

Madagascar Economic Update

December 2016



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Acronyms

CBM	Central Bank of Madagascar
ENSOMD	National Monitoring Survey on the MDGs
EPM	Enquête Périodique auprès des Ménages (Household Surveys)
FAOSTAT	Food and Agricultural Organization Statistical Data
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
IMF	International Monetary Fund
INSTAT	Madagascar Central Bureau of Statistics
JIRAMA	State-Owned Electricity and Water Company (Jiro sy Rano Malagasy)
MFB	Ministry of Finance and Budget
WB	World Bank

Foreword

We are pleased to share this edition of the Madagascar Economic Update, with a special focus section on Agriculture and Rural Development. The brief is part of a series of short economic updates produced by the World Bank on a biannual basis.

The first part of the Economic Update has the World Bank's assessment of recent economic developments and the outlook over the short to medium term. GDP growth is projected to have reached 4.1 percent in 2016, a pace faster than population growth. Growth has benefited from an expansion of the tertiary sector boosted by public works activities, and a recovery in the primary sector, as positive climatic conditions and higher vanilla prices have aided the agriculture sector.

Macroeconomic stability is evident with lower inflation and higher foreign direct investment flows, allowing for the accumulation of international reserves. And public finances have benefited from increased tax revenues arising from customs reforms and a reduction in subsidies to non-priority areas.

However, crucial reforms to state-owned enterprises are needed, most notably in the utilities sector. Progress in improving JIRAMA will not only increase the availability of public resources for spending on priority areas, but there will be a boost to the investment climate, further facilitating growth prospects.

Underpinning this progress is a sense that the administration has overcome some of the immediate consequences of the 2009-2013 crisis and can now focus on medium to long term development objectives. Given the country's substantial infrastructure and social development needs, the Government is seeking to secure additional financing for much needed public investments. Successful implementation will depend on whether stability and the reform momentum can be sustained.

The second part of this update focuses on Agriculture and Rural Development. There remains a sharp contrast in urban and rural development indicators. Rural households are poorer, illiteracy is more widespread, and malnutrition is higher. Approximately 80 percent of the population are engaged in agriculture, which provides the main source of income for households, albeit at subsistence levels.

To ensure Madagascar's growth prospects more inclusively benefit the entire population it will be crucial to improve the productivity of the agriculture sector. Key reforms include accelerating efforts to promote land security, improving the use of fertilizers and other agricultural inputs, and engaging more smallholder farmers in high value products.

We hope that the findings in this Economic Update will stimulate a healthy debate so that Madagascar can maximize its growth prospects in a climate of political stability. And that most importantly, these gains can set the country on a more inclusive growth path.

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¹ Further details on the project can be found here: <http://projects.worldbank.org/P151469?lang=en>

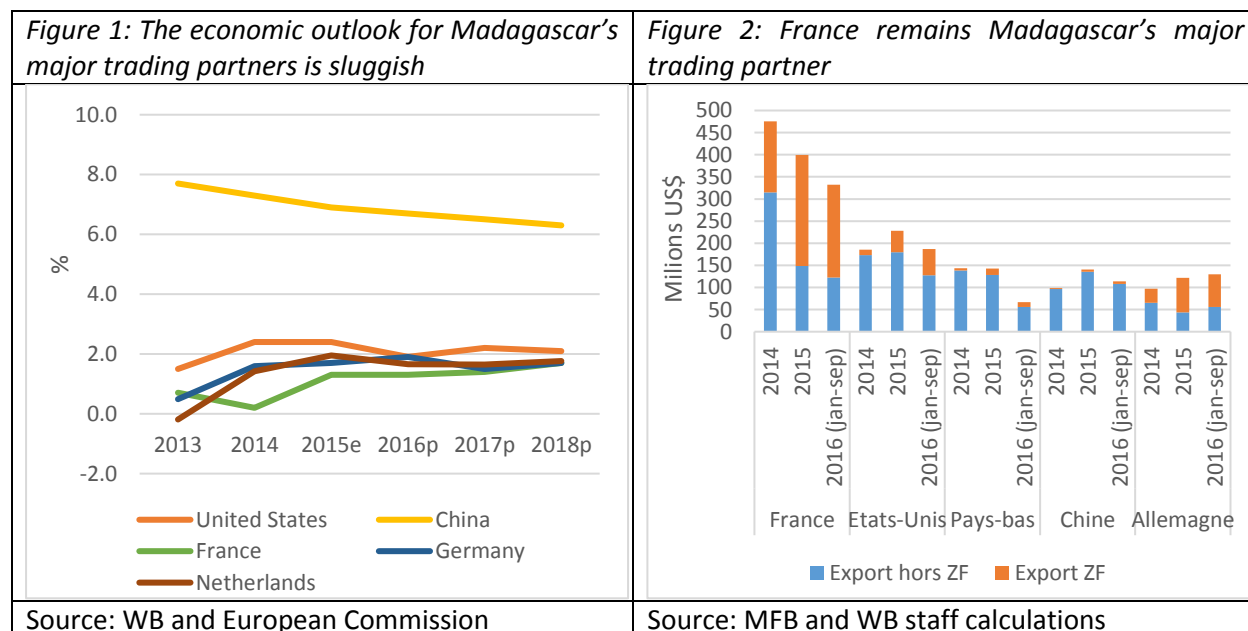
Part One: Recent Economic Developments

International and Regional Developments

The global economy is evolving in a context of low commodity prices, weak global trade and reduced capital flows. The 2016 global growth forecast has been revised downward to 2.4 percent against an initial forecast of 2.9 percent at the beginning of the year. This revised outlook is driven by weaker demand in the more advanced economies, where sluggish growth in China in particular has impacted global trade and the demand for commodities.

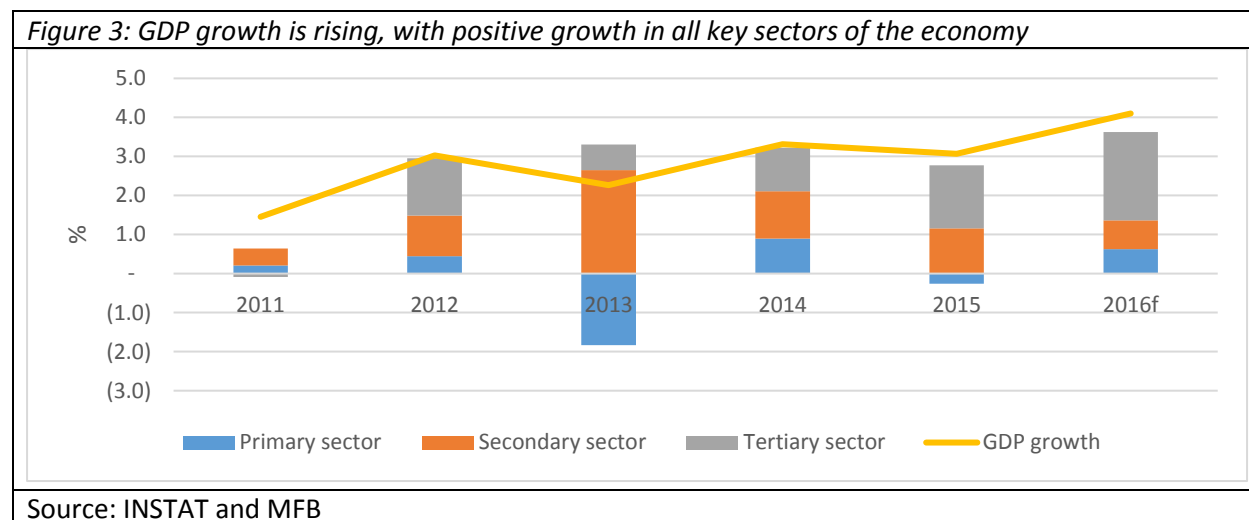
These global conditions, combined with political uncertainty and drought in certain parts of the region are affecting economic activity in sub-Saharan Africa. Overall, the growth forecast for the continent has been reduced to 1.6 percent, the lowest level in 20 years. The growth trajectory diverges significantly between countries. Major exporters of natural resource commodities such as Nigeria, Angola and Chad have been most affected, while economic activity in importing countries such as Mauritius, Rwanda and Kenya has remained strong.

The Malagasy economy may be subject to changing demand from trading partners and commodity price volatility. Madagascar's largest trading partner is France, although trade levels have been declining. Other important trading partners include the United States, China and European Union countries such as the Netherlands and Germany. Lower commodity prices have presented mixed fortunes for Madagascar. On the one hand, as a net fuel importer lower oil prices have benefitted the economy. On the other hand, lower nickel prices have affected production and export values. These trends highlight the importance of Madagascar continuing with reforms and policies to promote competitiveness, while also improving sources of internal growth through enhancing productivity in key sectors such as agriculture.



The Real Sector

In 2016 the economy is projected to have grown at a faster pace than population growth. GDP growth is estimated to have accelerated to 4.1 percent in 2016. This puts GDP growth per capita on a positive path, in contrast with the average growth rate of 2.6 percent of GDP during the period 2011-2015.² All key sectors in the economy are contributing to this estimated level of positive growth.



The tertiary sector in particular expanded in 2016.³ The tertiary sector is estimated to have contributed 2.4 percentage points to GDP growth in 2016, compared with 1.6 percentage points the year before. This expansion has been driven by an increase in public works, transport and commerce activities. Tourism is expected to add a further boost. While non-resident visitors to Madagascar declined by 4.3 percent in the first eight months of 2016 compared to the previous year, this number is expected to have picked up in the second half of 2016.

The secondary sector slowed due to a retraction in the extractive industries.⁴ Madagascar's mining revenues have historically been driven by nickel from the Ambatovy mine, following extraction in 2012.⁵ However, nickel prices have been on a declining trend, from an average of nearly 17,000 US\$/mt in 2014 to less than half that value in the first half of 2016 at 8,700 US\$/mt, as a result of the global downturn in commodity prices. The slowdown in the mining industry has only been partially offset by modest growth in free zone enterprises and food and beverages, which are benefitting from increased competition in the local market.

The primary sector is experiencing a recovery, registering a growth of 2.2 percent in 2016 compared with the previous year.⁶ Good rainfall has contributed to an increase in rice production in 2016 by 2.5 percent compared to the previous year.⁷ The agriculture sector was further boosted by higher vanilla

² Draft Budget Law for 2017. Madagascar's annual population growth rate is estimated at 2.78 percent.

³ The tertiary sector refers to the supply of services to consumers and businesses.

⁴ The secondary sector refers primarily to manufacturing activities.

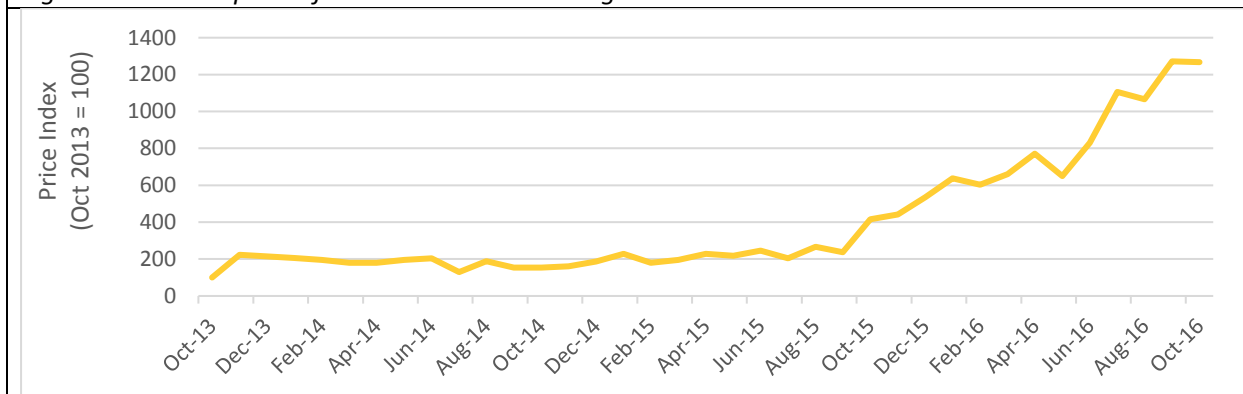
⁵ Madagascar has two large scale mines, Ambatovy nickel mine and QIT Madagascar Minerals (QMM) which owns and operates mineral sands mining from which ilmenite and zircon are extracted.

⁶ The primary sector in Madagascar mainly refers to agriculture, fisheries and forestry.

⁷ The most important months for the harvest period are from April to June

prices following the global shortage, which has contributed positively to export earnings.⁸ However, the drought in the south of the country has affected domestic maize and cassava production, which is projected to decrease by 4 and 16 percent respectively.⁹ These crops are largely cultivated by poorer income groups, thereby heightening food insecurity.

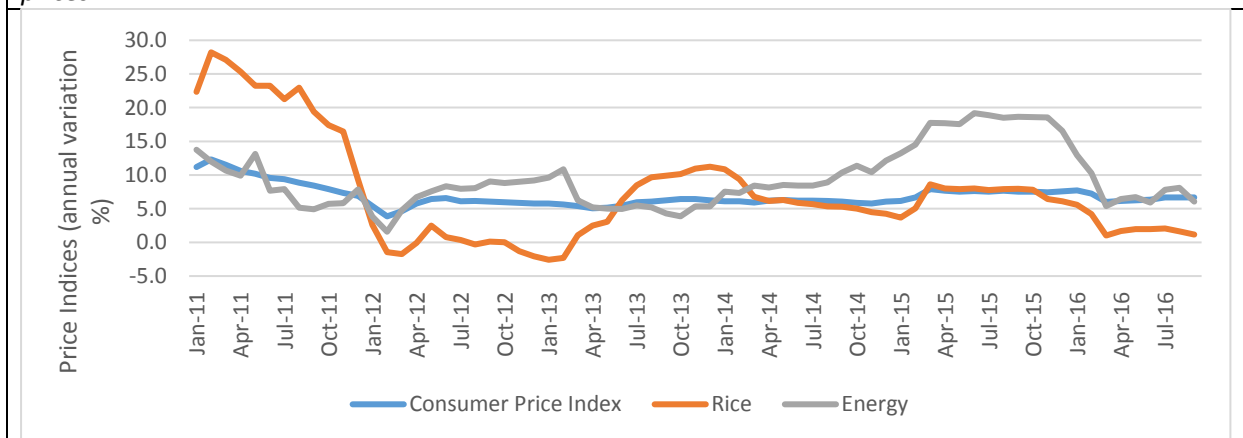
Figure 4: The real price of vanilla has been soaring in 2016



Source: WB staff calculations based on customs data

Inflation in 2016 has been relatively stable. Average inflation over the first three quarters of 2016 was 6.6 percent compared with 7.4 percent for the same period last year. Inflation in Madagascar is strongly linked to the evolution of local prices, particularly rice, since this a key component of household consumption. The good rice harvest in 2016, reinforced by low energy prices has moderated the rise in prices. In contrast, the high inflation observed in 2011 was driven by a surge in rice prices. In the absence of unanticipated shocks the Government’s 7.1 percent inflation target should be feasible.

Figure 5: Moderate and stable inflation rates in 2016 are linked to a good rice harvest and low energy prices



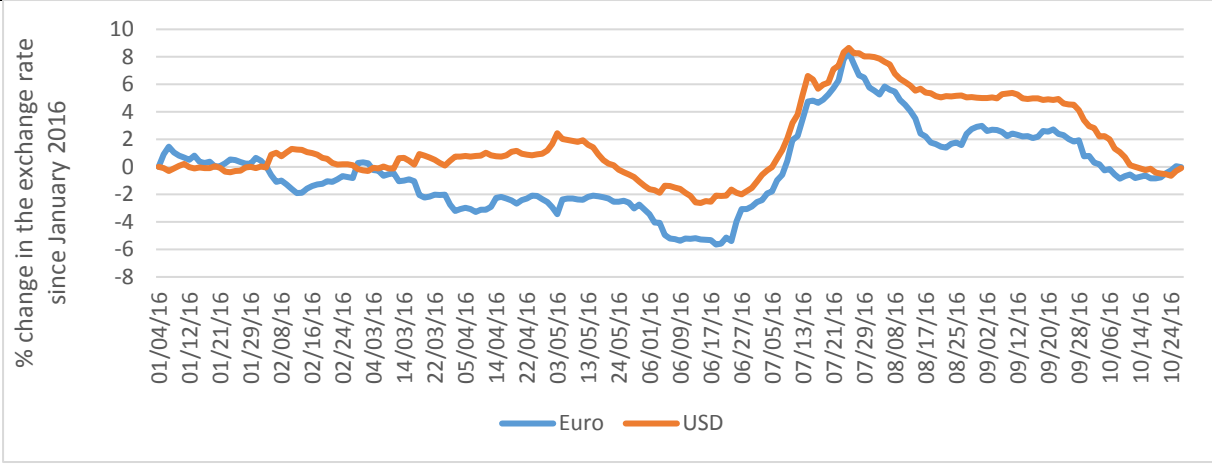
Source: INSTAT

⁸ Media reports suggest that vanilla prices have been affected by the speculative behavior of vanilla operators who are withholding stock from global markets: <http://www.eurovanille.com/fr/our-mission/vanilla-market-report.html>, accessed on November 23rd, 2016

⁹ Special Report: Evaluation of crops and food security in Madagascar, FAO/PAM, Octobre 2016

The performance of the Ariary has been stable against major trading currencies. The good performance of key agricultural exports has reflected positively on foreign reserves and kept the Ariary stable. A temporary depreciation of the Ariary was observed in the middle of the year, reflecting a temporary fall in levels of supply of foreign exchange in the market. The price has since stabilized due to higher foreign exchange earnings, reinforced by greater economic stability.

Figure 6: The Ariary has been stable against major trading currencies

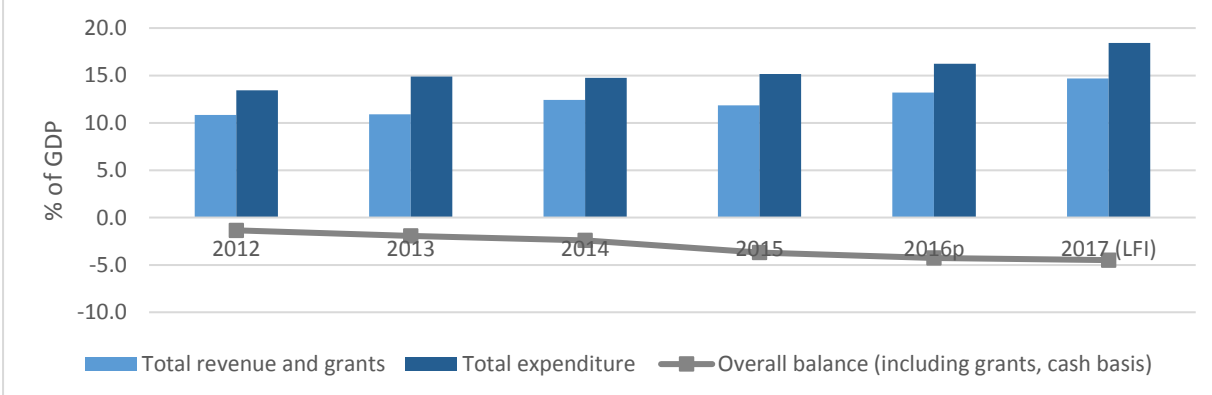


Source: CBM and WB staff calculations

Public Finances

Fiscal policy is moving to an increasingly expansionary stance. The 2016 budget deficit is projected at 4.3 percent of GDP, following an expansion of public expenditures and efforts to clear arrears payments, which were largely accumulated during the crisis period. This increasingly expansionary approach commenced in 2015, marking a departure from the political crisis period where budget deficits were contained as the authorities sought to maintain macroeconomic stability with dwindling levels of tax revenues and external financing. While fiscal stability was preserved, spending on public services and investments suffered. Available resources during this period were primarily used to pay salaries and subsidies for fuel prices and state-owned enterprises.

Figure 7: Since 2015 an increasingly expansionary fiscal policy stance has been adopted



Source: IMF and MFB

The changing fiscal policy direction is underpinned by efforts to increase fiscal space and spending on priority areas. According to the Budget Law for 2016 and the draft Budget Law for 2017 emphasis is placed on increasing fiscal space through enhanced revenue collections and improved efficiency of expenditures. Key priority areas include infrastructure, the social sectors, good governance and rural development. The proposed 2017 budget allocation to social sectors has increased in nominal terms by 17 percent compared to the revised 2016 budget. However, as a proportion of GDP the budget allocation has remained constant at 3.8 percent of GDP.

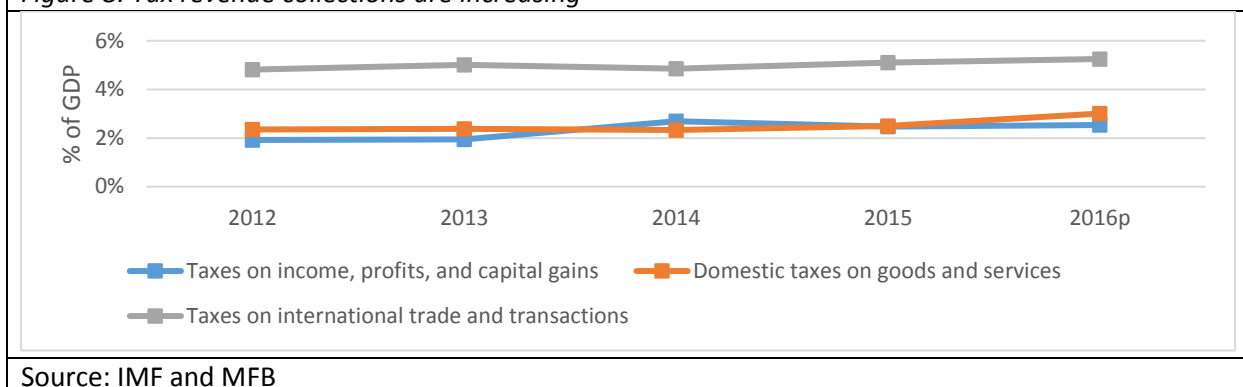
Table 1: Fiscal Trends

% of GDP	2012	2013	2014	2015	2016 p	2017 (LFI)
Total revenue and grants	10.8	10.9	12.4	11.8	13.2	14.7
Total revenue	9.6	9.6	10.1	10.4	11.1	11.2
Tax revenue	9.1	9.3	9.9	10.1	10.8	11.0
Non-tax revenue	0.5	0.3	0.2	0.3	0.3	0.2
Grants	1.2	1.3	2.3	1.5	2.1	3.5
Total expenditure	13.4	14.9	14.7	15.1	16.2	18.4
Current expenditure	10.7	11.8	10.8	11.7	11.0	10.3
Wages and salaries	5.4	5.7	5.6	5.5	5.7	5.6
Interest payments	0.7	0.7	0.6	0.8	0.9	0.9
Goods and services	0.8	0.6	0.9	0.5	0.7	0.8
Transfers and subsidies	2.4	4.1	3.2	3.4	3.2	2.7
Treasury operations (net)	1.5	0.6	0.6	1.4	0.5	0.3
Capital expenditure	2.7	3.1	3.9	3.5	5.3	8.1
Domestic financed	0.8	0.6	1.2	1.0	1.5	1.9
Foreign financed	2.0	2.5	2.8	2.5	3.7	6.2
Overall balance (commitment basis)	-2.6	-4.0	-2.3	-3.3	-3.1	-3.8
Float (variation of accounts payable, + = increase)	0.1	-0.2	0.6	0.1	0.0	0.0
Variation of domestic arrears (+ = increase)	-1.4	2.2	-0.7	-0.5	-1.2	-0.7
Overall balance (including grants, cash basis)	-1.4	-2.0	-2.4	-3.7	-4.3	-4.5
Total financing	1.4	2.0	2.4	3.7	4.3	4.5
Foreign borrowing	0.5	1.0	1.2	2.2	2.9	3.4
Domestic borrowing	0.9	1.0	1.2	2.0	1.4	1.1

Source: IMF, MFB and WB staff projections

Tax administration reforms are yielding results. Until the end of September 2016 customs and tax collections amounted to 71 percent of the annual forecast, a ten percent increase in real terms compared to the same period in 2015. Taxes on international trade and domestic taxes in particular have seen a rising trend. Reforms to customs procedures, including greater controls and collaboration with the tax administration authorities have yielded an increase in customs tax collections.

Figure 8: Tax revenue collections are increasing



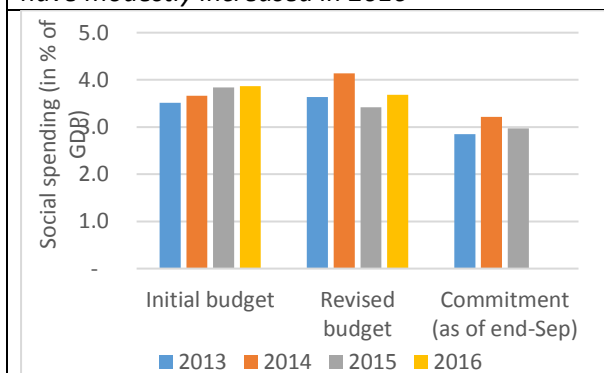
Source: IMF and MFB

The structure of public spending is shifting towards lower subsidies although slippages must be avoided.

In 2016, current expenditures as a share of GDP are projected to decline, a trend which is expected to continue in 2017.¹⁰ Current expenditures in the first three quarters of 2016 are 0.5 percent of GDP lower than the same period in 2015. The reduction has been partly driven by a decline in subsidies and transfers, as fuel pump price subsidies were eliminated. However, at 3.2 percent of GDP in 2016 subsidies and transfers are still high, in particular to JIRAMA¹¹ and the Pension Fund. Unplanned for pressures in-year can also result in higher subsidies to JIRAMA, which can crowd out priority expenditures and should be avoided.

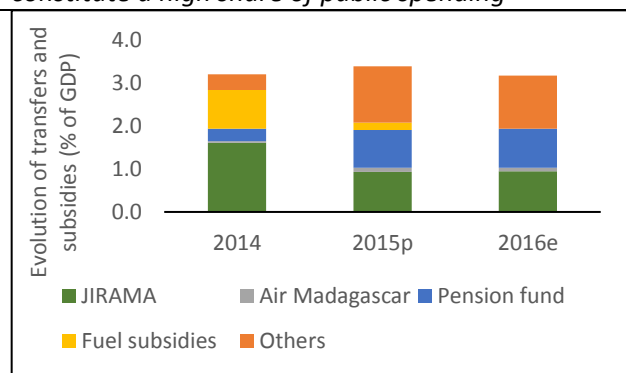
Spending on priority sectors and public investments are expected to have increased in 2016. The authorities have committed to increasing social expenditures, where the ministries responsible for water, population, health and education have been targeted. Capital expenditures are also expected to have risen from 3.5 percent of GDP in 2015 to 5.3 percent in 2016. A further planned expansion of public investments is foreseen in 2017, largely driven by external financing.

Figure 9: Social expenditures are expected to have modestly increased in 2016¹²



Source: MFB

Figure 10: While subsidies are reducing, they still constitute a high share of public spending



Source: IMF

¹⁰ Details on the reorientation of public spending can be found in the Citizen’s Budget report, which is an important initiative for increasing transparency of public expenditures. The report can be accessed on the Budget Directorate’s website: <http://www.dgbudget.mg/>

¹¹ JIRAMA is the state owned utilities company

¹² “Initial credit” means initial budget allocation, “modified budget” is the amount allocated through the revised budget, and “committed budget” is the budget at the commitment stage of budget execution

A key challenge will be to ensure that the execution of spending keeps pace with planned expenditures.

At the end of September 2016 execution of public spending was at 37.6 percent of the budget. The execution rate varies in each sector: 61 percent in the social sector, 35 percent in the administrative sector, 18 percent in the infrastructure sector, and only 14 percent in the productive sector. However, these figures could be underestimated due to delays in recording externally-funded investment in the government's accounting system.

The Government's fiscal policy stance envisages an expansion of debt financing, but the level of debt distress remains moderate. At the end of 2015 public debt was estimated at 41 percent of GDP, most of which was contracted on concessional terms. During the period 2011-2014 total debt was estimated at 33.7 percent of GDP. The projected increase in debt financing from the end of 2015 onward is primarily targeted to the implementation of the Government's public investment program. Similarly, public private partnerships (PPPs) are also being considered as a financing strategy for public investments. While debt and PPPs do provide a means for raising financing, such strategies are associated with heightened risks to public finance which need to be carefully managed.

External Sector

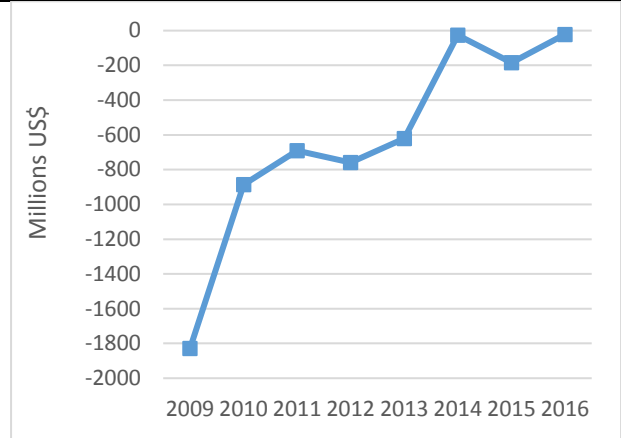
In 2016 the current account balance continued to improve. Foreign direct investment (FDI) flows have contributed to an improvement in the current account balance. Foreign currency reserves have increased the months of import cover from 2.9 months in 2015 to an estimated 3.3 months in 2016. Following the completion of investments for the two major mining operations in 2011, FDI flows related to the extractive industries have declined. The most recent data available suggests that FDI is increasingly oriented toward financial sectors, telecommunications and manufacturing activities.

Broader changes in the economy have improved the current account balance. The completion of the investment phase of mining operations in 2011 moderated capital intensive imports. The effects of lower commodity prices for imports such as petroleum products and rice, and the intensification of exports from the mining sector since 2013 has further strengthened the current account balance.

Non-mining exports performed well in 2016. Exports recorded between January and October 2016 are estimated at US \$ 1,687 million, a 17 percent increase compared with the same period last year. However, the fall in nickel prices since 2015 and declining production volumes has adversely affected exports. In the first ten months of 2016 Madagascar exported US\$ 410 million worth of mining products, a decline of 10 percent compared to the same period the year before. The value of non-mining exports increased by 22.3 percent in 2016, largely driven by higher revenues from vanilla and cloves. Exports from free zone companies also increased from US\$ 434 million in 2015 to US\$ 546 million in 2016, mainly resulting from textiles and shrimps exports to the Euro zone area. Under the Africa Growth and Opportunities Act the value of Madagascar's exports is estimated to have tripled in 2016.

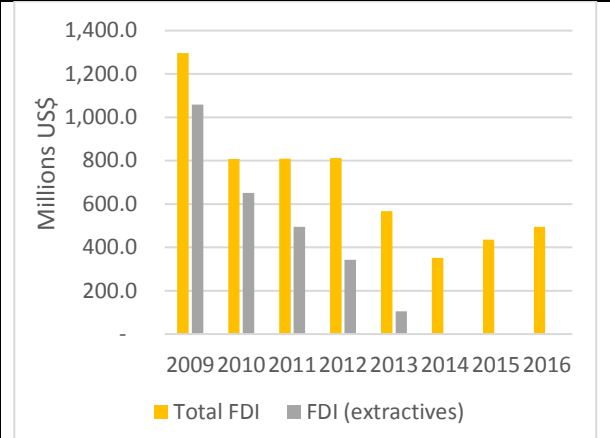
The cost of imports has been moderated as global petroleum prices remain favorable. Imports in 2016 are estimated at US\$ 2,337.7 million. The main components of these imports are raw materials with a large proportion destined for free zone enterprises, petroleum products and foodstuffs, where the latter cost more in 2016. However, crude oil prices are forecasted to rise in 2017 from US\$ 53 per barrel to US\$ 55 per barrel (World Bank, 2016), which will affect the cost of imports and subsidy provision to JIRAMA.

Figure 11: The current account balance has been steadily improving



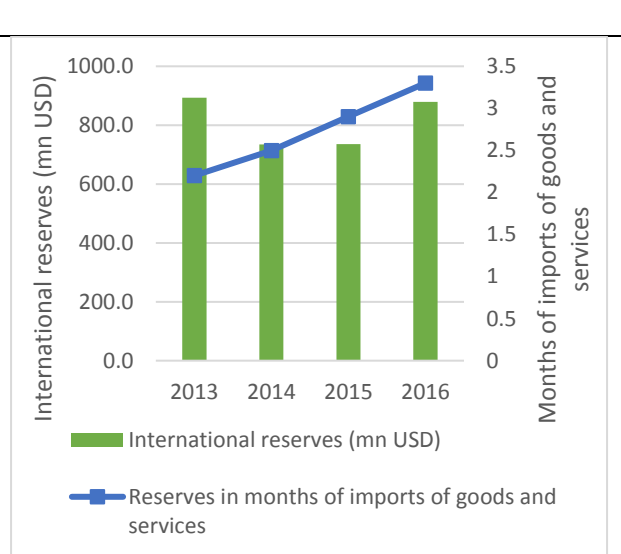
Source: CBM and MFB

Figure 12: Non-extractives related FDI is starting to pick up¹³



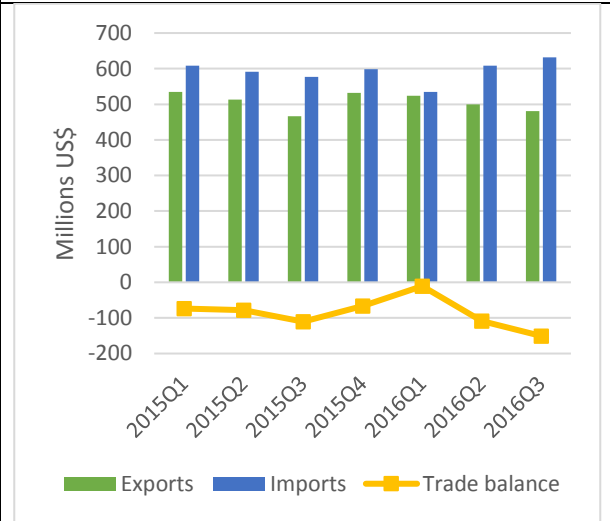
Source: CBM and MFB

Figure 13: International reserves are increasing



Source: CBM and MFB

Figure 14: The trade balance continues to be in deficit



Source: CBM

¹³ Data on FDI related to extractive industries are not available from 2014

Table 2: Balance of Payments

	2014 Q3	2014 Q4	2015 Q1	2015 Q2	2015 Q3	2015 Q4	2016 Q1	2016 Q2
1 – Current transactions	42.1	49.9	-32.3	-87.5	-87.4	22.9	94.0	-117.0
1.1 Goods and services	-26.5	-115.7	-95.6	-105.6	-101.7	-35.2	19.5	-117.8
Trade balance	-43.6	-129.5	-73.3	-78.4	-110.9	-66.3	-10.7	-108.8
Exports FOB	569.3	596.3	534.7	513.2	466.2	532.3	523.5	499.5
Imports FOB	-612.9	-725.8	-608.0	-591.7	-577.1	-598.5	-534.2	-608.2
SERVICES NETS	17.1	13.7	-22.3	-27.1	9.1	31.0	30.2	-9.0
1.2 Income	-79.9	-83.2	-64.0	-97.3	-118.1	-96.5	-69.1	-148.5
1.3 Current transfers	148.5	248.8	127.3	115.4	132.4	154.6	143.6	149.3
2 – Capital and financial account	-105.0	71.6	40.0	70.1	42.1	98.2	-26.0	107.7
2.1 Capital account	71.3	40.9	43.9	18.0	52.5	16.0	27.8	20.7
2.2 Financial account	-176.3	30.7	-3.9	52.2	-10.4	82.1	-53.8	87.0
3 – Errors and omissions	40.5	-23.3	14.9	-26.6	14.9	-1.7	-36.5	-4.4
4- Overall balance	-22.4	98.2	22.6	-44.0	-30.4	119.3	31.6	-13.7

Source: CBM

Monetary Policy

Monetary policy seeks to support the revival of investment through private sector access to credit. In May 2016 the Central Bank revised the policy rate to 8.3 percent, following an earlier downward revision from 9.5 percent to 8.7 percent in October 2015. However, this rate change is not yet reflected in lending rates by commercial banks, as the average gap between the Central Bank's rate and commercial bank's rates widened in 2016. This measure follows the reduction of the reserve requirement from 15 percent to 13 percent in October 2015.¹⁴ Overall, the policy direction marks a shift from the 2011-2014 period, when the Central Bank's monetary policy was primarily focused on containing inflation.

Financing of credit to the government and the economy shows signs of slowing in 2016. Financing is largely for medium term loans. The net increase in long-term loans granted since the beginning of 2016 is only MGA 60.1 billion (equivalent to 0.2 percent of GDP), as loan reimbursement levels outweighed the issuance of new credit to the private sector. In addition, anecdotal evidence suggests that liquidity levels

¹⁴ The reserve requirement sets the minimum amount of reserves that must be held by a commercial bank

may have been affected by vanilla growers not depositing revenues in the banks. Since the beginning of the year, money supply has expanded by 10.5 percent, but inflation has still been contained.

Recent legislation confirms Central Bank independence. A new Central Bank statute issued in July 2016 confirms the independence of the Central Bank in monetary policy. The main provisions of the Act include gradually reducing Central Bank advances to the government, automatically transferring central bank losses and profits to the government, establishing an Audit Committee, and setting up an Executive Committee that will propose policies to the Board of Directors. Therefore, the overall effectiveness of monetary policy should be strengthened.

<p><i>Figure 15: The pace of increasing credit to the economy has reduced in 2016</i></p> <p>Annual variation in %</p> <p>Jan-15 Mar-15 May-15 Jul-15 Sep-15 Nov-15 Jan-16 Mar-16 May-16 Jul-16 Sep-16</p> <p>■ Credit to the government ■ Credit to the economy</p>	<p><i>Figure 16: The gap between Central Banks and commercial banks rates widened in 2016</i></p> <p>Jan-14 Apr-14 Jul-14 Oct-14 Jan-15 Apr-15 Jul-15 Oct-15 Jan-16 Apr-16 Jul-16 Oct-16</p> <p>— Central bank policy rate — Weighted average overdraft rate — Weighted average borrowing rate</p>
<p><i>Figure 17: Credits to the economy are largely medium term</i></p> <p>Annual variation (Millions MGA)</p> <p>Sep-15 Oct-15 Nov-15 Dec-15 Jan-16 Feb-16 Mar-16 Apr-16 May-16 Jun-16 Jul-16 Aug-16 Sep-16</p> <p>■ Short term credit ■ Medium term credit ■ Long term credit</p>	<p><i>Figure 18: Money supply has expanded since the start of the year</i></p> <p>Sep-15 Nov-15 Jan-16 Mar-16 May-16 Jul-16 Sep-16</p> <p>— M3 — Monetary Base</p>
<p>Source: CBM and WB staff calculations</p>	

Economic Outlook

The medium-term economic growth outlook is positive. Based on current projections, economic growth is expected to surpass the performance of recent years. The intensification of public works activities is a key growth driver, which may also spur activity in related sectors, provided investments are carefully selected on the basis of their expected economic and social returns. Madagascar's participation in the African Growth and Opportunities Act should also invigorate growth as production accelerates. Provided climatic conditions remain favorable the agriculture sector should continue to contribute to growth. If much anticipated reforms to Air Madagascar are implemented the tourism sector can expect to grow.¹⁵ And finally, over the medium term, there may be opportunities to expand mining activity, particularly if commodity prices for nickel and other raw materials rise. Such prospects may be further boosted by the revision of the Mining Code, which could enhance investor confidence.

However, this positive growth trajectory is dependent on maintaining political and macroeconomic stability, and implementing key reforms. The positive growth period presents opportunities to benefit broad sections of the society. Madagascar's history has shown that in the past positive growth periods have been followed by political crises.¹⁶ Avoiding this outcome requires commitment from all stakeholders to respect democratic processes and commit to stability. Ensuring that the benefits of growth are felt more inclusively will be critical in this endeavor. Concretely, this requires scaling up pro-poor expenditures including in those areas which are the least well-served, improving the productivity of sectors such as agriculture which engage a large proportion of the poor, and generating jobs through private sector led growth. To achieve this, it is critical to maintain the momentum for implementing key reforms, particularly increasing fiscal space to spend in line with policy priorities, and improving the performance of JIRAMA to enhance access to affordable electricity supply.¹⁷

¹⁵ Key reforms being undertaken by Air Madagascar include restructuring the flight schedule, increasing network partnerships, reducing maintenance and distribution costs and initiating a staff reduction program.

¹⁶ This phenomenon is discussed in Madagascar's Systematic Country Diagnostic (World Bank, 2015) based on the paper: Razafindrakoto, M., Roubaud, F and J. Wachsberger, 'Institutions, gouvernance et croissance de long terme à Madagascar : l'énigme et le paradoxe,' *IRD-DIAL Working Paper*, 2013

¹⁷ Madagascar is currently ranked 188 out of 189 in the Doing Business Survey for access to electricity

Part Two: Special Focus Section on Agriculture and Rural Development

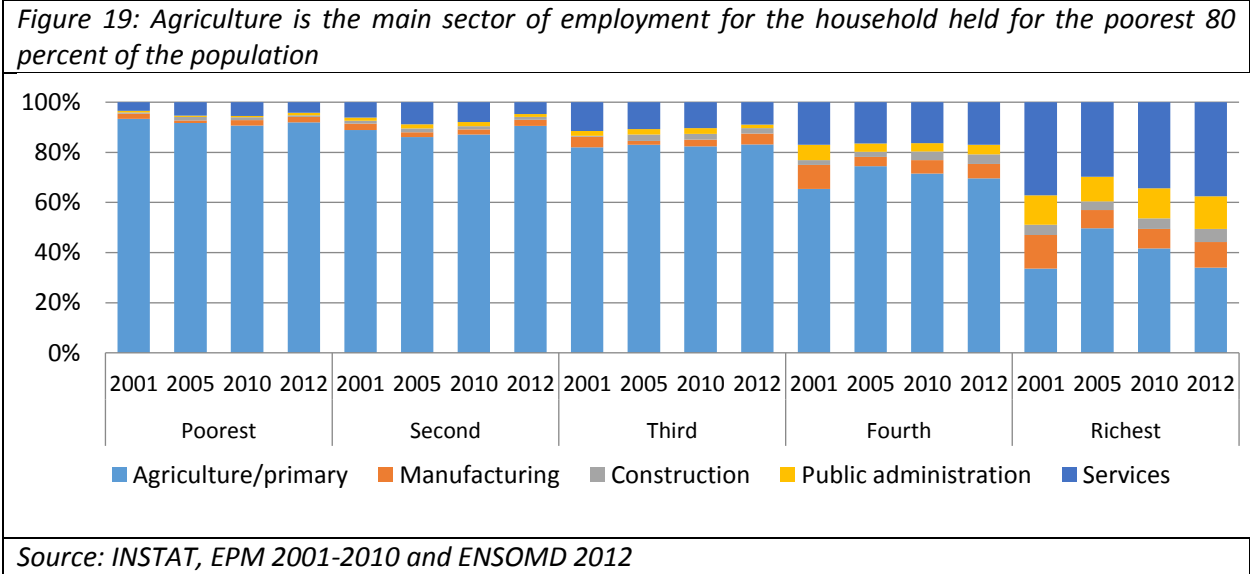
Introduction

Improving the productivity of the agriculture sector is critical for promoting rural development and livelihoods. Rural households are far more likely to live in poverty. The great majority of poor households are engaged in the agriculture sector, which provides the main source of income, primarily for subsistence purposes. And while agricultural production has increased, the pace has not kept up with population growth. Realizing the untapped potential in the agriculture sector would increase food security, promote growth, and improve the well-being of those who are least served. This special focus section provides a background to agriculture and rural development, discusses key constraints facing the sector, and opportunities for overcoming these.

Agriculture is Closely Linked with Rural Economic Development

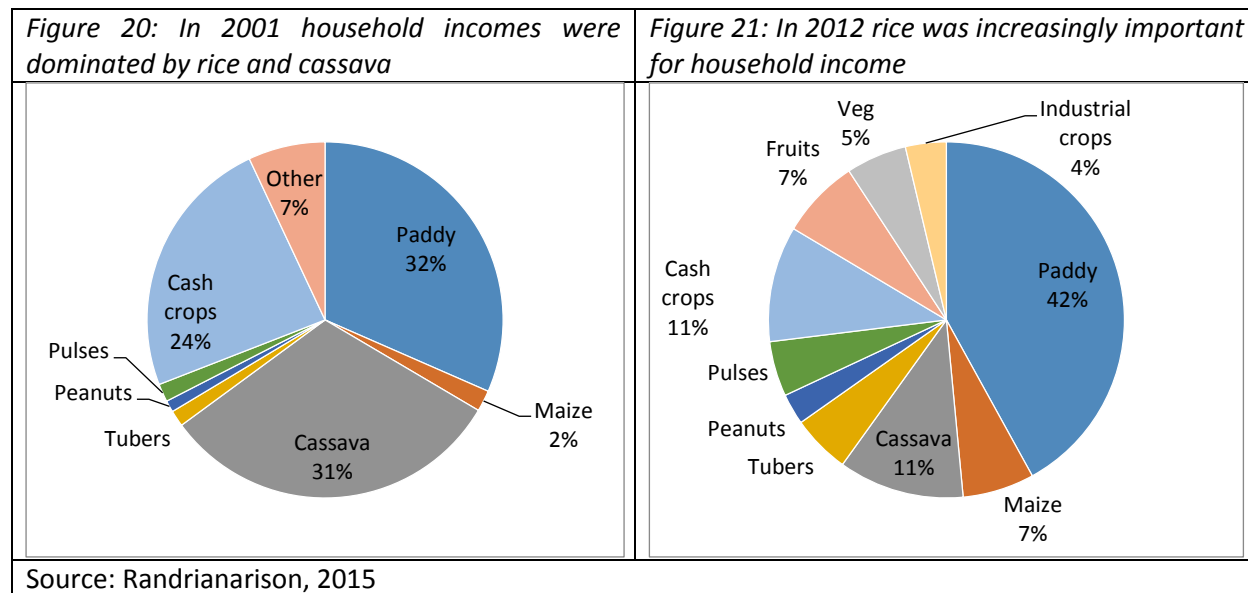
Poverty and food insecurity are predominantly a rural phenomenon. Madagascar has a very high poverty rate, with 70 percent of the population living in absolute poverty in 2012.¹⁸ There remains a sharp contrast in urban and rural development indicators. 78 percent of the absolute poor live in rural areas compared with 35 percent in urban areas. Rural areas are characterized by lower life expectancy rates, illiteracy being more widespread, a higher malnutrition prevalence, and a greater proportion of households without access to safe drinking water and improved sanitation.

The majority of poorer households are engaged in the agricultural sector. Agriculture is the main sector of employment for the household head for the poorest 80 percent of the population. Only the richest 20 percent of the population are engaged in other sectors such as services, manufacturing, and public administration (World Bank, 2015).



¹⁸ Data based on the national re-estimated absolute poverty line. Absolute poverty is defined as the percentage of the population living on an income that is less than the extreme food poverty line plus a 30 percent allowance for non-food goods.

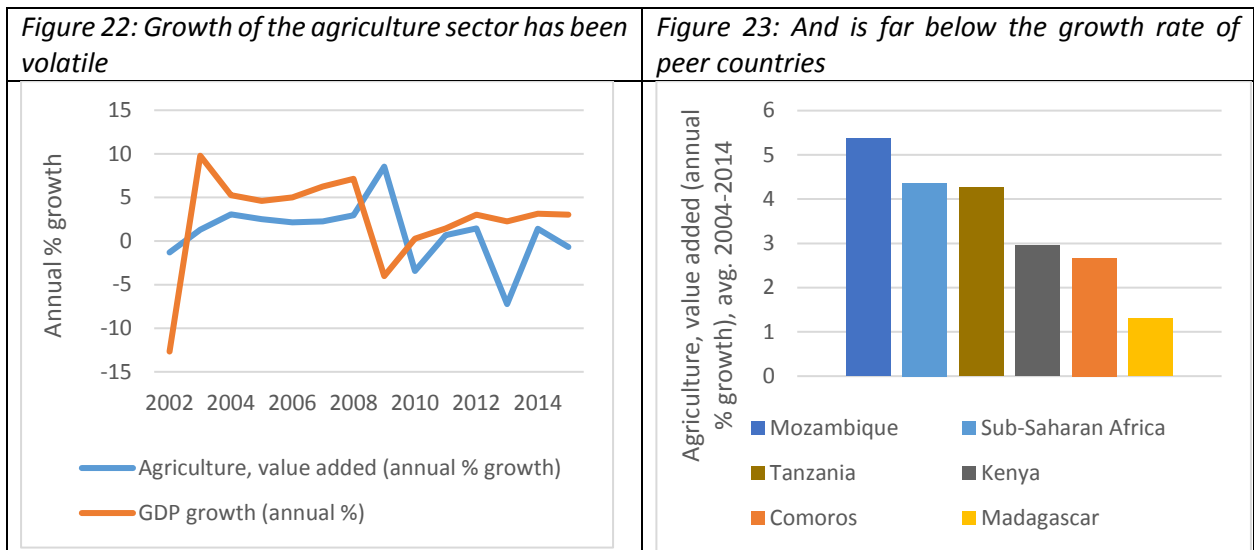
Agricultural activity provides the main source of income for rural households. Approximately 50 to 90 percent of total household income comes from agriculture depending on the regions and years. The importance of rice for household incomes is increasing and the crop is harvested on approximately 85 percent of farms (Agricultural census 2004/05). Over 10 million people from agricultural households depend on rice farming for income generation, and the subsector is estimated to provide 70,000 regular jobs (Bockel, 2002). Cassava is the second most cultivated crops, on approximately 70 percent of farms, although half of the production comes from the South.



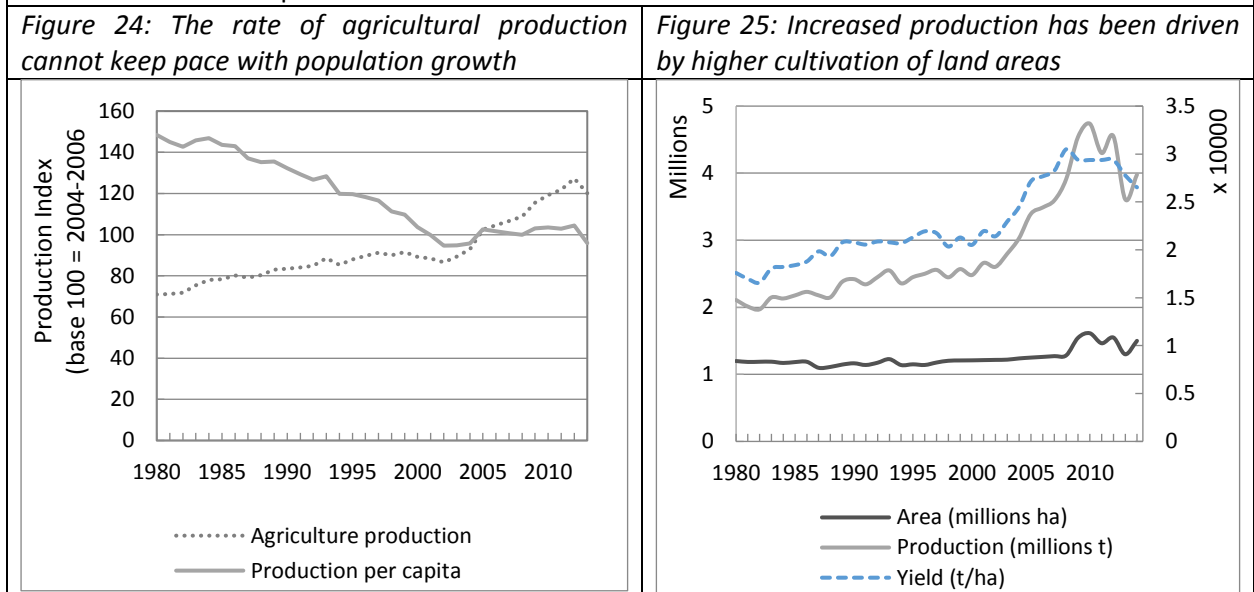
There has been limited real growth in the agriculture sector. The growth of the agriculture sector is subject to volatility, particularly due to exogenous, climatic-related effects. Agricultural growth peaked to 8 percent in 2009 largely due to favorable rainfall conditions (even though real GDP growth took a significant downturn) but registered negative 7 percent outturn in 2013. Over the period 2004 to 2014 the agricultural contribution to GDP growth was 1.3 percent, far below peer countries and the average for sub-Saharan Africa.

Agricultural production output is struggling to keep up with population growth. Over the last 30 years, the total production index has been increasing.¹⁹ However, the net per capita production index decreased significantly during the same period, meaning that production cannot keep pace with the population growth rate. Further, agricultural production has increased mainly through the expansion of cultivated areas rather than from the use of improved technologies or inputs, putting pressure on Madagascar’s natural resource base.

¹⁹ This refers to a rise in the aggregate volume of agricultural production compared to the base year of 2004-2006.



Source: World Development Indicators



Source: FAOSTAT

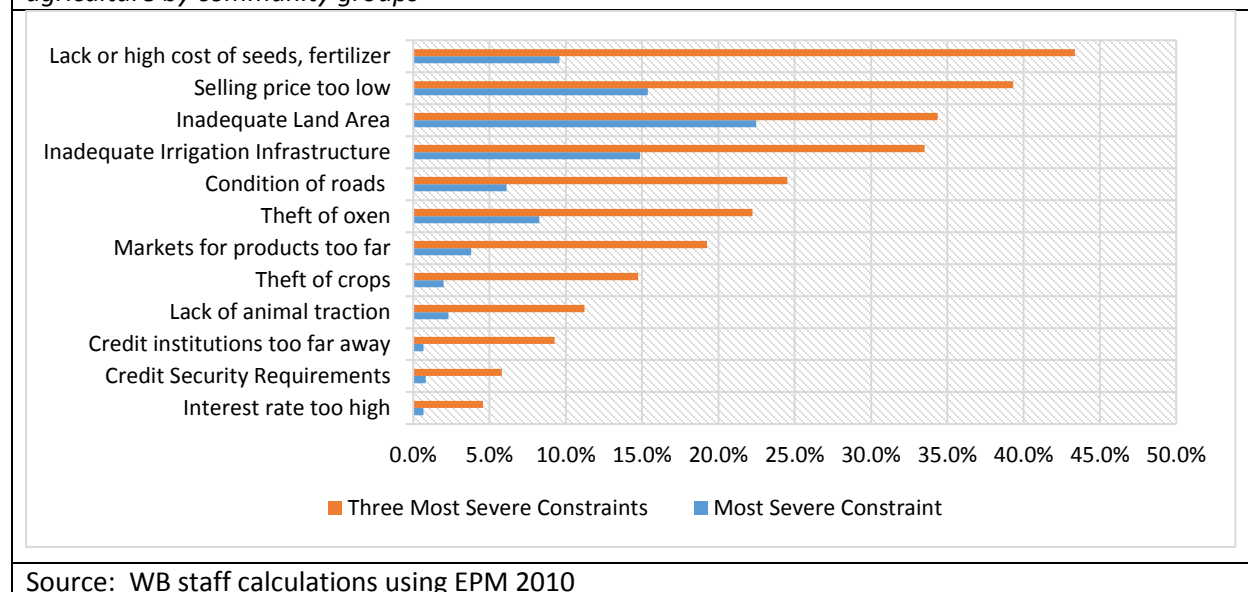
Agriculture remains predominantly a subsistence activity. Approximately 60 percent of farming produce is consumed within the farming household. From the surplus that is marketed, 47 percent comprises of maize, 20 percent is cassava and 20 percent is rice. However, there is a large untapped export potential. Madagascar is already the world’s leading exporter of cloves and vanilla, which alongside lychee and shellfish have dominated the agricultural export basket. There is significant potential to increase these exports and to develop other promising industries such as sea cucumber aquaculture and inland aquaculture, which are relatively underdeveloped.

Constraints and Opportunities in the Agriculture Sector

The agriculture sector is affected by a number of constraints. The three most commonly ranked constraints by community groups include: access to seeds and fertilizer, inadequate land area, and a low selling price, which are discussed in detail below. These factors are intensified by low levels of human

capital, dilapidated production and transport facilities (particularly rural roads), high exposure to climatic effects, and lack of improved water management to facilitate irrigation.

Figure 26: High cost of inputs, inadequate land area and low selling prices are top three constraints to agriculture by community groups



Source: WB staff calculations using EPM 2010

Increasing the use of fertilizers

Madagascar’s fertilizer consumption is one of the lowest in the world. Fertilizer consumption is approximately 5 kg/ha of arable land per year, compared with a sub-Saharan African average of 15kg/ha (NEPAD, 2006). In comparison, other rice growing countries have a much higher consumption of fertilizers, such as 160 kg/ha for Thailand, 203 kg/ha for Indonesia, 253 kg/ha for Bangladesh, and about 327 kg/ha for Vietnam in 2011-13. Only an estimated 15 percent of Madagascar’s cultivated land receives mineral fertilization (Agricultural census 2004/05).

Affordable access to fertilizers is an issue. At current price levels the cost-benefit ratio of utilizing mineral fertilizers is subject to exogenous conditions, such as climatic variations.²⁰ Farmers usually do not have sufficient cash and therefore have to rely on credit to finance the supply of inputs. However, given the high interest rates charged by microfinance institutions, the expected net profits are negated in the absence of insurance against technical and climate risks. Therefore, with the exception of highly profitable intensification operations such as in high value added subsectors, farmers are unlikely to use credit to finance fertilizer use.

Government fertilizer supply programs have had limited success. A National Fertilizer Strategy was initiated in 2006 to improve domestic agricultural production. However, the programs were characterized by massive subsidization that had limited lasting impact on production. The programs were affected by cumbersome procurement procedures, lack of capacity of farmers’ organizations responsible for implementing the programs, mismatch between supply and diversity of local needs, low involvement of

²⁰ This refers to the conventional NPK+urea combination and the DAP+urea fertilizers recommended alternative for rice farming

inputs distribution networks, and lack of an exit strategy. Massive direct subsidies programs have now been suspended.

Notable examples of success are worth mentioning. Fertilizer and seeds programs that proved most effective are characterized by strong involvement of the private sector in distribution, consideration of the vulnerabilities of small family farms in targeting, availability of technical support to transfer knowledge on inputs, multi-year support, the gradual introduction of local structures such as farmers organizations, and a beneficiary contribution to the cost of inputs to promote ownership and sustainability. Reflecting on the lessons learned in the implementation of fertilizer programs, a number of key recommendations have been identified to improve the use of fertilizers, which are summarized in Box 1.

Box 1: Recommendations to improve the use of fertilizers

- **Interventions should target agricultural areas with high potential and demand.** An important target group are market-oriented family farms who currently use little or no inputs, but have the potential to increase their productivity and market participation.
- **The capacities of producers, agricultural extension services, inputs distributors, production techniques, and safeguards should be strengthened.** This requires research and development, technical support, providing training on farm management, production techniques, and environmental safeguards.
- **Private supply and marketing systems should be developed at the national and local level.** An incentives framework should be established to increase access to financing for investments in the formal sector of inputs production and marketing.
- **Quality control of inputs should be strengthened.** This could include the establishment of a regulatory authority which could work closely with existing institutions.
- **New extension services entities should be strengthened.** A new model for extension services, Centres de Services Agricoles (CSAs) has been established at the district level, which could help to implement fertilizer and seed policies.

Ensuring secure access to land

Ownership rights to land can only be validated through a land title. These land titles are delivered by the land administration. However, in rural areas customary authorities also have a prerogative on the management of access to land, although their powers have no legal value. The decentralization of land management through 'Local Land Offices' has improved the affordability and time required to obtain a formal acknowledgment of land rights. The average cost and time needed to obtain an official document has been reduced from six years and US\$ 500 for a land title to six months and US\$ 14 for a land certificate, which has virtually the same legal value as land titles. These reforms allowed for 120,000 land certificates to be delivered in nine years (World Bank, 2013), although the reform momentum slowed following the 2009 crisis.

There is considerable scope to improve land management. Current estimations suggest that 50 land certificates are distributed annually in the communes. Given the demand for land titles at this pace it is estimated that 75 years are needed to complete this process (Andrianirina-Ratsialonana, 2013). Other restricting factors include cost, the education level of the household (female illiteracy in particular limits willingness to pay), and the perceived usefulness of the certificate to protect rights. The decentralized system needs refining, including local capacity building and reinforcement of communal governance. Key recommendations to address these constraints are presented in Box 2.²¹

Box 2: Recommendations to promote land security

- **Accelerate the process for obtaining a land title.** More land offices could be established, and the capacity of communes could be strengthened to ensure their sustainability.
- **Improve women’s information on rights regarding access to land through campaigns.** The emphasis should be on ensuring land certificates are issued with both spouses’ names for land acquired during marriage.
- **Promote responsible investment in agriculture and food systems.** To improve governance of foreign investment and avoid harming smallholder farmers, large-scale land acquisition operations should incorporate the principles of the World Food Security Committee.

Obtaining higher prices: contract farming and developing high value products

Contract farming practices can bring significant benefits to farmers. Contract farming has existed in Madagascar since the 1980s. All regions have some contract farming, but they are dependent on the specific production conditions sought by companies. Contract farming offers the prospect of more stable income, and can be a mitigation measure of the lean season when households have to reduce their consumption of staple food.

Contract farming is mainly implemented in export-oriented subsectors or subsector segments. It mainly covers agricultural products with high value added, specific production methods, or niche products. Such products benefit from higher unit prices and high added value, giving farmers opportunities for additional income. Contract farming can potentially be applied to all types of agricultural products, but is generally regarded as more suitable for horticultural or cash crops, including for export markets (TechnoServe and IFAD, 2011 quoted in Will, 2014).

There are some important prerequisites for contract farming. Contract farmers have access to paved roads to transport products and are usually better equipped in terms of production factors such as land surface area and/or herd. Beyond this, there is limited comprehensive information on the characteristics of producers that are most likely to enter high-potential value chains. Firms involved in contract farming are very diverse in terms of size, structure, target markets and activities.

²¹ The World Food Security Committee in Box 2 refers to an intergovernmental body within the United Nations system for review and follow up of policies regarding world food security

There is the potential to develop high value products and promising value chains. In the agriculture sector, high value products such as hand-picked green beans, artemesia, cocoa or organic subsectors offer opportunities to improve smallholders' access to global markets. Fishing and aquaculture could also provide opportunities for smallholder producers to integrate into the national market under contract farming or other models of marketing organization, to increase their income. In particular, sub-sectors such as seaweed; sea cucumbers (fisheries and aquaculture development); octopus (traditional fishing), and crab (traditional fishing and aquaculture development) offer great potential for development. Recommendations for promoting high value products and value chains are presented in Box 3.

Box 3: Recommendations to promote contract farming and the development of high value products

- **Strategies and programs targeted by geographic location and sectors should be implemented in the agribusiness sector.** The focus should be on limiting uncompetitive behaviors, undertaken by an independent competition authority. Key stakeholders should be consulted in each value chain to promote future investments.
- **Facilitate supply aggregation through closer collaboration between producers.** This would lead to economies of scale to improve small producers' access to markets, increase farm incomes, and promote job creation.
- **Seek to enhance the contract farming model.** This could result in a shift from short-term contracts to medium and long-term arrangements based on business plans designed and agreed by partners.
- **Fill knowledge gaps on the main determinants of contract farming.** This would lead to better insights on the ways to scale up and enhance inclusiveness of contractual schemes.
- **Improve production and marketing infrastructure.** This requires the rehabilitation/construction of landing facilities, storage, and conservation facilities, the rehabilitation and maintenance of roads, and the development of alternative energy sources.

Conclusion

Even though a large majority of poor households are engaged in agriculture, per capita productivity and real levels of sectoral growth remain low. Cultivation practices are based on extensification strategies with implications for Madagascar's fragile natural resource base, rather than improving the productivity of existing farms and land use. This section has discussed three major constraints facing the sector: low utilization of fertilizers, land insecurity, and low prices. A number of common themes have been identified to address these challenges. Firstly, in terms of institutions, local land offices, farmer's organizations and extension services should be enhanced. The governance of foreign land acquisition should also be improved. Secondly, an enabling environment for the private sector should be facilitated, through working on agribusiness strategies and increasing access to financing for investments. Thirdly, production and marketing infrastructure needs to be improved including through the maintenance of roads, and the development of alternative energy sources. And finally, there is scope for building the capacity of producers, extension services, production techniques, and safeguards. Focusing on these key areas of intervention can help to address constraints to agricultural productivity, improve the lives of the poor, and promote the inclusiveness of Madagascar's growth path.