Credit	Investment Credit	Total Credit	Investment Credit	Total Credit
1. AGRICULTURE	**826.3**	**1,610.0**	**694.3**	**1,363.1**	**683.6**	**1,611.1**	**435.3**	**1,470.7**	**451.4**	**1,836.2**
1.1 Tea	-	1.1	-	1.1	-	7.0	-	10.9	-	51.8
1.2 Sugar	253.7	434.0	244.1	394.0	145.4	441.6	69.7	508.8	140.7	507.4
1.3 Cashew	22.5	205.0	3.8	35.9	3.0	79.3	3.5	84.0	19.0	145.6
1.4 Sisal	-	-	-	-	-	-	-	-	-	-
1.5 Copra	29.3	29.3	16.4	22.2	13.5	21.3	2.0	10.3	17.9	92.5
1.6 Cotton	214.2	509.7	257.2	621.5	363.4	713.6	166.5	480.5	135.8	728.6
1.7 Other	293.4	417.7	159.5	275.0	158.3	347.4	193.6	376.3	138.0	310.4
2. ANIMAL HUSBANDRY	48.7	54.3	71.2	76.0	92.8	111.9	38.4	41.4	43.7	57.5
3. FORESTRY	4.7	14.3	3.8	31.7	38.3	51.7	39.4	125.9	12.6	54.6
4. FISHING	43.9	264.3	111.3	366.7	353.9	849.9	491.0	901.9	406.5	861.0
5. EXTRACTIVE INDUSTRY	260.5	270.6	260.8	270.0	474.7	625.9	461.2	1,214.0	339.4	1,027.9
6. MANUFACTURING	1,099.6	2,056.3	875.8	1,724.0	716.4	1,799.5	785.2	2,268.5	967.2	2,952.1
6.1 Food, Beverages, Tobacco	514.3	942.0	383.7	713.9	323.9	840.0	320.9	1,153.0	378.1	1,749.6
6.2 Textiles, garments, footware	2.8	87.1	32.9	55.8	33.5	39.3	9.9	24.9	6.4	14.6
6.3 Chemicals	10.1	80.8	3.2	21.3	17.6	76.9	17.0	40.1	26.5	69.7
6.4 Metalurgy	149.0	299.2	148.5	291.6	228.5	389.0	179.9	198.5	115.3	164.7
6.5 Other	423.3	647.3	307.5	641.2	112.9	454.2	257.5	851.8	440.8	953.5
7. ELECTRICITY, GAS, WATER	16.9	28.4	17.3	51.7	46.0	159.0	297.2	361.4	478.0	846.4
8. CONSTRUCTUION AND PUBLIC WORKS	312.5	739.4	125.1	492.6	335.0	922.5	602.8	1,443.9	560.8	1,713.8
9. TOURISM	181.8	494.1	323.6	392.2	590.5	844.5	608.2	929.4	520.9	996.0
10. COMMERCE	600.4	2,083.5	752.4	2,575.1	1,951.2	6,255.5	2,193.0	7,020.0	2,759.2	7,292.9
11. TRANSPORT AND COMMUNICATION	549.8	768.1	566.5	818.0	917.6	1,186.6	1,094.2	1,576.2	2,005.4	3,633.9
12. FINANCE	0.3	212.7	0.3	214.3	87.8	565.3	138.9	295.4	195.4	265.8
13. OTHER	2,842.7	5,068.0	2,738.3	4,666.7	3,248.0	5,505.8	4,121.3	7,974.7	5,002.1	8,297.7
CREDIT TO AGRICULTURE (1-4)	**910.5**	**1,929.8**	**867.3**	**1,824.2**	**1,168.7**	**2,623.7**	**1,004.0**	**2,540.0**	**914.2**	**2,809.3**
CREDIT TO THE ECONOMY	**6,788.2**	**13,664.0**	**6,540.7**	**13,042.0**	**9,536.0**	**20,489.2**	**11,306.2**	**25,623.4**	**13,742.6**	**29,835.7**
SHARE TO AGRICULTURE	**13.4%**	**14.1%**	**13.3%**	**14.0%**	**12.3%**	**12.8%**	**8.9%**	**9.9%**	**6.7%**	**9.4%**

Source: Author's calculations using data from the Bank of Mozambique

In nominal terms, total credit to agriculture (broadly defined) rose by 72 percent between December 2006 and December 2007 after oscillating around a flat trend the previous four years. The jump in 2007 resulted from a large increase in credit to cotton, copra, cashew, and tea. Adjusted for inflation, total credit to agriculture grew at an average rate of just 3.5 percent for the five years as a whole, far less than the growth rate of agricultural GDP. Lending to agriculture also fell short of overall bank lending to the economy, declining from 11.4 percent in 2003 to 8.6 percent in 2007. At the end of 2007, the largest recipients of lending to agriculture were fisheries, cotton, sugar, other, and cashew.

Narrowing the focus to investment credit, lending credit to agriculture was slightly lower in 2007 than in 2003 in nominal terms, and down by nearly one-third in real terms (after adjusting for inflation). Investment lending declined for every sub-sector except forestry and fisheries. Agro-industry shared in the sharp decline, with investment credit falling by half in real terms over this period. In relative terms, agriculture broadly defined accounted for 6.7 percent of total investment credits outstanding at the end of 2007, which is less than half the figure of 13.6 percent in 2003. Hence, agriculture's share of bank lending for investment declined much more than its share in GDP. By sub-sector the largest amounts of investment credit outstanding in December 2007 were for fisheries, "other," cotton, and sugar.

Another perspective is that investment credits for agriculture amounted to just 2.3 percent of agricultural GDP in 2006 (latest data year); if fisheries are excluded, the figure is even lower, at 1.2 percent. Combining the figures on foreign investment (from BdM data) in agriculture and bank lending to agriculture, one can account for investments amounting to 3.5 percent of GDP generated by agriculture (or 2.0 percent excluding fisheries). This presents a puzzle: with such low investment relative to GDP in the sector, how is it possible that GDP in agriculture has been growing by 7.7 percent per year over the past five years? Either productivity in agriculture has been soaring, which is implausible given available evidence, or these two data sources omit the bulk of investment in agriculture, most importantly investment by smallholders, which will be addressed shortly.

PRIVATE INVESTMENT IN THE NATIONAL ACCOUNTS

There are three approaches to measuring GDP: the sum of value added by sector; the sum of incomes generated in domestic production activities; and the sum of domestic expenditures on final goods and services. The third involves estimating private consumption expenditure (C), gross private capital formation (I), government expenditure on goods and services (G), and net exports (X-M), giving the well known identity: GDP = C+I+G+(X-M).

In Mozambique, as in most countries with weak data systems, the main source of GDP data comes from estimates of value added by sector. A senior official at the National Institute of Statistics (INE) explained that INE derives value added estimates from data on output by sector and benchmark ratios of value added to output. INE obtains output data for 152 product categories, including 9 in agriculture, but value added ratios are applied to only four agricultural aggregates: crops; animal production; silviculture; and fisheries. INE does not tabulate value added data by type of crop.

Our immediate interest, though, is in the private investment term (I) from the expenditure approach, and in particular private investment in agriculture. INE estimates private investment mainly from data on capital goods imports and construction activity, giving a measure that is far from comprehensive. Furthermore, INE does not compile information on private investment by sector of destination or end use.[16] Hence, the national accounts data cannot be used to measure investment *in agriculture.* It is worth reviewing more closely the systems used to compile national accounts data to see if it might be possible to obtain more detailed information on investment by sector of destination.

Another avenue for obtaining detailed data on private investment, at least among registered enterprises, is from income tax returns. Business taxpayers need to report capital expenditures to support any claims for depreciation and investment allowances. According to an INE official, discussions are ongoing with the tax authorities about accessing these records for statistical purposes. Legal restrictions on the release of tax information must be honored, but this is not an insurmountable barrier. Statistics agencies in many countries have devised procedures to obtain tax data for statistical purposes while fully adhering to secrecy provisions of the tax law.[17] The quality of data from tax records, of course, is dependent on the extent of tax compliance by registered businesses. Nonetheless, it may be the best information available on formal sector investment in agriculture.

TRABALHO DE INQUÉRITO AGRÍCOLA

The data sources cited above provide virtually no information at all on investments made by small and medium scale producers, even though this group accounts for an overwhelming majority of farm units, most of the area under cultivation, and large fraction of agricultural output. However, the Ministry of Agriculture (MinAg) and INE collect data on exactly this group from an Agriculture Survey (TIA) that has been conducted each year since 2002. The survey covers approximately 6000 households selected from a nationally representative sample frame.[18]

Due to time constraints it is not possible to examine TIA data for this paper, but the questionnaire shows what information is generated from the surveys, as well as data gaps relating to the subject at hand. On the positive side, the TIA surveys provide data on output by type of crop with a very refined level of detail and a considerable amount of information on numerous types of physical, human, and knowledge capital. The information can be reported by farm size and by region.

To be more specific, the TIA data on capital stock includes:

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[16] INE's standard data presentation, as posted on their website, does not even provide a breakdown of Gross Fixed Capital Formation between public sector and private sector investment.

[17] In early years of national accounts development in the United States, beginning in 1934, "the only source data on the economy that were close to comprehensive were Internal Revenue Service (IRS) tax data…." From J. Steven Landefeld, Eugene P. Seskin and Barbara M. Fraumeni (Spring 2008), "Taking the Pulse of the Economy: Measuring GDP," Journal of Economic Perspectives, Volume 22 Number 2, p. 195. The authors also note that there are technical problems in converting accounting data on investment, from the tax returns, into measures that fit the national accounts concepts.

[18] Some of the principal results from the TIA, and other data on agriculture, fisheries and forestry, can be obtained from: http://www.ine.gov.mz/sectorias_dir .

- Area of land cultivated, by crop;
- Number of fruit trees, by crop, and number of cashew or coconut trees;
- Number of livestock, by type;
- Use of equipment, including tractors and pumps, and use of irrigation, by type;
- Use of animal traction, by type;
- Education and health attributes of the family;
- Access to extension agent visits, and knowledge of crop rotation practices;
- use of improved seeds, by type, and use of purchased inputs such as fertilizer, fungicide, herbicide, insecticide (which may be considered as knowledge capital);

The survey instrument has two only questions that directly elicit information on investment, covering new plantings of cashew and coconut trees, and acquisition of livestock. MinAg could also obtain additional estimates of net investment by tabulating year-to-year changes in the various stocks of capital, subject to sampling error.[19] A better approach, though, would be to include in the questionnaire some additional direct questions on investment.

On balance, the TIA reports provide rich data on production by small and medium sized farms (but not large farms). It also provides data on some types of investment, and allows for estimates on other changes in the capital stock, again for small and medium sized farms. MinAg should use the TIA to develop regular reports on investment to make better use of the available information, and also to create a demand for improvements in this area.

In 2009-2010, MinAg and INE will carry out a new round of the Census of Agriculture and Animal Husbandry (CAP), which was last conducted 10 years earlier. It would be extremely useful to design the CAP survey to include direct questions on various types of investment in agriculture, and to harmonize these questions with the TIA survey. Neither TIA nor CAP, however, provide data on forestry or fishing.

ENTERPRISE SURVEYS

INE conducts an Annual Enterprise Survey (Inquérito Annual às Empresas, or IAE) of registered businesses, covering enterprise characteristics including types of output, levels of production and employment, labor costs, input costs, and investment in buildings, machinery and equipment, vehicles, and other capital goods. By law, every enterprise is obligated to respond to the questionnaire.[20] In reality, INE reports that the response rate is very low. In addition, INE carried out special business surveys in 1998, 2002 and 2006 in conjunction with CTA, but with very limited coverage. These instruments do not provide systematic data on private investment, and even less on investment in agriculture.

With support from the Millennium Challenge Corporation and USAID, INE plans to undertake an expanded Enterprise Survey in 2008 covering one hundred percent of registered enterprises

[19] For most variables the sampling error should be small enough to give useful estimates. Livestock and animal traction are an exception because their use tends to be very localized; hence, TIA may show large variations from year to year due to sampling error.

[20] Lei 7/96 de Julho de 1996.

having 30 or more employees in all sectors and geographic locations, and a stratified random sample of smaller firms in provincial capitals and other municipalities.[21] The survey design therefore includes large agricultural enterprises as well as agro-processing industries, while excluding small and medium agricultural units that are covered by TIA.

The new IAE will gather data on production, exports and employment, as well investment, assets, liabilities and credit. If this instrument is to be implemented on a regular basis, it will be a prime source of data for monitoring private sector development, including agriculture and agro-processing. The investment module ought to provide a disaggregation by type of capital formation. For agricultural enterprises, this would ideally include investment in equipment, irrigation, other farm works, commercial trees, and livestock, as well as basic categories covered by the IAE. It would also be useful to coordinate the investment questions for agriculture in the enterprise survey with those in the TIA and the CAP, as far as possible.

[21] Directorate for Sectoral and Enterprise Statistics, National Institute of Statistics, *National Enterprise Survey Project: A Proposal Submitted to the Millennium Challenge Corporation and USAID*, February 23, 2007. The total sample size will be approximately 1500 enterprises.

4. Constraints on Private Investment in Agriculture

"Investment" in agriculture encompasses many types of assets, including

- Machinery and equipment;
- Land clearance for agricultural production;
- Land and soil improvements,
- Irrigation systems;
- Tree crop orchards;
- Livestock and poultry;
- Agriculture technology, knowledge of good practices, and market information; and
- Education, skills, and health for agricultural workers and managers.

There is a substantial body of knowledge on impediments to investment in agriculture in developing countries globally,[22] but no systematic studies on this topic have been done to date for *Mozambique*. The present note provides a preliminary analysis of the issue, drawing on a review of related literature and interviews in Mozambique with experts and practitioners (see Annex 1 for a list of contacts).

This section of the paper places in the issue in perspective by summarizing some general determinants of private investment, and then outlines the most widely cited constraints affecting private investment in agriculture in Mozambique.

INVESTMENT FUNDAMENTALS

Investments are generally motivated by the *expected returns* relative to perceived *risk and uncertainty*. The prospective returns and risks, as viewed by potential investors, are determined primarily by market conditions. At the same time, public sector policies and programs play an extremely important role in shaping market conditions and prospects for successful private investment. Exhibit 4-1 lists general policies that address the underlying determinants of investment. Economic growth, however is driven not only by the level of investment, but also by

[22] The World Bank recently produced three major reports covering this issue: *World Development Report 2008: Agriculture for Development (2007)*; *The Rural Investment Climate: It Differs and It Matters* (2006); and *Agricultural Growth for the Poor: An Agenda for Development* (2005).

rising productivity. Hence, measures to promote the development of agriculture, or any other sector, should be designed to stimulate *efficient and competitive* investment. Interventions that foster inefficient and uncompetitive projects via subsidies or protection can work at cross purposes to the ultimate goals of development, even if they elicit a positive investment response. Exhibit 4-2 outlines some generic approaches to facilitate improvements in investment efficiency and productivity.

Exhibit 4-1
General Policies to Promote Investment

What policies can be used to address the underlying factors motivating investment decisions in agriculture and other sectors? First, investment returns can be enhanced by policies aimed at:

- Improving and expanding infrastructure: transportation, telecommunications, energy, and water.
- Maintaining macroeconomic stability to reduce risk premiums throughout the supply chain.
- Investing in education and health services.
- Improving knowledge of market opportunities and appropriate technologies.
- Pursuing financial market reforms to expand access to, and reduce the cost of financing.
- Reducing barriers to trade, to reduce input costs and improve access to regional and global markets.
- Reducing red-tape through deregulation, simplification of procedures, and civil service reform.
- Maintaining a predictable tax system with moderate effective tax rates and professional tax administration.
- Establishing laws and institutions to control corruption (which is a heavy implicit tax on business).

Governments can also stimulate investment by reducing risk and uncertainty, through policies to:

- Maintaining macroeconomic stability (again), with low inflation, a sustainable budget deficit and debt profile, and a reasonably stable real exchange rate.
- Improving the dependability of infrastructure services.
- Strengthening institutions to protect property rights, enforce contracts and control crime.
- Eliminating as far as possible bureaucratic discretion in the implementation of laws and regulations affecting investments and business operations, including tax laws.
- Ensuring repatriation of capital and profits from foreign investment, without restrictions.
- Minimizing political risk by respecting human rights, establishing transparent and participatory governance, and developing effective processes for dispute resolution.

Exhibit 4-2
General Policies to Improve Productivity

Economic principles suggest that the following policies can contribute to enhancing productivity, as a central feature of growth dynamics:

- Allowing resource allocation decisions to be determined primarily through market mechanisms, to harness the power of personal initiative and self-interest.
- Investing in human capital, including scientific, technical, and managerial education.
- Enhancing specialization and scale economies by improving transportation and communications infrastructure and facilitating production for the export market.
- Strengthening competition by reducing trade barriers and eliminating legal and administrative barriers to business entry and exit.
- Creating a policy environment to attract direct foreign investment as a source of technical and managerial innovation.
- Facilitating the introduction, adaptation, and development of more productive technologies.
- Reducing economic distortions by establishing a modern tax system based on even-handed treatment of alternative investments.
- Avoiding negative real interest rates, so that the price system channels financial resources to efficient investments.

BARRIERS TO PRIVATE INVESTMENT IN AGRICULTURE

Over the past fifteen years the Government of Mozambique has implemented wide-ranging reforms to strengthen market forces, improve the business environment, and attract private investment into the country. The reforms have been highly successful in many respects, as evidenced by huge mega-project investments in extractive industries, resuscitation of the sugar industry, and high overall economic growth over the past decade. Nonetheless, there are still many serious impediments to private investment that affect all sectors of the economy. These barriers have been scrutinized in many reports and discussed repeatedly in public forums, most notably the annual Private Sector Conferences organized by the CTA. The severity of the problems is seen most clearly from Mozambique's low score on widely cited global rankings. In particular, the World Bank ranks Mozambique 134th out of 178 countries on the overall Ease of Doing Business index for 2008, while the World Economic Forum ranks Mozambique 128th out of 131 countries on its Global Competitiveness Index for 2007-2008.

Several enterprise surveys have been conducted to obtain data on private sector development and identify barriers to doing business in Mozambique. For example, a World Bank survey of almost 200 manufacturing firms in Mozambique in 2002 found the following "key constraints to investment and productivity":[23]

- Lack of access to affordable finance;
- An unreliable and inefficient legal system;

[23] John Nasir and others, *Pilot Investment Climate Survey: Mozambique's Industrial Performance and Investment Climate,* World Bank, August, 2003.

- Regulatory and administrative barriers to doing business, particularly involving import/export processing, labor regulations, and land use rights;
- High tax rates and difficulties with tax administration;
- Poor infrastructure, especially for power and transport;
- Corruption.

A replication of the survey in 2006 by the Ministry of Planning and Development found the greatest obstacles to "firm performance and growth" to be the cost of credit, macroeconomic instability (then a serious problem), and access to domestic credit.[24] The World Bank is currently completing a new Investment Climate Assessment for Mozambique covering 600 firms, again focused on manufacturing. Preliminary findings indicate that the three leading problems this time are competition from informal enterprises, lack of access to affordable finance, and poor electricity supplies.[25]

Similar problems undoubtedly afflict investment in other sectors. But the principal constraints faced by *rural* investors can be quite different from those seen by urban enterprises.[26] A recent KPMG/Mozambique survey of more than 600 enterprises in 10 sectors and six provinces shows that "critical factors" for the business climate do indeed differ by region and by type of economic activity.[27] Of the five leading problems cited by manufacturing enterprises (corruption, bureaucracy, illegal imports, the crime level and taxes) only one item, taxes, is also found on the list of five leading problems in agriculture and fisheries (inflation, interest rates, corruption, taxes, and labor laws).

From the field work conducted for the present study, three central constraints to private investment in agriculture were highlighted in virtually every interview: land use rights, infrastructure, and affordable finance.[28]

Land Use Rights

Land in Mozambique is owned by the state, as a Constitutional requirement. Hence, instead of land ownership, investors obtain land use rights (DUATs), which bear a duration of 50 years, and are renewable. Problems with these DUATs were mentioned prominently in virtually every interview, and often cited as the number one constraint to investment in agriculture. Interestingly,

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[24] National Directorate of Studies and Policy Analysis, Ministry of Planning and Development, *Enterprise Development in Mozambique: Results Based on Manufacturing Surveys Conducted in 2002 and 2006*, Discussion Paper No. 33E, October 2006, p. 14.

[25] World Bank presentation to Private Sector Working Group meeting of donors, June 10, 2008, at USAID.

[26] World Bank, *The Rural Investment Climate: It Differs and It Matters* (2006), which is an overview of pilot rural investment climate assessments in six countries: Sri Lanka, Nicaragua, Tanzania, Indonesia, Benin, and Ethiopia.

[27] KPMG/Mozambique, *Índice de Ambiente de Negócios em Moçambique/Business Confidence Index*, No. 19, 2008.

[28] See the appendix for the list of contacts.

CPI reports that the current process ultimately works, as investors do succeed in getting DUATS. Yet the process is difficult and lengthy, sometimes stretching over several years. Also, rural DUATs may be contested unexpectedly by citizens claiming prior rights to the land. These problems add to the cost and uncertainty of commercial investment in agriculture.

Smallholders face an opposite problem in that commercial investors often negotiate land use rights with local leaders who bargain away traditional tenure arrangements. Lacking secure long-term rights to land, smallholders have little incentive to pursue long-term investments, including improvements in soil quality, development of irrigation systems, or planting long-maturing tree crops.

Rural DUATs are not freely tradable; such transactions involve a bureaucratic process of official approval. As a result, rural land cannot be used as collateral for loans. The restriction also severely hampers development of a rural land market, which is the simplest and most effective mechanism for allocating land to uses with the highest productivity.

The DUAT process also invites hoarding of land by wealthy or well connected speculators. This problem arises because DUATs are issued on the basis of proposed projects and can be retained as long as the concessionaire implements development (such as farm works or buildings) on a portion of the land.[29] In the absence of a serious tax on property (including land-use rights), investors have a strong incentive to claim far more land than they intend to use. If DUATs become freely tradable, the holders will be in a position to profit handsomely, at virtually no cost.

The obvious solution to this problem is to impose a meaningful property tax that will discourage idle land holdings, at least in areas designated or zoned for medium and large scale commercial investments. Restricting tradability is a poor substitute for creating an effective market with appropriate incentives for productive land use.[30]

Infrastructure

Infrastructure deficiencies are a pervasive constraint to investment in agriculture. The limited availability and poor quality of rural roads and bridges, electricity supplies, marketing and storage facilities, ports, railroads, and irrigation works greatly increase the cost of establishing and operating commercial agriculture enterprises, while simultaneously diminishing access to lucrative national, regional and global markets for products of agriculture and agro-industry. Very large investors can overcome the problems by investing themselves in infrastructure

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[29] Notwithstanding this provision, many concession holders fail to protect use rights by developing a portion of their land. The Club of Mozambique reports that 95 out of 287 land concessions in Maputo Province were cancelled by the government in 2007. See Club of Mozambique, 2007 *Mozambique Year in Review*, page 9. According to some sources, this crack-down was politically motivated. Regardless of the motivation, the action demonstrated that many land concessions are not being used productively – and that land use rights can be precarious.

[30] For a more complete set of recommendations on the land issue, though not focused on agriculture, see John Bruce, *Land Use Rights for Commercial Activities in Mozambique*, Nathan Associates, USAID/Mozambique Trade and Investment Project, April 2007 (http://www.tipmoz.com/page.php?cat1=117&cat2=262&cat3=525.)

development, though at high cost. For smaller agricultural enterprises, and especially family farms, the lack of supporting infrastructure is often a prohibitive impediment to development.

The government, itself, faces tight constraints in funding and implementing projects to expand and improve (and maintain) core infrastructure to support agricultural development. Public expenditure for this purpose competes for a limited supply of budget resources with all other public sector exigencies, including other public works projects and other spending requirements serving agriculture. One key to stretching the public purse for infrastructure development is to pursue public-private partnerships wherever possible, as the government has done for ports, railroads, and the Maputo-Witbank highway. This approach is also being pursued now for tourism development in some areas. Another obvious approach is to strengthen public procurement procedures in order to get the best value for money.

The World Development Report for 2008 (chapter 4) notes that many developing countries have starved expenditure on rural infrastructure in order to allocate more funds to subsidizing inputs for farmers. This approach is politically expedient, but in most circumstances it is detrimental to the goal of sustainable agricultural development because well targeted spending on infrastructure has a much higher payoff. Given the envelope of funding for infrastructure in support of agriculture, the government also has to make hard decisions by type of project and location. As far as possible, this decision should be based on an appraisal of costs and benefits among various options. An objective analysis is likely to indicate a concentration of rural infrastructure projects in geographical areas with a relatively high population density and high potential for agricultural development.

Finance

As mentioned earlier, enterprise surveys commonly identify the lack of access to affordable finance as a leading constraint to private sector development in Mozambique. [31] Most surveys concentrate on manufacturing enterprises, but the problem is far worse in agriculture due to an array of structural constraints particular to the sector. The factors involved include, among other things, the physical absence of banking facilities in rural areas; the lack of financial products tailored to the risks and cash flow patterns in agriculture; weak business management skills in all but the largest agricultural enterprises; inherently high transactions costs for providing traditional financial services in small doses to low density areas with poor transportation and communications infrastructure; and underlying problems with business environment which greatly increase the lending risks and limit the scope for viable lending to finance agricultural investments. As a result, few agricultural enterprises have access to finance, and those that do incur high interest rates in both real and nominal terms. Also, the problem of access to finance is not limited to loan services; agricultural enterprises also need convenient access to reliable and low-cost deposit services, transactions services, and insurance services.

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[31] This section draws on Nathan Associates, *Financial Sector Constraints on Private Sector Development in Mozambique*, technical report to USAID, June 2007, especially Chapter 4 on "Expanding Access to Credit" and Chapter 5 on "Expanding Access to Term Financing for Investment."

While blunt approaches to overcoming the finance constraint are superficially attractive, they are fundamentally incompatible with the need for a sustainable solution. In countries with weak institutions, like Mozambique, direct interventions are typically ineffective in both financial and developmental terms, and also inequitable due to capture by influential beneficiaries. This is the general experience with large subsidies for credit to agriculture; with requirements for banks to lend to agriculture (directed credits); with interest rate controls on lending to agriculture; and with the creation of government-run funds or specialized government banks providing low-cost loans to agriculture. If direct financial support from the government is to be on the agenda, it is better to package the funding as start-up grants for innovative investments, or loan guarantees structured to act as a catalyst to stimulate financing in new forms or to non-traditional clients, rather than using subsidies or controls that undermine the development of a sound and efficient financial system.[32]

Even though there is no magic bullet to solve these problems, many partial approaches merit attention. These include, among other things: facilitating supply chain financing, as used in the cotton and tobacco sectors (albeit with highly restrictive conditions); helping banks to learn and adopt non-traditional lending techniques appropriate to agricultural clients including the use of micro-finance methods and warehouse receipts; fostering the development of low-cost digital banking services for rural areas using mobile phones, smart-cards, point of service terminals, and local representative agents; facilitating the emergence of well managed credit cooperatives and village banks to serve local smallholders; and experimenting with innovative index-based methods for crop insurance. It is also essential to attack the fundamental constraints on bankability of agricultural investments by addressing other issues identified in this paper, not least being the problems relating to land use rights, infrastructure, and institutions for enforcing contracts and registering property. All these approaches are aimed at creating conditions for sustainable provision of financial services to agriculture.

Constraints Cited in Interviews

Other constraints were often cited by the experts and practitioners interviewed for the study: agronomic research and information systems; market-supporting services; labor problems; taxation; and fuel prices.

Agronomic Research and Information Systems

Many investments in agriculture involve familiar crops located in areas where agronomic conditions are known to be favorable. But it is essential, as well, to provide resource inventory information to facilitate investment in new crops, new varieties, and the expansion of established crops into new regions. Technical and geographic information on agronomic zones and crop potential is a valuable public good meriting strong government support. The government recently initiated an exercise to map out priorities for agricultural development throughout the country. This is a useful starting point, but at this point the mapping exercise will lack a scientific basis in

[32] Along these lines, USAID is planning to provide seed capital to support the creation of a new financial institution in Mozambique that will emulate the successful model established by the Latin American Agribusiness Development Corporation.

applied research on potential yields and appropriate techniques for growing various crops in diverse ecological conditions.

Applied research is a cardinal requirement for achieving a Green Revolution in Mozambique. Furthermore, evidence from other developing countries indicates that well managed public investment in agronomic research generates much higher rates of return than most other public expenditure programs to support agricultural development. A major survey of more than 400 studies on agricultural R&D found a median economic rate of return in developing countries of 50 percent per year; the survey included 44 studies on Africa, with a median return of 35 percent per year.[33] There is equally a need for more detailed knowledge and better public information – again, as a public good – on forestry potential (especially for lesser known species34) and fishing stocks.

Mozambique has severely under-invested in agronomic research and development. One basic problem has been the difficulty of recruiting and retaining top quality researchers at government salary scales. This argues for a public-private partnership model to decentralize and outsource the research via public grants. This appears to be the approach now being undertaken by the Ministry of Agriculture through National Institute for Agriculture Research (IIAM).

The dissemination of technical information – and market information – is just as important as the R&D. For proprietary technologies, including hybrid seed varieties, the private sector is the most efficient vector for dissemination to medium and large scale commercial farmers. It is more problematic, however, to depend on market incentives for disseminating technical information to very poor small farmers in widely dispersed rural areas. This includes information on open-pollinated high-yielding seeds, some of which have now been developed for conditions in Mozambique. Unfortunately, government-run extension services are typically ineffective in countries like Mozambique with weak institutions, very low budget resources, and very low pay for civil servants.[35] Here, too, a contracting out model may be the best approach, though the budget constraints dictate the need for careful prioritization. In addition, the expansion of IT and communications services into rural areas will become increasingly important as a source of information for farmers.

Market-support Services

Successful development of any supply chain requires convenient and affordable access to a variety of market-supporting services. These market synergies are often categorized in terms of industry "clusters." Potential agricultural investors in Mozambique find the necessary services are lacking or absent altogether. For example, many of the investors who came to Mozambique to

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[33] R.E. Evenson, "The Economic Impact of Agricultural Research and Extension," in B.L. Gardner and G.C. Rausser (eds.), *Handbook of Agricultural Economics*, North Holland: Rotterdam, 2001, pp. 574-622. See also Stephen Haggblade, *Returns to Investment in Agriculture*, Policy Synthesis No. 19, Food Security Research Project – Zambia, January 2007.

[34] Nathan Associates, *Improving the Competitiveness of the Timber and Wood Sector in Mozambique*, Technical report to USAID, October 2006.

[35] World Bank (2005), *Agricultural Growth for the Poor*, p. 65.

establish commercial farms after leaving Zimbabwe encountered debilitating problems due to the lack of support services to which they had ready access in Zimbabwe through the private sector, or farmers organizations, or government agencies. The problems included services relating to input supplies, storage, marketing, business management, equipment procurement and repair, transportation, accounting, and tax returns.[36] These service gaps not only diminish the prospective returns on investment in agriculture, but also tighten the finance constraint by impairing the "bankability" of investments.

Successful production of agricultural products for the export market, and even for the high-end domestic market, also requires adherence to established quality standards and phytosanitary standards. Large agricultural enterprises can deal with these requirements independently, as is the case with banana exports to South Africa. They can also provide the required services for smallholders involved in associated out-grower schemes, as done with cotton, tobacco and cashews.. Nonetheless, there may be a need for the government to facilitate the provision of, or access to internationally recognized facilities to apply, enforce and certify standards compliance, preferably through market-based or regional entities where possible. With few exceptions (such as veterinary documentation on foot-and-mouth disease) these services are very weak to non-existent.

Labor Problems

Several sources cited several problems relating to labor as further constraints to commercial investment in agriculture and value-addition through agro-industry. One problem is labor quality. Evidence from the commercial production of bananas, cotton, and cashews indicates very low levels of labor productivity in Mozambique, compared to competing countries.[37] While most agricultural labor involves unskilled work using simple techniques, there are pervasive problems with productivity and absenteeism, particularly for local hires who have obligations to their families and their own small farms. In part, this problem is likely to be associated with poor health of workers and their family members, including the high incidence of HIV/AIDS in Mozambique. Another labor constraint is the difficulty in finding workers in rural areas who have management skills or sufficient education to be trained as managers for commercial agriculture.

Two areas of labor regulation also pose serious problems for investors. First, the law imposes a high cost for reducing labor input, even if market conditions so warrant. To the extent that labor is effectively a fixed cost due to these restrictions, rather than a variable cost, potential investors see lower prospective returns and higher risks. Second, investors also face a considerable business risk relating to the minimum wage, which is determined each year through a centralized negotiation. In recent years the minimum wage for agriculture has been rising at double-digit rates. With a fairly stable nominal exchange rate the wage hikes translate into higher unit labor

[36] To be sure, these were not the only problems. Some of the farmers also made unfortunate business decisions in terms of location relative to transportation routes and water supplies, and the choice of crops relative to local ecological conditions. They also had problems with language. Source: interviews with four sources having first-hand experience working with the Zimbabwe farmers.

[37] Source: Field interviews.

costs, creating a competitive disadvantage in the export market, and also for competing against imports in the domestic market.[38]

Taxes

Complaints about taxation are common in enterprise surveys. Yet finding this cited as a constraint here is surprising, because the income tax in Mozambique is extremely favorable to agriculture. To be specific, agricultural enterprises face an income tax rate of 10 percent through 2010. The Code of Fiscal Benefits provides an 80 percent reduction in this rate through 2012 for approved investments in agriculture (including animal husbandry), leaving a tax rate of just 2 percent. For comparison, to the standard company tax rate in Mozambique is 32 percent. Taking into account investment credits and loss carry-forward provisions, well managed agricultural enterprises should pay no income tax at all.

Other aspects of the tax system, however, do cause problems for investors in particular circumstances. Thus, small enterprises who are subject to the simplified tax regime pay a flat tax of 5 percent on estimated gross revenue. This can be very onerous for enterprises that operate on a small profit margin. For agricultural enterprises and agro-industries with legitimate claims for VAT refunds, often lengthy delays in the refund process add to the costs and uncertainty of doing business in Mozambique.39

There is also a special 18 percent tax on the export of raw cashews; this reduces the cost of procuring raw nuts for cashew processors and provides funds for the Cashew Institute (INCAJU), with the aim of supporting development of the industry; but the tax also depresses the farm-gate price of cashews, impairs incentives for investment in replanting and orchard maintenance, and reduces cash income for many small farmers. There is also a levy of 2.5 percent on gross receipts of the cotton processors; this levy is also intended to feed back as support for development of the cotton sector, but industry leaders claim to get nothing of value in return for the payment.

Another complaint is that the import duty remission on capital goods (class K imports) provided under the Code of Fiscal Benefits is not effective for equipment that is purchased from traders rather than being imported directly by a farm enterprise. This dilutes the benefit of the incentive.

Two other tax issues are important to note, despite not being mentioned in any of the interviews. First, in economic terms, tariffs on imports of consumer goods and overvalued exchange rate both act as an effective (though hidden) tax on agriculture by increasing the price of inputs, including labor.[40] Second, a case can be made that the present tax incentives for agriculture are excessively generous, in that *profitable* agricultural enterprises should bear a fair share of the cost of public goods and services, like any other profitable business or income earner. At a minimum, the

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[38] This is a manifestation of the well known Dutch disease problem, which arises in classic form when large inflows of foreign exchange earned from mineral exports cause a real appreciation of the exchange rate, which undermines the competitiveness and market potential for many other productive activities.

[39] One hears unconfirmed stories about some potential investors who have turned away from Mozambique on this basis alone.

[40] The World Bank's *World Development Report 2008* emphasizes this point in a section on "Agricultural taxation in developing countries," p. 98.

government should put in place a system for monitoring and reporting the "tax expenditures" implicit in the fiscal benefits. This term is used to highlight the fact that a benefit in the form of tax remission is functionally equivalent to a subsidy in terms of its effect on the government budget and the profitability of an enterprise enjoying the benefit. The forthcoming public expenditure review should therefore include an analysis of tax expenditures.[41]

Fuel Prices

Rising fuel prices are obviously having an effect on the profitability of agricultural investments, especially for fishing and for commercial farms that are off the power grid and depend on generators for electricity. Considering that fuel prices have been soaring, it is surprising that this issue was not stressed more often. By the same token, there is little the government can do to mitigate the adverse effects of rising fuel prices, other than possibly providing temporary relief from the Fuel Tax to cushion the transition process. Fundamentally, the economy has to adjust to what appears at this time to be a lasting structural change in the global market for petroleum (though such market predictions often turn out to be wrong).

Other Notable Issues

The following issues confronting investors in agriculture were mentioned less often in the field interviews but are nonetheless worth noting:

- ***Red tape.*** We have already highlighted red tape relating to property rights, but there are also problems with bureaucratic delays in approving licenses, permits for expatriate workers, and customs procedures, among others. It would be very useful for some donor to work with the government to produce an Investor Road Map for agriculture.
- ***Natural resource management.*** Environmental sustainability is a major concern for resource-based industries, including agriculture. The issue is particularly salient in connection with the need for protection of "common" resources such as fishery stocks, natural forests, and water supplies.
- ***Disease and pest prevention.*** Diseases and pests affecting crops and animals can have a severe and widespread effect on agricultural production. This has been evidenced in recent years by problems affecting the production of coconuts, cassava, cashews, and poultry, not to mention devastating episodes of foot and mouth disease and mad cow disease in other countries. Large companies can deal with these problems internally, but the problem cannot be left to the private sector because externalities are pervasive. Yet the Ministry of Agriculture currently has a very limited budget for disease and pest prevention.
- ***Water rights.*** One great attraction for agricultural investment in Mozambique is the abundant supply of water in many regions. But ill-defined water rights create serious risks for investors. The problem can be summarized by an example: If an investor

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[41] One interesting example is the differential royalty charged on logs versus green sawn timber, which has created a loss of revenue and an incentive for logging companies to invest in sawing operations that actually reduce the value of Mozambique's timber exports. See Nathan Associates, *Improving the Competitiveness of the Timber and Wood Sector in Mozambique*, Technical report to USAID, October 2006, 26.

establishes a farm enterprise with an apparently reliable water source and later finds that another investor upstream is diverting a large amount of water, does the former enterprise have any rights to the water? How would a dispute be settled?

5. Implications for Public Expenditure Management

Mozambique has enormous potential for attracting private investment in agriculture, but there are also serious constraints that reduce the returns and increase the risks of investment in the sector at all levels, from family farms to large commercial estates. Some of constraints have immediate implications for public expenditure on agriculture, while others have important implications that do not involve expenditure programs, as such.

Looking over the list of constraints in broad terms, two familiar conclusions stand out. First, the central focus for government expenditure should be the provision of core public goods that are required to facilitate and stimulate investment in agriculture and growth of the rural economy. The list includes well-targeted infrastructure expenditures and greatly increased funding for agronomic research and extension services, preferably through public-private partnerships.

Second, public expenditures can serve as a catalyst for innovations that can be adopted by the private sector to overcome market imperfections pervading the rural economy. This includes measures to facilitate the development of supply chains, the introduction of innovative techniques for delivering low-cost financial services, and the establishment of private sector networks to deliver vital ancillary services to the agriculture sector, among others. The concept here is to support the development of more efficient market institutions in areas where the private sector supply response is laggard – but not to supplant the market through government programs that are likely to be unsustainable and inefficient.[42]

In addition to identifying constraints to private investment in agriculture and suggesting programmatic options to address the substantive problems, the paper has also reviewed the available data on investment at the sector and sub-sector level, and identified possible approaches to provide better data for monitoring the effectiveness of public expenditures on agricultural development. The recommendations include modifying data systems to obtain more disaggregated statistics on foreign direct investment and gross domestic investment, adding questions to the TIA survey to obtain better information on investment by small and medium scale agricultural enterprises, and coordinating the investment questions used in the TIA and the Annual Enterprise Survey.

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[42] This point is highlighted in World Bank, *Agricultural Growth for the Poor: An Agenda for Development* (2005), 55–59.

Appendix. Persons Contacted

Name	Organization
Ashok Menon Jim LaFleur	TIP project
Tim Born Christina De Voest John MacMahon Sergio Dista	USAID
Patrick Verissimo Pedro Arlindo	World Bank
Sylvie Tiller	FAO
Jake Walters	TechnoServe
Sergio Chitara	Consultant
Antonio Cruz	DNEP, MPF
José Morela	Banco Terra
Tracy Lloyd	IFC
Saide Dade	INE
Maria Esperança Jose Ribeiro Pinho	Banco de Moçambique
Gilead Mlay Ellen Payongayong	MSU/MinAg
Antonio Soto	GAPI-Robobank
Roberto Albino	CEPAGRI
Estêvão Langa	Mozambique Cotton Association
Sr. Boane	ShopRight
Nuno Maposse	CTA
Moisés Massinga (phone interview)	Mavimbi
José Suleman	IMF/Washington