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# MOZAMBICAN LABOR MARKETS

IN THE FACE OF A NATURAL RESOURCE  
BOOM - What Potential Impacts of Dutch  
Disease?

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# MOZAMBICAN LABOR MARKETS

## IN THE FACE OF A NATURAL RESOURCE BOOM - What Potential Impacts of Dutch Disease?

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The authors wish to thank all representatives of the Mozambican government, private sector, research and education, and international organization communities who took the time to share information with us regarding labor market policy, structure, and behavior. A complete list of interviews held can be found in Annex A.



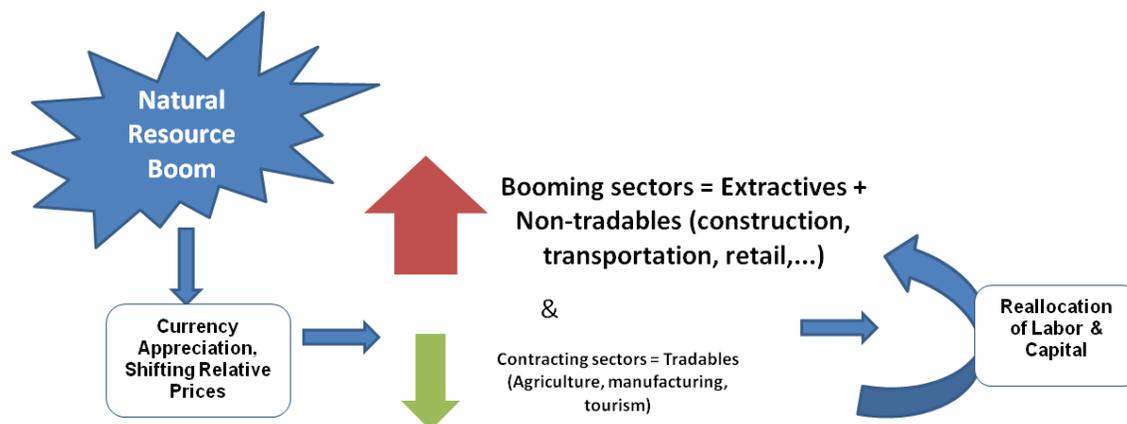
# Acronyms

AIM	<i>Agência de Informação de Moçambique</i>
BCG	Bevan, Collier, and Gunning
BM	<i>Banco de Moçambique</i> (Bank of Mozambique)
CIP	Center for Public Integrity in Mozambique
CONSILMO	National Confederation of Independent and Free Trade Unions of Mozambique
CPI	Center for Investment Promotion
CTA	<i>Confederação das Associações Económicas de Moçambique</i> (Confederation of Business Associations in Mozambique)
DNEAP	National Directorate of Studies and Policy Analysis (Ministry of Planning and Development)
ENDE	<i>Estratégia Nacional de Desenvolvimento</i> (National Development Strategy)
EPC	Engineering, Production, and Construction (contractor)
ER	Exchange rate
IAF	<i>Inquéritos Agregados Familiares</i> (Household Surveys)
IAI	<i>Inquérito Agrícola Integrado</i> (Integrated Agricultural Survey)
IESE	<i>Instituto de Estudos Sociais e Económicos</i> (Institute for Economic and Social Research)
IFTRAB	<i>Inquérito Integrado à Força de Trabalho</i> (Integrated Labor Survey)
IIM	<i>Inquérito as Indústrias Manufactureiras</i> (Manufacturing Industries Survey)
ILO	International Labor Organization
IMF	International Monetary Fund
INCAF	<i>Inquérito Contínuo aos Agregados Familiares</i> (Continuous Household Survey, panel data set)
INE	<i>Instituto Nacional de Estatística</i> (National Institute of Statistics)
INEFP	National Institute for Employment and Professional Training
INFOR	<i>Inquério ao Sector Informal</i> (Informal Sector Survey)
IOF	<i>Inquérito aos Oracamentos Familiares</i> (Household Budget Survey)
ISCTEM	<i>Instituto Superior de Ciências e Tecnologia de Moçambique</i>
LNG	Liquefied natural gas
MIC	Ministry for Industry and Commerce
MITRAB	<i>Ministério do Trabalho</i> (Ministry of Labor)
MPD	Ministry of Planning and Development
MOZAL	Mozambique Aluminum
MT	Metical
OOH	Occupational Outlook Handbook

OTM	<i>Organização dos Trabalhadores de Moçambique</i> (Workers' Organization of Mozambique)
PIREP	Integrated Program for Professional Education Reform
PLA	Project Labour Agreement
PPP	Public-private partnership
REER	Real effective exchange rate
ROM	Republic of Mozambique
SNV	Netherlands Development Organization
SPEED	Support Program for Economic and Enterprise Development
TIA	<i>Trabalho de Inquérito Agrícola</i> (Agricultural Survey)
UEM	Eduardo Mondlane University
UNU	United Nations University
USAID	United States Agency for International Development
WIDER	World Institute for Development Economics Research

## Executive Summary

Around the world, natural resource export booms have often led to significant economic realignments, even virtual elimination of some sectors of the economy. Natural resource exports lead to surging foreign exchange receipts, which cause the value of the local currency to strengthen and shifts relative prices between tradable goods and non-tradable goods and services across sectors.



Experience elsewhere suggests that labor and capital are often reallocated in response to these shifting incentives, away from so-called “tradables” sectors (traditional export and import-substitution sectors such as agriculture, manufacturing, tourism) into the extractives sector and “non-tradables” sectors (service sectors that support the expanding natural resource boom such as construction, transportation and other infrastructure, food retail, etc.).

Given similar experiences elsewhere in Africa and around the world, what are the likely impacts of such strong macroeconomic forces in Mozambique on the labor market and in the traditional tradables sectors? And what can be done to manage these such that the maximum benefit accrues to Mozambique?

The USAID/Mozambique-supported Support for Enterprise and Economic Development (SPEED) project has launched a series of investigations to explore these questions. In mid-March 2014 two economists sought qualitative and quantitative information from representatives of government, private sector, and labor organizations to understand the structure, behavior, and policies governing the labor sector in Mozambique today in order to anticipate possible labor market impacts of the natural resource boom on employment and wages in the short- to medium-term future. Feedback received from a wide range of stakeholders at a workshop held in June 2014 has been incorporated into this report. Complementary assessments of potential impacts of the so-called “Dutch disease” on agriculture, manufacturing, and tourism are also underway.

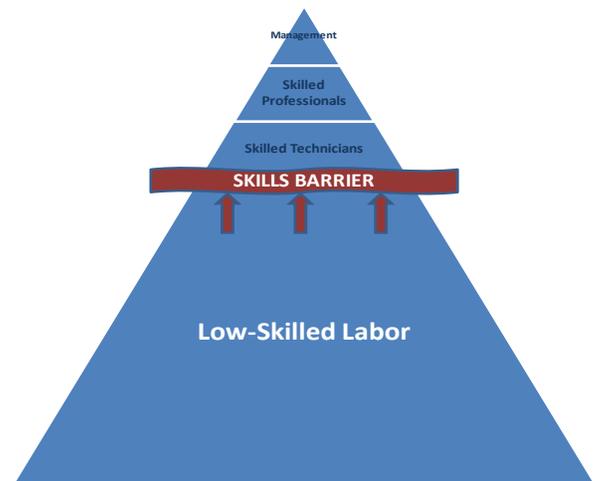
Findings from the labor assessment include the following:

***1. The natural resource boom is already unfolding in Mozambique, although the full extent of the macroeconomic phenomenon known as Dutch disease is unlikely to be felt in full force for***

*some time.* Already, upward pressures on housing and commercial real estate markets, as well as in markets for skilled labor, are in evidence.

**2. Segmentation of labor markets in Mozambique today – management, skilled professionals, skilled technicians, on the one hand, and low-skilled labor, on the other – is significant.** The labor assessment team heard numerous accounts of the tight available supply not only for managers and other skilled professionals, which is to be expected, but also in the category of *skilled technicians*, i.e., workers whose occupations require training, apprenticeship, and (possibly) certification. This puts great pressure both on skilled labor wages, for which an increasing premium is being paid in Mozambique’s labor market today, and on the foreign labor quota system, which presently regulates the volume of workers that may be “imported” from off-shore to compensate for the present skills gaps.

**3. Due to real skills barriers low-skilled labor is largely NOT substitutable for the labor required by the extractives and other associated, surging sectors of the economy.** Four-fifths of the workforce is rooted in the agricultural sector, where poorly educated, largely illiterate Mozambicans work hard to earn their livings. This unskilled labor pool lacks both the “soft employability” as well as the technical skills required by formal sector employers. Since rural labor is unlikely to be hired into the extractives or non-tradables sectors in significant numbers, the expected impact of possible Dutch disease on wages in the rural sector is likely to be minimal.



**4. Yet the witnessed acceleration in mega-project approvals in Mozambique has raised expectations that the extractives industry will provide new jobs for Mozambicans.** It has, and it will, but only for a small number of skilled workers. The government of Mozambique would do well to emphasize that the country’s economic future will depend on trained or educated workforce development. This message is not well understood by the public and needs to be broadly disseminated to encourage rational decision-making about labor migration, small business growth and investments near extractive industry locations, and even delayed school-leaving in favor of more education and skills-building.

**5. In the short run, skilled labor demand will be met through “imports” of foreign workers.** In the longer run, it can make strategic sense for employers and government to partner in the development of education and training opportunities for Mozambicans to supply skilled technician and professional job candidates in the coming decade.

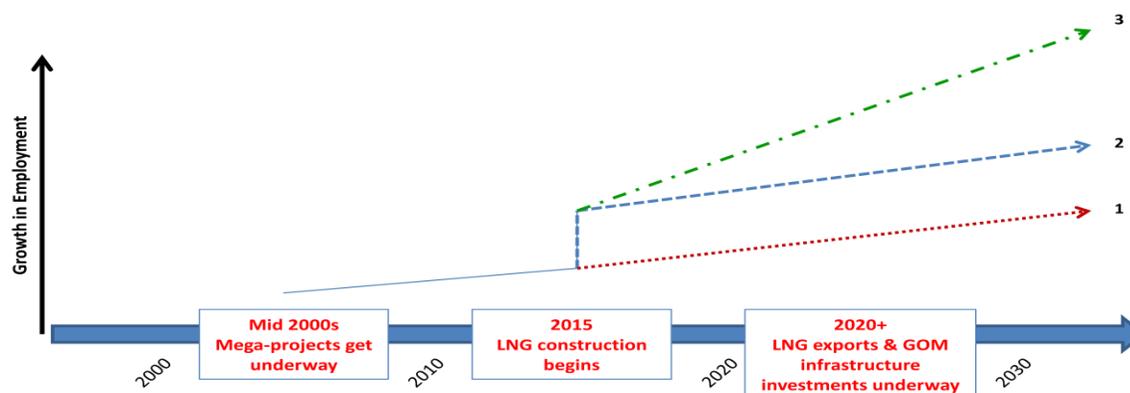
**6. Nonetheless, it is likely that some of the more ambitious or entrepreneurial will seek to move to areas of resource extraction activity.** It is thus all the more crucial that the business environment – by which we mean regulations and their uniform implementation, as well as the availability of financing – be made conducive to establishing household enterprises that are likely to spring up around mining and other extractives’ sites.

**7. It is impossible to predict levels of expected investment spending by government, the extractives industries, and other private investors.** But the greater potential for resource boom-led job creation lies in labor-intensive public works projects financed by public revenues and the growth to be generated by associated private investment. Again, the skills required to service those investments are highly concentrated in the vocational trades, whose training investment needs to be planned and implemented with great urgency.

**8. Under Dutch disease pressure, as the value of the metical strengthens and profitability is squeezed, companies will be forced to review their cost structures.** Companies will have to consider, *inter alia*, whether to retrench some percentage of their workforce, switch to less expensive imported labor, or invest in labor-saving machinery, which will be less expensive, in metical terms, in the wake of currency appreciation. Human capital development, upskilling of workers, and investments in higher value-added sectors of the economy will be needed if those higher wages (expressed in dollars or euros) are to be deemed affordable by investors.

**9. In the longer run, Mozambique’s competitiveness will be enhanced not by requiring companies to use low-skill Mozambican labor, but by investing in a high-skill Mozambican workforce.** For Mozambique to successfully employ its natural resource “blessing” to embark on structural economic transformation, creating new industries and services employment opportunities for the country’s future workforce, it must invest now in its people. This needs to be done in an integrated and coordinated way, if possible through an employment policy that puts job creation at the heart of government activities.

As described in the full report, labor market efficiency and how the economy responds to Dutch disease pressures depend on the extent to which barriers impede movement between segments of the labor market and how well information about the labor market opportunities is transmitted. Labor market information – present and expected labor demand and supply; wages by region, sector, and occupation; skills and certification requirements by occupation; working conditions – is extremely hard to come by, not only for expected labor market entrants, but also for workers already in the labor market who seek to change their work portfolios. Currently little information is available – on career options, employment opportunities, income-earning potential, or training requirements – to offer youth reasons to stay in school and choose particularly in-demand skills to learn.



If a more comprehensive training effort is not mounted, the economy will likely not enjoy a strong bump-up in the level of employment (Scenario 1 in the graphic above). Under such a

scenario one might imagine various winners and losers from the natural resource boom, as summarized in the matrix below.

	<b>'Winners'</b>	<b>'Losers'</b>
<b>Exchange Rate Effect</b>	<ul style="list-style-type: none"> <li>• Consumers of imported goods</li> <li>• Importers</li> <li>• Companies that use mainly imported raw materials and inputs</li> </ul>	<ul style="list-style-type: none"> <li>• Agriculture (producing for export or to substitute for imports)</li> <li>• Exporters</li> <li>• Alternative investment opportunities</li> </ul>
<b>Boom Effect</b>	<ul style="list-style-type: none"> <li>• Skilled people</li> <li>• Extractive industries</li> <li>• Suppliers to the extractive industry</li> <li>• Transport</li> <li>• State and tax authority</li> <li>• Service providers – e.g., hairdressers</li> <li>• Construction &amp; construction material producers</li> <li>• Banks</li> </ul>	<ul style="list-style-type: none"> <li>• Unskilled people without access to training</li> <li>• Farmers</li> <li>• SMEs</li> <li>• Manufacturing firms</li> <li>• Tourism companies</li> </ul>

If training efforts only remain focused on the skilled technicians needed for rapid expansion of the extractives industry, there will be a short-term bump-up in employment, with longer term expansion continuing at an unchanged rate (Scenario 2). However, coupled with government and private sector investments to promote growth in other, labor-intensive sectors of the economy (infrastructure development, real estate, in addition to investments to increase productivity and innovation in traditional tradables, such as agriculture, manufacturing, and tourism), Mozambique should be able not only to enjoy a short-term bump-up in employment but also to embark on structural transformation of the economy that will enjoy accelerated level of employment growth over time (Scenario 3).

The likelihood of success in achieving Scenario 3 will be enhanced if the Mozambican government finalizes its National Development Strategy, targeting a strategy to allocate future revenues from natural resource exports to grow the economy by investing in labor-intensive sectors, the returns to which will position the country for dynamic, structural transformation. Building transport, trade, and telecommunications infrastructure, providing support to labor-intensive agricultural schemes, luring investments for labor-intensive manufacturing, and expanding human capital investments to raise literacy, numeracy, technical, and management skills, will provide the foundation for Mozambique to capture benefits from, rather than be undone by the Dutch disease effects of, an expanding extractives industry over the next two decades.

Section 1 of this report presents an overview of the economy, the rising importance of extractive industries within it, the macroeconomic concerns that may arise in association with natural resource booms, and a sample of Dutch disease experiences elsewhere. Section 2 offers a conceptual model of labor markets in Mozambique, highlighting the various dimensions for consideration by the study. Quantitative parameters culled from existing sources about the Mozambican labor force, employment, labor mobility, incomes, labor institutions, minimum wages, and the informal sector and household enterprises are detailed in Section 3. Findings from the assessment about the role of labor in overall development strategy, labor skills categories and constraints, technical and vocational education and training, labor mobility, and labor market information are discussed in Section 4. To conclude the report, expected impacts of Dutch disease on labor markets in Mozambique are summarized in Section 5. Annexes to the main body of the report provide the reader with a list of all interviews held (A) by the investment team and a bibliography of sources consulted for the report (B).

# 1. Overview

The purpose of this study is to explore the potential impact of Mozambique's coming "natural resource boom," its potential appreciation of the metical, on relative prices across tradable and non-tradable sectors of the economy, and, as a consequence, its potential impact on the Mozambican labor market and overall economic competitiveness. Complementary studies are being or expect to be undertaken under the aegis of the SPEED project to evaluate these impacts on the competitiveness of Mozambican agriculture, tourism, and manufacturing.

As seen in Table 1 below, the primary sector still provides a significant, and rising, component of GDP. The figures suggest that Mozambique has not yet embarked on structural transformation of its economy that would be reflected in rising shares for and rising formalization of industry and services (Rodrik 2014).

**Table 1: Sectoral Composition of Mozambique's GDP**

Sector	2006	2011e
Agriculture, forestry, fishing, hunting	27.9	31.5
Mining and quarrying	1.4	1.5
Electricity, gas, water	5.8	4.5
Construction	3.2	3.1
Manufacturing	16.0	13.0
Trade, hotels, and restaurants	15.5	18.9
Transportation and communication	10.0	10.0
Finance, real estate, business services	8.9	8.6
Other services	7.3	4.7
Public service	4.0	4.1

*Source: African Development Bank & OECD, African Economic Outlook, 2013*

## EXTRACTIVE INDUSTRIES IN MOZAMBIQUE

Mozambican policy makers have begun to prepare for the effects of significant expansion of extraction industries. A 2005 selected issues report by the International Monetary Fund (IMF) mentioned only three "megaprojects":<sup>1</sup> the hydroelectric plant at Cahora Bassa (Tete), the Mozal aluminum smelter just outside of Maputo, and the Sasol pipeline (Inhambane) bringing natural gas to South Africa.<sup>2</sup> Output from MOZAL in 2013 still accounts for 75% of Mozambican manufacturing output and almost 50% of exports (ROM/MPD/DNEAP 2013). However, in 2013

<sup>1</sup> The term "megaproject" is defined as "large, generally foreign-owned, and capital-intensive enclave activities that rely on extracted resources and/or imported intermediate goods, and export almost all of their production" (IMF 2013, 64). KPMG International (2013) also provides an overview of the mining sector in Mozambique.

<sup>2</sup> The Republic of Mozambique (ROM)'s National Hydrocarbons Company and Sasol, a South African energy group, jointly own the cross-border natural gas pipeline.

the extractive industry was the fastest growing sector in the economy by far, growing at a real rate of 38.2%. The IMF's 2013 Article IV staff report highlights the importance of "preparing for natural resource management," foreseeing significant expansion of coal and natural gas investment, extraction, and export from Mozambique, identifying six megaprojects as now active in Mozambique (IMF 2013), with several new megaprojects foreseen.

Rich coal deposits are being exploited in northern Mozambique, in the Moatize, Lower Zambezi, and Mucanha-Vusi basins of Tete province, and also planned in Manica and Niassa provinces. Coal production in 2013 increased significantly with three additional mining companies (Rovubwé, Nkondezi, and Midwest) entering into production. Meanwhile, Rio Tinto increased coal production in the Benga mine by 230%.

Natural gas fields have been identified in the Rovuma Basin off the Cabo Delgado coast in the northeast. Licenses awarded in 2006 for deepwater gas and petroleum exploration off the northern coast have resulted in several significant natural gas discoveries made by a consortium led by the Italian firm ENI and the American energy company Anadarko Petroleum Corporation. In late 2012 they announced plans to develop onshore liquefaction facilities in Palma, Cabo Delgado province, just south of the Tanzanian border. Bids have been submitted to the consortium for construction of what is expected to be the world's second-largest liquefied natural gas (LNG) plant, after facilities in Qatar. Construction designs are being developed for the first two of a possible ten liquefied natural gas "trains," or plants. Construction is likely to start in 2015, with commercial exports theoretically planned to begin in 2018. Under current scenarios revenues to government would start flowing in the early 2020s.

In 2002 the Anglo-Australian mining group Rio Tinto began its mineral sands project in Mozambique and in 2011 it acquired a coking-coal project from Riversdale Mining Ltd. In 2004, the Brazilian mining company Vale won its first concession for a greenfield coal extraction project; its Moatize mine launched production in 2011. The Irish firm Kenmare Resources plc has been mining heavy sands in Moma, Nampula province, for titanium and other minerals since the mid 2000s.

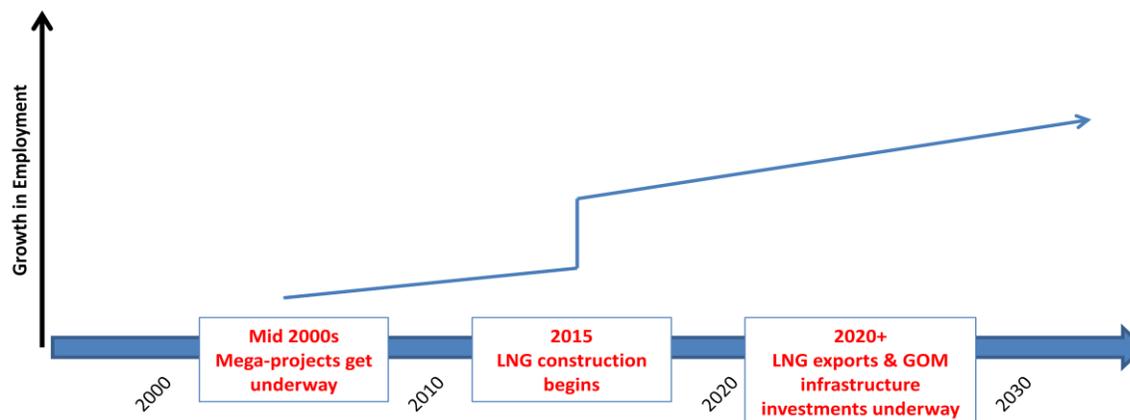
Thus in 2014 numerous Mozambican and international companies are exploring, extracting, processing, and/or exporting aluminum, coking and thermal coal, natural gas, gold, and other minerals. Infrastructure issues notwithstanding,<sup>3</sup> the IMF foresees that extraction industries will contribute an additional 2 percentage points of economic growth annually in the coming decade and raise the extraction sector's contribution to GDP to about 20% by the 2020s (IMF 2013, 68). Over the next ten years, government revenue impacts are expected to be modest as infrastructure constraints in coal are addressed and major construction projects for LNG exports get underway. In the longer run, however, the IMF suggests that nearly one quarter of government revenues, or 9 percent of non-coal, non-LNG GDP, could be derived from taxes on the extraction sector.

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<sup>3</sup> Robbins and Perkins quoted mining company officials' declarations of willingness to be patient in finding solutions to road, rail, and port deficiencies, given the scale of coal reserves found in Mozambique (2012, 230).

In addition to the extraction activities themselves, infrastructure investments are being made in utilities, transportation, and port facilities, as well as in expanded housing and commercial services to support the extraction sector. The boom, therefore, will result in highly anticipated inflows of revenues to government, domestic spending by the extractive industries and by the government, and – stylized below in Figure 1 and nuanced later in the report by possible scenarios in Figure 12 – some degree of job creation. Employment growth is expected both directly in the mining sector and indirectly in supporting sectors.

**Figure 1: Expected Timeline of Growth in Employment**



However, natural resource booms often bring potential negative repercussions for the domestic economy that need to be managed and planned for, some of which are explored in this report.

## NATURAL RESOURCE BOOMS AND MACROECONOMIC CONCERNS

Macroeconomic concerns arise when these natural resource booms occur. Appreciation of the local currency's value is one classic manifestation of so-called "Dutch disease," a phrase coined by *The Economist* in 1977 to describe the impact of natural gas exports on Holland's economy.<sup>4</sup>

<sup>4</sup> Dutch disease can arise from sudden foreign exchange inflows due to phenomena other than resource booms, such as increases in foreign aid inflows or remittances from guest workers abroad. For an easy-to-access discussion of natural resource "curses," see "The Natural Resource Trap" in Collier (2007). For an excellent overview of policy responses to natural resource booms, see Frankel (2010, reprinted in (2012)). Frankel (2010) notes that the form of exchange rate regime affects the kind of macroeconomic impact that such a boom can have on a macroeconomy. Nominal appreciation of the local currency is experience in response to a resource boom when the exchange rate regime is *flexible*, whereas a *fixed* exchange rate regime will instead result in inflation. In its 2013 memorandum of economic and financial policies to the IMF, Mozambique reiterated its commitment to a flexible exchange rate regime. The Bank of Mozambique monitors evolution of the real effective exchange rate (REER), i.e., the trade-weighted exchange rate of the metical vis-à-vis trade partners' currencies, adjusted for relative levels of inflation. To date, the REER has fluctuated +/- 20 points around 100 over the past ten years, and is presently somewhat appreciated (REER index of about 110), suggesting possible onset of currency appreciation in the face of rising coal exports (IMF 2013, 19).

In analyzing Dutch disease economists think of an economy as being comprised of the natural resource (“extractives”) sector, other “tradables” sectors (such as manufacturing, tourism, and agribusiness), and “non-tradables” sectors (such as construction):<sup>5</sup>

**Figure 2: Composition of the Mozambican Economy**

<b>Extractives (Tradables)</b>	<ul style="list-style-type: none"> <li>• Coal</li> <li>• Natural gas</li> <li>• Aluminum, other minerals</li> </ul>
<b>Agriculture (Tradables)</b>	<ul style="list-style-type: none"> <li>• Food staples (cassava, maize, sorghum, millet, sweet potatoes, rice, beans)</li> <li>• Cash crops (tobacco, cotton, sugar, cashews, soy)</li> </ul>
<b>Other Tradables</b>	<ul style="list-style-type: none"> <li>• Manufacturing (import-substitution) (agro-processing, beer, cement, personal care products, plastic wares)</li> <li>• Tourism (export of services)</li> </ul>
<b>Non-Tradables</b>	<ul style="list-style-type: none"> <li>• Construction (industrial, housing)</li> <li>• Transportation, other infrastructure, utilities</li> <li>• Retail, other services</li> </ul>

The economics literature offers various explanations for the mechanisms that lead to real appreciation of the currency. Some point to increasing inflows of foreign exchange revenues that seek to “buy” local currency as the catalyst that pushes up the price of the local currency.<sup>6</sup> Others point to increasing domestic expenditures out of natural resource revenues on non-tradables, such as construction and infrastructure investments, which pushes up the prices of non-tradables, relative to those of tradables.<sup>7</sup>

We are unaware of any estimates forecasting the potential impact of surging foreign exchange inflows into the Mozambican economy on the expected REER.<sup>8</sup> Given sizeable government revenue forecasts, future appreciation of the metical is potentially orders of magnitude greater than the 30% recent past levels of appreciation relative to the U.S. dollar, estimated by Biggs (2011).

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<sup>5</sup> Corden and Neary (1982) were among the first to describe the co-existence of booming and lagging subsectors in one economy in the wake of such a resource boom. Exploring several examples, e.g., minerals from Australia, natural gas from the Netherlands, and oil from the United Kingdom, they note that the traditional manufacturing sectors faced negative pressures in each instance. They extended their analysis to include examples where traditional manufacturing is confronted with more technologically and economically successful sectors, as in Ireland, Japan, and Switzerland, where they observe similar impacts.

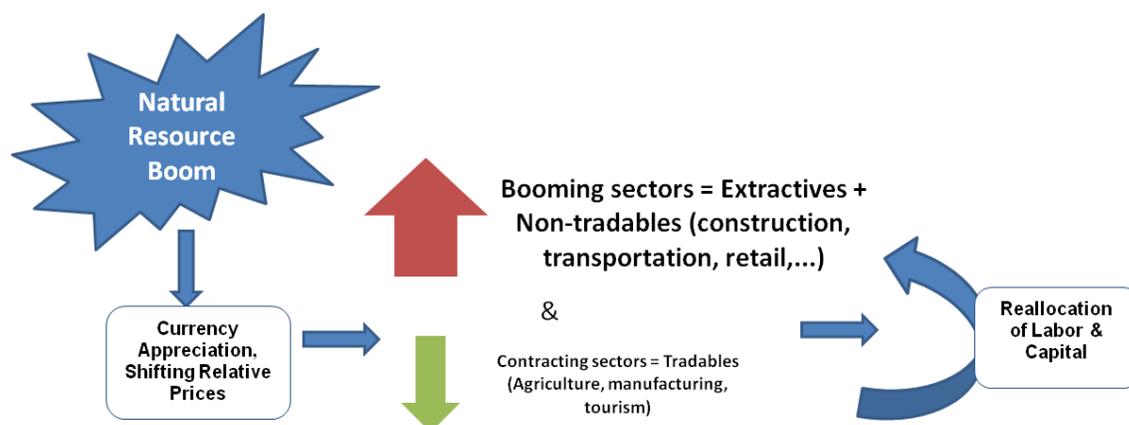
<sup>6</sup> “What starts essentially as a foreign exchange problem with the appreciation of the local currency (as a result of a massive influx of revenues from the sale of hydrocarbons)...” (Ziyadov 2012, 358-359).

<sup>7</sup> “One of the possible harms of an oil export boom is that the rise in oil earnings leads to increased public and private spending, which in turn leads to a sharp appreciation of the real exchange rate...” (Sachs 2007, 181).

<sup>8</sup> The Governor of the Bank of Mozambique acknowledged these risks in an address to an annual research conference (BM 2013).

When currency appreciation takes hold, the domestic price of imports – for example, prices in meticals of imported or importable foods such as maize and rice or prices of imported fertilizers and other agro-inputs – will fall, as it will take fewer units of domestic currency to buy one unit of foreign exchange. This also means that the domestic prices of exports – sugar, cotton, tobacco, coconut, cashews, etc. – or exportables – clothing, wood products, and other manufactured goods – will fall, too, as international prices, determined by international markets and expressed most commonly in U.S. dollars, are converted with fewer units of domestic currency into domestic price equivalents. Thus, incentives to increase imports of cheaper goods and inputs will increase and incentives to produce import-substituting products or export (of goods other than the natural resources that caused the boom in the first place) will decrease. Note that the impact is felt not only on products the country actually exports or imports – but also on those produced for the domestic market. For example, a country may produce cassava purely for domestic consumption, but this competes in the consumption basket with grains that may be imported. When this happens, the *relative* prices of goods and services bought and sold in local, non-tradable sectors rise. Incentives to reallocate labor and capital into construction, transportation, retail, etc. will increase, as depicted in Figure 3.

**Figure 3: Theoretical Impacts of Dutch Disease Across Sectors**



As relative incentives to engage in the extractives and non-tradables versus traditional tradables sectors shift, employment and wage effects may be noted. The demand for labor in the former, i.e., extractives and non-tradables, will increase and wages will rise. The extractives industries, however, are capital-intensive industries that do not usually create significant new, direct employment opportunities (Kaplan 2013). It is more likely that employment in indirectly affected sectors may increase, either through local spending by extractives in supporting goods and services or through increased spending – on infrastructure by government, fueled by revenues generated by extractive activities, or by the private sector, in response to perceived new business opportunities generated by the extractive industry.

Assuming that labor is mobile across sectors of the economy, there may be indirect employment and wage effects perceived in other sectors of the economy as well as labor is drawn from other sectors of the economy. Wages in the traditional exportables sectors, for instance, could rise, if labor is drawn out of agriculture, tourism, or manufacturing and into extractives and non-tradables. If labor flows out, wages may rise, leading to higher labor costs for employers.

Depending on the value chain and the importance of the wage bill in it, higher wages might then have a negative impact on competitiveness.

Frankel describes Dutch disease as initiated by “a strong, but perhaps temporary, upward swing in the world price of the export commodity,” which in turn leads to:

- “a large real appreciation in the currency (taking the form of nominal currency appreciation if the country has a floating exchange rate or the form of money inflows and inflation if the country has a fixed exchange rate);<sup>9</sup>
- an increase in spending (especially by the government, which increases spending in response to the increased availability of tax receipts or royalties –discussed below);
- an increase in the price of nontraded goods (goods and services, such as housing, that are not internationally traded), relative to traded goods (manufactures and other internationally traded goods other than the export commodity);
- a resultant shift of labor and land out of non-export-commodity traded goods (pulled by the more attractive returns in the export commodity and in non-traded goods and services); and
- a current account deficit (thereby incurring international debt that may be difficult to service when the commodity boom ends).” (2010, 19)

Further, Frankel notes, if the crowded-out tradable goods are concentrated in the manufacturing sector, de-industrialization can take place.

If the resource boom can be sustained over an extended period of time, the shift of resources out of traditional exports and into natural resource extraction and non-tradable sectors may not be considered adverse. Many economists, however, value the productivity improvements that competitive production for the world market encourages, suggesting there are long-run, economic costs to reductions in traditional export activities.

However, Dutch disease’s macroeconomic impacts are not inevitable. Revenues can be consumed at once, with attending negative consequences, or they can be isolated from the domestic economy to minimize pressure on the domestic currency or invested in stabilization funds to yield income and be harvested in a more deliberate manner in the future. If 100% of the new foreign exchange earnings are spent abroad on imports, there will be no impact on the local currency market.<sup>10</sup> Alternatively, negative impacts can be forestalled through prudent government fiscal policy. For example, countries may establish sovereign wealth funds offshore to minimize the impact of incoming foreign exchange on the exchange rate, or set in place strategic investment programs to develop competitive strengths outside of the extractives industry, or a combination of

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<sup>9</sup> In either case, as pointed out by Ebrahim-zadeh (2003), real exchange rate appreciation occurs, weakening the competitiveness of exports, especially traditional exports unaffected by the boom. Mozambique’s exchange rate regime can be characterized as a managed float.

<sup>10</sup> Ebrahim-zadeh (2003).

both. It is not the purpose of this paper to review those policy measures. A few examples of Dutch disease experiences are compared below.

## A SAMPLE OF DUTCH DISEASE EXPERIENCES

Oil-exporting, developing countries, such as Nigeria, Indonesia, Mexico, and Angola, provide examples of countries that have encountered severely destabilizing macroeconomic imbalances in the wake of natural resource exploitation. The Dutch disease literature also has considered examples of countries experiencing increases in exports of minerals (such as Botswana), countries experiencing sudden terms-of-trade shocks, and countries experiencing strong increases in foreign exchange receipts from foreign aid and remittance inflows. Findings of selected case studies are summarized below, focusing on detailed quantitative information on the variables of interest to this paper (in particular, specific labor market impacts), where provided.

Bevan, Collier, and Gunning (BCG 1999) compare the experiences of **Nigeria** and Indonesia over several decades. In Nigeria, they document the fall in price indices of tradable goods and the collapse in production of export-crop agriculture (cocoa, oil palm, rubber) that accompanied the oil boom (1970-81). Food imports were meant to be regulated by quotas; although fairly ineffective at keeping out imports due to porous borders, quotas contributed to sharp increases in domestic food prices.<sup>11</sup> The civil service expanded in Nigeria annually by 11.3% from 1973-83, compared with only 5.5% in Indonesia over the period 1975-83. Both governments doubled civil service wages in the mid 1970s, with some less-than-effective attempts made to extend minimum wages into the private sector in both countries.

BCG found no evidence of Dutch disease in **Indonesia**. They highlight Indonesia's pro-agriculture policies, aimed at achieving rice self-sufficiency, which not only countered the effects of Dutch disease but put in place a foundation for pro-poor GDP growth. Indonesia invested 20% of its budget in agriculture during the oil boom, compared with only 2% in Nigeria (BCG 1999, 411). Indonesia's agriculture also benefited from the availability of Green Revolution technology to improve rice yields, non-existent in Nigeria. In terms of skilled labor development, in the early 1970s, 1 in 4 teenagers attended high school in Indonesia, compared with only 1 in 20 in Nigeria. This led to higher skills premia and greater wage inequality in Nigeria.

In contrast to Indonesia's experience, Usui (1997) found that the **Mexican** economy suffered from Dutch disease. While both countries devalued their currencies during the height of their booms, Mexico's weak macroeconomic management led to capital flight. The more successful Indonesian record was due in part to the ability of internationally trained economic technocrats to maintain a dominant position in Indonesian policy-making. In contrast, it took Mexico significantly longer to embrace neoclassical economic orthodoxy.

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<sup>11</sup> Illegal food imports, however, were common by the mid 1980s. In the early 1980s, one of the co-authors worked in Northern Cameroon, where she personally observed informal, cross-border trade of Cameroonian rice into Northern Nigeria, in exchange for consumer goods. In the mid 1980s, Benin, which was dwarfed by its neighbor in terms of population, was one of the world's largest importers of milled rice.

Oil-derived revenues accounted for an incredible 84% of total government revenue in **Angola** and nearly 50% of GDP in the late 1990s and early 2000s (Kyle 2010).<sup>12</sup> With nominal exchange rates fixed and inflation running at over 10% per year, Angola's currency, the real value of the Kwanza appreciated steadily relative to the US dollar between 1999 and 2008. Kyle noted that this made it difficult for domestic food producers to compete with imports. "Thus, unlike Nigeria, the problem is not one of a healthy agricultural sector which declines and collapses in the face of competition from abroad. Rather, Angola faces the even more difficult task of reactivating an agricultural sector that is already at a standstill in the face of adverse incentives." (2010, 18)

Pegg (2010) traces **Botswana's** experiences with a boom in diamond exports that began in the 1980s, and the literature's conflicting opinions about whether this has led to Dutch disease or not. Pegg notes the reallocation of skilled labor from manufacturing into the extractives, being replaced in the source industries by less skilled, previously unemployed agricultural workers. However, given the small direct employment effect of the mines, the overall resource movement effect was "minimal." As for crowding out of non-extractives sectors, Pegg presents structural explanations (rather than Dutch disease) for low growth rates of agriculture and manufacturing. He argues that agriculture in Botswana is constrained by severe arable land supply constraints and climate. Outside of cattle-raising, Botswana's agricultural policymakers have few investment alternatives. Botswana's manufacturing sector is hampered by its small market size, its proximity to the industrial powerhouse next door, South Africa, and its uncompetitive utility costs. Hailu et al. (2011) also point out that Botswana's currency, the Pula, was devalued regularly over more than 25 years to keep real currency appreciation to a minimum.

More recently, the Government of Botswana and the De Beers Mining Company have promoted a "beneficiation" strategy to develop diamond value-added processing jobs in Botswana. Grynberg (2013) argues that De Beers, faced with a loss of stature as the pre-eminent global diamond cartel leader, shifted to a "Supplier of Choice" strategy that embraced support for raw material value-added processing – e.g., sorting, cutting, and polishing – in Botswana, rather than in Europe in order to maintain cooperative economic relations with a key raw material supplier. Some 3,000 new jobs were created by this downstream linkages project.<sup>13</sup>

**Norway's** oil boom exemplifies successful management of Dutch disease pressures (Larsen 2004). Labor reallocation into the extraction sector was modest. A centralized wage formation system, i.e., a national level tripartite wage-setting process that based wage increases on productivity increases, allowed policymakers to limit general wage pressures. Volumes of oil exports stabilized early and revenues generated were invested in an overseas Petroleum Fund to shield the economy from excessive pressures to spend and protect from currency appreciation.

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<sup>12</sup> This compares with 59.3% of revenues and 40% of GDP in Kuwait and 58.2% of revenues and 19% of GDP in Venezuela.

<sup>13</sup> Botswana's diamond export business suffered tremendously from the 2008-09 global recession, so this figure certainly fell. Data on total employment associated with the capital-intensive diamond *mining* sector are difficult to identify. Grynberg compares Botswana's diamond cutting and polishing employment record with India's, where some 800,000 workers are employed in a diamond cutting and polishing industry based entirely on imported rough diamonds.

**Table 2: Comparison of Resource Booms & Impacts**

	<b>Norway</b>	<b>Mexico</b>	<b>Nigeria</b>	<b>Indonesia</b>	<b>Angola</b>	<b>Botswana</b>
Boom in	Oil	Oil	Oil	Oil	Oil	Diamonds
Period of Boom	1980s to present	1980s	1973 to present	1970s-1980s	1970s to present	1980s
GDP Growth, 1975-2012 (ann. average)	2.9%	3.2%	3.5%	5.8%	5.8%	7.3%
<b>IMPACTS ON</b>						
Exchange Rate	Appreciation contained through establishment of overseas Petroleum Fund.	Appreciation controlled via devaluation.	Consistent appreciation, <sup>14</sup> yet resistance to devaluation to preserve rents	Appreciation controlled via devaluation.	Steady real ER appreciation vs. US\$.	Pula rose > 20% relative to Rand, but depreciated significantly vs US\$ and euro; 10 devaluations undertaken 1977-2005.
Spending	Public debt strictly controlled. Income from Fund used to support counter-cyclical investments.	Deficit spending expanded rapidly, biased toward current spending and investments in oil sector.	Civil service expansion.	Invested in pro-poor, rice self-sufficiency strategy.	Only 1.3% of operating & 5% of investment budgets spent on agriculture; significant general infrastructure spending.	Strong increase in public spending.
Labor Market	Controls on collective bargaining kept wage increases to minimum		Higher public sector employment, wages, drew labor out of food agriculture	More moderate increase in civil service (5.5%)		Rapid public sector wage increases, which led to increase in “queuing” as workforce entrants waited for civil service jobs. <sup>15</sup>
Agriculture, Tradables	Countercyclical investments to maintain a diversified manufacturing & export base; investments in education, research, & development to build human capital outside of the extraction industry.	Pursuit of North American Free Trade Agreement, negotiation of which began in 1990, meant to open new markets for agricultural and manufactured exports from Mexico.	Export agriculture collapsed; import-substitution agriculture weakened by cheap imports.	Government invested to raise productivity; growth remained balanced across sectors.	Agriculture sector growth flat, though is primary occupation for > 2/3 population.	Strong Pula led to increased food imports from South Africa.

<sup>14</sup> The authors also estimate that over the period 1970-81 the real exchange rate appreciated by nearly 120 percent (Bevan, Collier, and Gunning 1999, 52).

<sup>15</sup> Over 40% of formally employed workers in Botswana were employed in the mid 2000s in the public sector at average wages exceeding private sector equivalents by over 40%, exacerbated by low levels of labor productivity (Pegg 2010, 17, citing the IMF 2007).

To summarize, natural resource booms have indeed led to currency appreciation, current and investment spending effects, and (more limited) resource reallocation effects (Table 2). In Nigeria export agriculture collapsed, while Angola's agricultural sector has stagnated. In contrast, Indonesia's proactive approach to investments to raise agricultural productivity helped the sector to resist the worst effects of currency appreciation, while Norway's efforts to promote human capital development built skills and competitiveness outside of the petroleum sector. Labor movements into extractives and the public sector have been observed in Nigeria and Botswana, in part stimulated by increased public expenditures for a higher public sector wage bill. Skills shortages and limited direct employment effects of extractives industries were noted in Botswana. The cases of Angola and Botswana remind us that other structural explanations, besides Dutch disease, help explain why economic growth outside of the extractive industry stagnates.

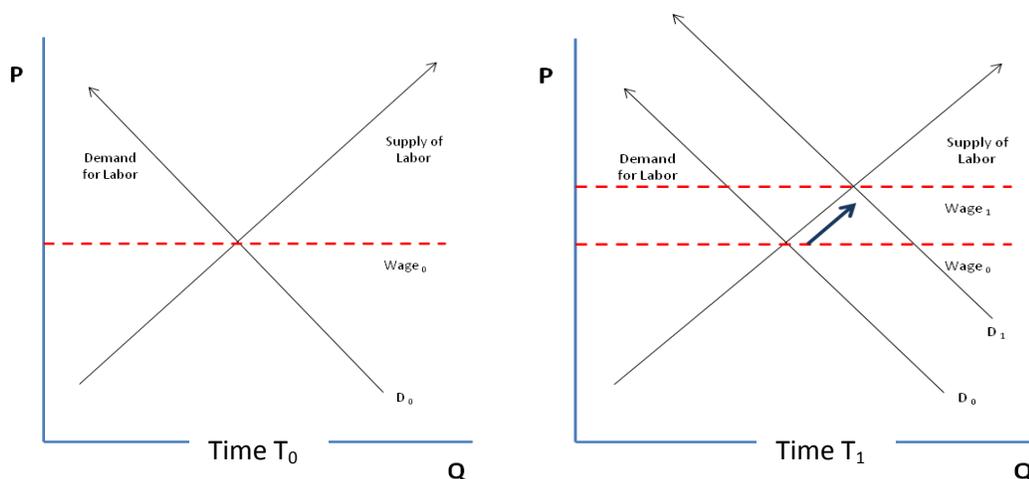
## 2. Labor Markets in Mozambique: Conceptual Model

This section lays out a conceptual model for thinking about labor issues in Mozambique. To fully understand their multi-dimensional features requires an understanding of what has been termed “the labor *sector*,” a concept broader than just labor markets (Salinger and Wheeler 2010a). A multi-dimensional approach to understanding labor market issues allows for consideration of workers’ rights, labor laws and regulations, the formal government institutions meant to enforce those laws and regulations, civil society organizations that may represent or advocate on behalf of workers or employers, supply and demand forces in the market and the employment and wage levels to which they lead, and education and vocational training programs and their impacts on skills and employability of labor market participants.

The theory of Dutch disease suggests that labor will “flow” out of sectors whose relative prices fall in the wake of currency appreciation into those sectors whose relative prices rise. In order to anticipate whether, and if so, to what extent, such reallocations will be observed in Mozambique, it is important to understand what drives employment, wages, and labor migration in Mozambique today and how “flexible” labor markets are in terms of movements of labor from rural to urban markets, south to north, outside of and into Mozambique, and across sectors of employment.

As classically defined, a labor market is influenced by shifts in demand and possible shifts in supply as workers react to new relative wages. A simple diagram of a labor market depicts traditional supply and demand curves (Figure 4). The point of their intersection marks the price of this factor of production, i.e., the prevailing market wage. When the demand for labor increases – e.g., due to an expansion of the natural resource sector that requires additional workers in a wide range of skills sets, for example – the equilibrium wage will rise from  $Wage_0$  to  $Wage_1$ , as shown below.

**Figure 4: Simplistic Partial-Equilibrium Labor Market Diagram,  $T_0$  and  $T_1$**



This very simplistic model requires overlays of increasing detail in order to configure it appropriately for labor market conditions in Mozambique in 2014 and expected conditions in

2024. It is important to nuance the analysis in a number of ways. First, these shifts will not be felt in the aggregate across the entire labor market. This requires disaggregation of the labor market into relevant components (skilled/unskilled, rural/urban, formal/informal, etc.). Second, the transition paths of adjustment by labor market segments to new relative incentives are likely not smooth but instead involve costs that affect outcomes. Third, labor market shifts do not take place in a vacuum, but are likely to be influenced by policies put in place by government to shape labor market outcomes. Each of these tempering factors is discussed in turn below.

Relevant layers of labor market disaggregation in a typical developing country include:

- Labor markets are segmented, marked by the co-existence of rural and urban labor markets, formal and informal labor markets, un- and under-employment, and domestic and regional labor markets.
- Employers' occupation and skill requirements, which differ by sector or industry, differentiate labor demand, leading to further segmentation of the labor market. Sharp wage differentials are usually observed for high-skill and medium-skill positions.
- Labor supply is differentiated by age/experience as well as different levels of education and training (which may or may not correspond to different levels of measurable skills).<sup>16</sup>
- In situations of labor skills shortages, wage premia are typically bid up by employers, high-skilled workers may be “poached” by one employer from another, labor may migrate in response to the perceived wage premia, and/or labor may cross borders (or be brought in by employers) to fill the skills gaps.
- Labor market participation may also be differentiated by gender. For instance, men and women may be expected to fill or abstain from filling certain occupations, or they may respond differently to relative wage incentives to move from the farm to the city, from the south to the north, or across borders within a region, depending on household or cash labor responsibilities that may be shaped by culturally specific gender roles. Tradables sector occupations may be more or less focused on one gender or the other, with gender-biased implications if Dutch disease takes hold (Frederiksen 2006). As child-bearers and child-raisers, lack of access to information and tools for controlling fertility and to appropriate child care for young offspring may further limit women's abilities to fully engage in labor markets outside the home.
- Labor contracts may involve a variety of institutional arrangements, affecting access to land, work, leisure, social networks, etc.
- A household may send members to participate in different labor markets, either simultaneously or staggered at different times throughout the year.<sup>17</sup> For example, members of rural households, whose primary occupation is farming, may sell to or

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<sup>16</sup> It is possible to have earned a school leaver's certificate without having learned to read, for example.

<sup>17</sup> The concept of household jobs portfolios is further developed in Jones and Tarp (2012).

exchange their labor with other farmers, work in slow periods to produce goods or services for sale in rural or urban markets, operate non-farm businesses in addition to their farming work, migrate to cities or outside one's home country for some or all of the year to work and remit a share of wages back home, and so on. Food security pressures to grow crops and livestock may result in seasonal variation in labor supply to non-farm work.

- Household members also make private education investment decisions, trading off earnings today for investment in education/training today and expected earnings tomorrow. On the other hand, lack of information about income-earning opportunities with increased education may lead household members to inefficient decisions about time spent in school or training programs.<sup>18</sup>
- Spatial distribution of resources, such as arable land, rainfall or access to water for irrigation, mineral resources, and urban concentrations also affect the geographic distribution of employment opportunities.
- Another aspect of labor force structure is linked to the structural composition of an economy. One of the most basic tenets of economic development is the notion that as countries grow, their economies “transform structurally,” i.e., become more diversified. In a very poor, traditional country a large part of national income (gross domestic product, or GDP) and its workforce will typically be concentrated in the primary sector, i.e., agriculture, fishing, and forestry. With economic growth, industry and services sectors tend to become relatively more important contributors to GDP as well as employment, and the share of agriculture retreats.<sup>19</sup>

Pursuing data to quantify the contours of these observations in Mozambique helps us to break down aggregate labor demand and labor supply curves into more relevant, disaggregated curves. This is important because the responsiveness of supply or demand to wage changes, that is, price elasticities of demand and supply, are likely different for different segments of the labor market.

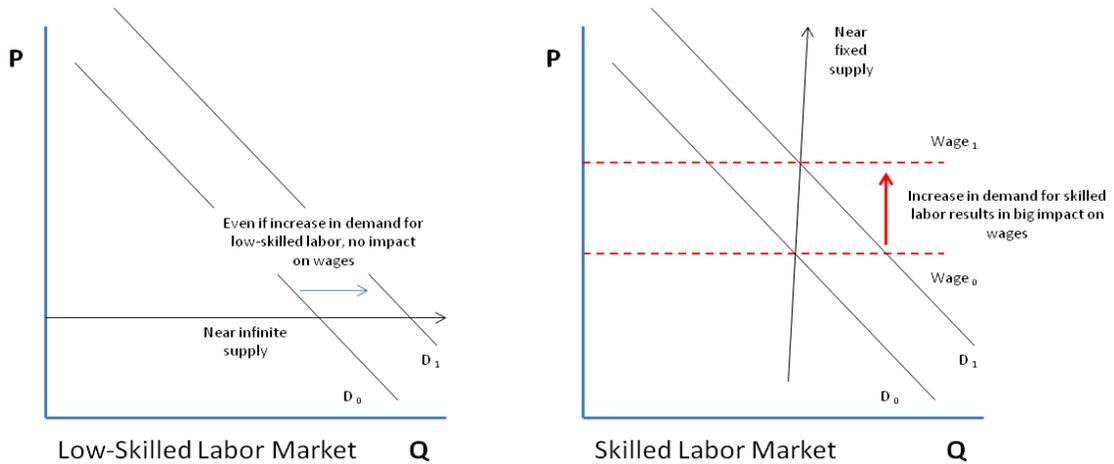
As depicted in the left-hand side of Figure 5, the supply of low-skilled labor may be nearly infinite in supply; in this segment of the labor market, an increase in demand does not change the prevailing wage. On the right-hand side, we see the nearly vertical supply curve for skilled labor, near fixed in supply, at least in the short term; in this segment, the same shift out in demand leads to significant upward pressure in wages. Alternatively, if skilled labor supply can be augmented through the “import” of skilled workers from abroad, the wage premium for skills may not rise as sharply, as seen in the right-hand side of Figure 6.

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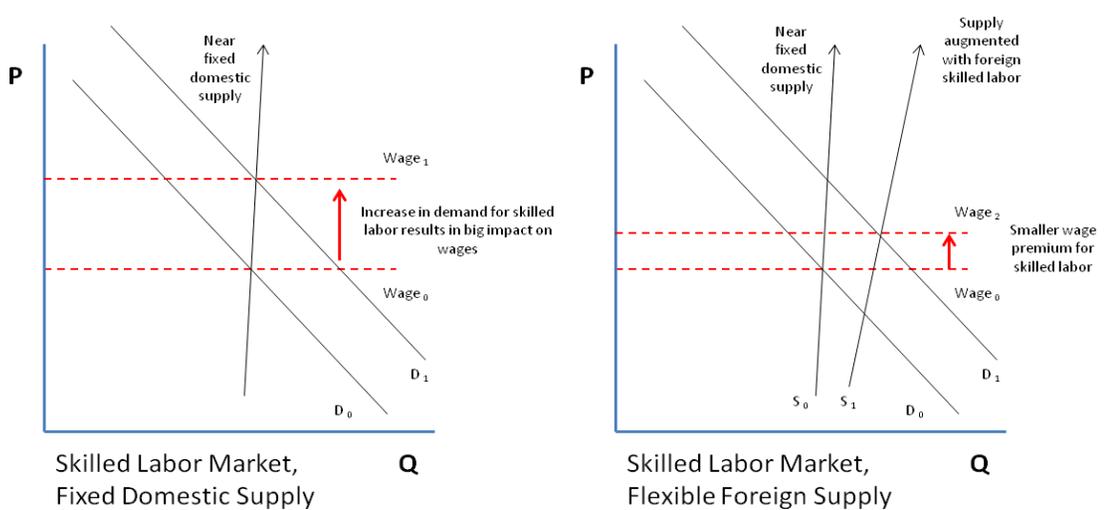
<sup>18</sup> An experiment on the impact of information on wage earnings of graduates conducted in the Dominican Republic found that middle school-aged males significantly underestimate the returns to secondary education, while providing them with information about average wages for men with different levels of education (primary school, secondary school, university) led to a small but significant increase in their school attendance over the next four years in most, but not the poorest households. See Jensen (2010), summarized by the Abdul Latif Jameel Poverty Action Lab at Massachusetts Institute of Technology; see <http://www.povertyactionlab.org/evaluation/impact-information-returns-education-demand-schooling-dominican-republic>.

<sup>19</sup> The classic reference here is Kuznets (1971).

**Figure 5: Segmented Partial-Equilibrium Labor Market Diagrams**



**Figure 6: Skilled Labor Diagram under Fixed or Flexible Foreign Supply Conditions**



Substitutability of labor between segments may also be extremely limited. For example, employers may require literacy as a minimum qualification for consideration. More likely, they seek job applicants with specific skills for particular occupations. Tourism sector workers may be required to speak more than one language fluently. Construction workers may be required to possess skills in specific vocational trades, or may be required to have mathematics or safety/security knowledge. Miners may be required to be certified for safe operation or maintenance of specific machinery. More broadly, employers often seek “soft skills,” defined variously by different sources, but generally including some combination of reliability on the job, communications and listening skills, critical thinking and problem solving abilities, and ability to work in teams. Demonstration of these soft skills is expected at all occupational levels, even for the most basic, low-skilled positions (e.g., “construction helpers,” guards, gardeners, household help).

In addition to nuancing one’s analysis of labor market demand and supply forces per above, it is important to consider what it takes for supply and demand to “meet,” i.e., the information flows required for efficient labor market matching. The global literature is replete with diagnoses of

“skills mismatches,” in developed and developing countries alike.<sup>20</sup> Employers everywhere speak of jobs that remain unfilled because the right candidates cannot be identified.

This is a classic labor market information gap. Part of the answer to solve the gap may be closer coordination between companies and government, so that their expected employment needs can be foreseen and training programs undertaken with sufficient lead time. Another part of the answer may involve providing detailed information to young people and their families as they decide how long to stay in school versus leave early to help support the family and what skills or career pathway to pursue.<sup>21</sup> More could also be done to advertise available positions (requirements, work conditions, pay scales, etc.) on electronic job boards, in newspapers, on the radio, via cell alerts, etc.

Labor market adjustment costs are also important to consider. Being able to respond to increased wages in a distant province may require costs that create barriers to entry into new labor market opportunities. Displacement costs – transportation costs, opportunity costs, temporary lodging costs, search costs to find new employment, housing, schools, lack of local social networks to help mitigate some of these costs, etc. – may be sufficiently high to preclude optimal labor market adjustment. From employers’ perspectives, costs associated with displaced workers – providing housing, canteens, and other services to workers from afar – may also be costly.

Responses may also be conditioned by institutional factors. Markets for labor, like markets for other factors, goods, and services, are also influenced by laws and government policies. Governments may choose, through labor laws, industrial zone rules, or other legal and administrative measures, to regulate wages, employment numbers, conditions of hiring and firing, employee association and workplace representation, working conditions, workplace disputes, employment-associated benefits, and other work-related factors. These may have an impact on labor costs and returns to labor, and thus on supply and demand curves. Governments may also offer incentives to encourage labor market outcomes, such as training programs, training cost subsidies, housing and other urban infrastructure development programs, etc. It is important to understand what the labor sector’s legal framework includes, which elements of that framework are effectively enforced and which are not (and why not), and which elements of that framework may be problematic in terms of workplace conflicts.

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<sup>20</sup> Examples include World Bank (2012a) and Dobbs et al. (2012).

<sup>21</sup> In a study undertaken in the Dominican Republic (DR) under the auspices of the Abdul Latif Jameel Poverty Action Lab at Massachusetts Institute of Technology, against a backdrop of high drop-out rates from secondary schools, Jensen (2010) found that eighth grade boys (the last year of compulsory schooling in the DR) have extremely limited information about the returns to secondary schooling. Students from a randomized subset of middle schools, who were provided with data on potential earnings, completed on average 0.2 more years of schooling over the next four years. The effect of information was more pronounced for least poor students, whereas among the poorest, the increased information had no discernible effect on schooling. Jensen writes, “The effects of the treatment [*i.e., the dissemination of earnings information*] on schooling are large and striking; there are few examples of policies or interventions that result in a 0.20- to 0.35-year increase in schooling, much less interventions that are as potentially inexpensive as this one.” (Jensen 2010, 544) The research is interesting here because it suggests that provision of information may encourage youths and their families to place a higher value on education, despite the deferred present earnings that this entails.

Government policies are issued by the legislature, and are enforced by the executive branch, or administration. This may include ministries of labor, public employment offices, labor inspectorates, specialized judiciary bodies, arbitration councils or other dispute resolution agencies to resolve workplace disputes, and tripartite boards that oversee labor relations. Non-governmental organizations may also play roles in the labor sector, either in support of workers' rights or specific worker groups (such as women) or in advocacy of certain dimensions of workplace support (such as daycare facilities).

Labor market responses may also be conditioned by institutional actors. Labor markets behave one way when the actors in question are individuals who seek to maximize their utility by hiring or presenting themselves for hire according to personal, firm-level, or household preferences. However, in some industries in some countries workers may be organized in groups, i.e., trade unions, to ensure that collective interests are defended. Negotiation of collective bargaining agreements among so-called "tripartite" actors – i.e., government, employers, and workers – may introduce a different dynamic into labor market relations.

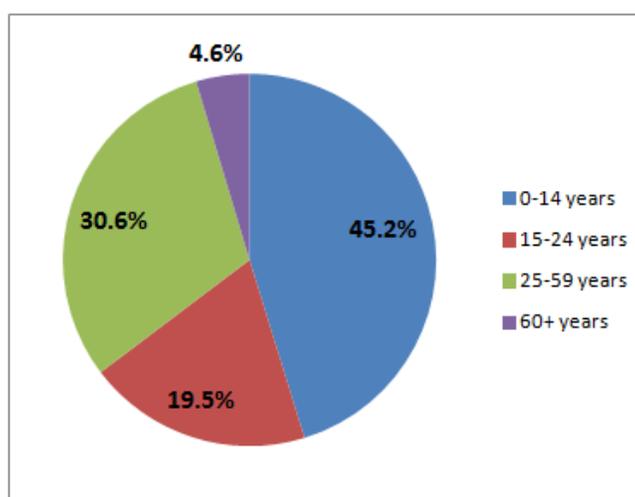
### 3. Labor Markets in Mozambique: Quantitative Overview

This section provides insights into Mozambique's labor markets that are derived from secondary data sources and labor assessment interviews. Household, enterprise, labor, and agriculture surveys in Mozambique provide a variety of sources of data.<sup>22</sup> The labor assessment team relied on key secondary analysis and reports from local and international researchers and agencies.<sup>23</sup>

#### DEMOGRAPHICS, EMPLOYMENT, & LABOR MOBILITY

According to national statistics, Mozambique in 2012 was a country of 23.7 million people, of whom half between the ages of 15 and 59 (Figure 7). Children ages 0-14 years comprise 45% of the entire population, 15-24 year-olds (youth) are 20%, and those over 60 years are almost 5% of the total population. This leaves 7.3 million, or 30.6% of the total population, in the adult workforce, ages 25 to 59 years. Of these, just over 1 million were registered with the national social security system in 2012, i.e., are formally employed, of which just under 350,000 were considered "active." At 2.5% per year, average 2010-2012, the population is still growing quite rapidly, although that rate has fallen from highs of over 3% in the early to mid 1990s in the wake of the civil war.

Figure 7: Mozambique, 2012 Demographic Breakdown by Age



Source: INE

An estimated 300,000 new labor market participants enter the work force each year (AFDB and OECD 2012). According to the Ministry of Labor (2012), just over 280,000 jobs were created in 2012, including jobs in the public sector, the private sector, self employment, hiring of foreigners,

<sup>22</sup> The most relevant are the *Inquéritos Agregados Familiares* (IAF), 1996/7, 2002/3; *Inquérito ao Sector Informal* (INFOR), 2004; *Inquérito Integrado à Força de Trabalho* (IFTRAB), 2004/5; *Inquérito aos Orçamentos Familiares* (IOF), 2008/9; *Inquérito as Indústrias Manufactureiras* (IIM), 2012; *Inquérito Contínuo aos Agregados Familiares* (INCAF), 2012 (only 2 quarters completed); and *Trabalho de Inquérito Agrícola* (TIA), conducted in 1996, 2002, 2003, 2005, 2006, 2007, and 2008, then revised as the *Inquérito Agrícola Integrado* (IAI), 2012.

<sup>23</sup> Our literature search identified Ibraimo (2014); Ali (2013); Ennis (2013); Fox and Sohnesen (2013); Jones and Tarp (2012); Schindler and Giesbert (2010); Cramer, Oya, and Sender (2008a); Warren-Rodriguez (2008); De Vletter (2007); Francisco and Paolo (2006); Massingarella, Nhate, and Oya (2005), as well as MPD/DNEAP (2010) and reports on the INFOR (2006), IIM (2013), and INCAF (2013).

and mining jobs in South Africa.<sup>24</sup> These figures, if comparable, suggest that job creation in Mozambique is not keeping up with growth of the working age population.

Nearly 70% of the labor force is employed,<sup>25</sup> as disaggregated in Table 3. Rates of employment are substantially higher in rural, compared with urban, areas. Broken down by education level, they are lowest for those who have “only” completed secondary school education, a rather odd statistic, since that represents a substantial education investment in Mozambique.<sup>26</sup>

**Table 3: Rates of Employment in Mozambique by Gender**

(%)	Men	Women	Total
Total	67.4	70.3	69.0
<b>BY RESIDENCE</b>			
Urban	48.5	43.5	45.9
Rural	78.0	83.3	81.0
<b>BY EDUCATION</b>			
None	75.9	80.1	78.9
Primary, to 5 <sup>th</sup> grade	77.2	78.5	77.9
Primary, 6 <sup>th</sup> -7 <sup>th</sup>	61.2	54.2	58.3
Secondary	50.1	34.4	43.6
Higher	60.8	58.0	59.9
Don't know	65.6	77.6	70.1

*Source: INE (2013b)*

And, as typically found throughout the world, the rates are also lower for youth (ages 15-24), compared with those of adults, ages 25 to 64. Perhaps the most striking feature of the Mozambican labor force is the high share of workers – 80% – who consider agriculture to be their primary occupation (Table 4 and Table 5).<sup>27</sup> Along with the GDP sectoral breakdown figures in Table 1, this figure further confirms the fact that dynamic transformation of Mozambique's

<sup>24</sup> It is not clear how reliable these data are, and to some extent they raise more questions than they answer, especially for self employment. Data presented in the Ministry of Labor's (MITRAB) labor statistics bulletin are not internally consistent and provide no background on collection methodology, but represent the best official data available. This highlights the need for a strong labor market data collection system to underpin policy.

<sup>25</sup> Mozambique's INE uses the term “employed” to mean the sum of a) those who are salaried workers, b) those who work in the home but are not remunerated, and c) those who work for themselves.

<sup>26</sup> This is an odd finding, for surely a secondary school graduate in Mozambique has marketable skills. It could imply some sort of “employment expectations trap,” whereby completion of secondary school increases the graduate's expectation that she or he should be able to land a formal job, yet the level of education actually does not provide enough training to qualify for formal sector employment, which likely requires some post-secondary education. Still, that being said, secondary school graduates may feel overqualified for, and thus reject, employment in agriculture.

<sup>27</sup> The agriculture sector in Mozambique includes both subsistence farming (e.g., maize, rice, other grains, groundnuts and beans, cassava, sweet potato, other vegetables, livestock), traditional export crop cultivation, either on organized plantations or as outgrowers (e.g., tobacco, sugar, cotton, bananas and other fruits, cashews), and non-traditional cash crops (e.g., agro-forestry, biofuels, soybeans, poultry). See MPD/ DNEAP (2010), USAID (2011), and Monitor Group (2012). Biofuels production refers to sugarcane, sweet sorghum, and jatropha; see Arndt et al. (2008).

economy has yet to have taken place. This is an extraordinarily high share of the economy that has not yet transitioned out of the primary production sector into industry or services sectors.<sup>28</sup>

**Table 4: Allocation of Workers, by Sector (%)**

	96/97	02/03	04/05	08/09	Change, 96/7-08/9
Agriculture	85.2	79.9	80.7	80.6	-4.6
Commerce	4.0	7.3	7.8	7.9	4.0
Other services	2.7	2.8	2.9	2.9	0.2
Manufacturing	2.7	3.6	2.8	2.7	0.0
Construction	1.4	1.6	1.4	1.7	0.3
Education	0.8	1.6	1.6	1.7	0.9
Government	1.2	1.2	1.2	1.1	-0.2
Transport	1.1	1.1	0.8	0.8	-0.2
Health	0.5	0.5	0.5	0.4	-0.1
Mining	0.5	0.5	0.2	0.2	-0.3

Source: Jones and Tarp (2012), p. 26

**Table 5: Distribution of Employment, by Principal Occupation (%)**

	Total			Urban			Rural		
	Total	M	W	Total	M	W	Total	M	W
Manager	0.3	0.6	0.1	0.9	1.4	0.3	0.1	0.3	0.0
Technical (University)	1.7	2.4	1.1	5.1	6.0	4.2	0.7	1.2	0.4
Technical (Non-University)	1.2	1.6	0.8	4.3	5.2	3.4	0.3	0.4	0.1
Administration	0.5	0.8	0.3	1.8	2.4	1.1	0.1	0.2	0.0
Non-Agricultural Worker	4.3	9.0	0.5	13.5	24.5	2.3	1.6	3.7	0.0
Independent Artisan	0.1	0.3	0.0	0.2	0.2	0.2	0.1	0.3	0.0
Small Enterprise Worker	5.9	6.5	5.4	18.8	14.5	23.2	2.1	3.7	0.8
Service Worker	2.3	4.2	0.7	8.1	13.0	3.0	0.5	1.2	0.1
Domestic Employee	0.9	0.4	1.3	3.6	1.2	6.0	0.1	0.1	0.1
Peasants	77.3	65.4	87.0	36.2 <sup>29</sup>	20.9	51.8	89.4	80.8	95.9
Agricultural Workers	4.2	6.5	2.3	3.1	4.4	1.8	4.5	7.3	2.4
Other	1.4	2.3	0.6	4.3	6.1	2.5	0.5	1.0	0.2

Note: M = men, W = women

Source: INE (2013b)

<sup>28</sup> For countries reporting data to the World Bank for the last five years, Mozambique's figure easily eclipses the 65% of top-ranked Uganda.

<sup>29</sup> Rather high for what one might expect in "urban" areas. The definition must be rather broad, including what one would normally consider to be "peri" urban areas.

The importance of agriculture, even in urban areas and especially for women, is noteworthy. Wage labor is particularly important for urban men (24.5%), whereas urban women (aside from agriculture) tend to operate or work in small enterprises (23.2%). The INCAF survey also presents data for workers 15 years and older regarding sources of income. Nationally, 13% of Mozambicans receive a salary, 62% work for themselves and are compensated, and 25% work at home without remuneration (Table 6). The higher the level of education received, the more likely an employed worker is to be salaried as opposed to self-employed or working for the family.

**Table 6: Employment Breakdowns by Income Source**

(%)	Salaried	Self-Employed	Family Labor without Pay
Total	13.1	61.9	25.0
<b>BY GENDER</b>			
Men	22.0	58.1	19.9
Women	5.9	65.0	29.1
<b>BY RESIDENCE</b>			
Urban	41.0	50.7	8.3
Rural	4.9	65.2	29.9
<b>BY EDUCATION</b>			
None	3.5	67.4	29.0
Primary, to 5 <sup>th</sup> grade	7.0	66.5	26.6
Primary, 6 <sup>th</sup> -7 <sup>th</sup>	18.0	58.3	23.7
Secondary	49.6	38.2	12.3
Higher	92.8	6.8	0.4
Don't know	26.6	63.8	9.7

*Source: INE (2013b)*

Rural survey findings should be interpreted with caution (Cramer, Oya, and Sender 2008). Ali (2013) notes that the straightforward answering of the question about primary household occupations with “agriculture” fails to capture the rich diversity of off-farm activities in which household members also engage.

Rural household members are frequently actively engaged in a multiplicity of activities to earn incomes. Rural labor market wages in the informal economy are paid in a variety of forms, typically *not* on a regular, monthly basis, more commonly by task completed, or on a daily basis, whereas agricultural workers employed on foreign- or state-owned farms are more commonly paid monthly wages (Cramer, Oya, and Sender 2008), but may also be recruited for task or seasonal labor (O’Laughlin and Ibraima 2013). IFTRAB 2004/5 suggested that, nationally, 62% of rural population work for themselves, 25% work in the family without remuneration, and 13% have paid employment. Regionally, a higher share of the rural economically active population is salaried in the South (27%) than in the Center (10%) or North (8%).

National agricultural surveys (TIA) provide some insight into the use of wage labor in rural areas. TIA02 revealed that about 40% of employers from large households hire in temporary labor.

Small and medium enterprises also hire in temporary and permanent labor. The most recent integrated agricultural survey (IAI2012) asked about wage labor with a twelve-month recall, asking households to detail the type of work, employer, products or services sold, and incomes gained from off-farm employment, as well as amounts received from remittances sent by household members. This fact is highlighted in Table 7, which confirms a strong uptick in the percentage of households that indicate having more than one distinct source of income between 1996/97 and 2008/09. Sender, Oya, and Cramer (2006) present a series of life stories to dispel the impression that women in Mozambique do not participate in rural labor markets. For many women, access to paid labor (“*ganho-ganho*” labor) is indeed a crucial supplement to livelihoods they earn on-farm.

**Table 7: Households, by numbers of distinct sources of income (%)**

		96/97	02/03	08/09	Change in Points, 96/7-08/9
Rural	None	49	15	20	-29
	One	32	51	36	4
	More than one	19	34	43	24
Urban	None	30	13	14	-16
	One	53	58	42	-11
	More than one	17	30	44	27

Source: Jones and Tarp (2012), p. 34

Assuring that men and women *can* move, whether from district to district within a province, across provinces, or even across borders, if need be, is an important safety net dimension for Mozambicans (Massingarella, Nhate, and Oya 2005). However, the ability to engage in multiple livelihood streams may actually be wealth-dependent, favoring those with greater assets. Data from TIA05 highlight the disparity between the wealthiest 20% of households, which relied on *non-farm* income for 50% of their total income, in contrast with the bottom four income quintiles, which relied on *farm* income for two-thirds to four-fifths of their total income (Table 8).

Labor migration out of Mozambique has long been an important dimension of total income-earning, especially for households in the South (De Vletter 2007). Migration to South Africa, especially to work in the mining sector in particular, has historically compensated rural southern Mozambican households’ much weaker agricultural endowments, compared with the center and north.<sup>30</sup> Mather (2000) reported that horticulture cultivation in neighboring South Africa, especially in the Mpumalanga province just west of Maputo, also hires Mozambican farm labor during peak seasons, though such work is far less well paid. Remittance inflows, according to De Vletter, have led to much higher average incomes and wealth in the south. Investments in housing, pick-up trucks, irrigation pumps, and (increasingly) informal trade activities for

<sup>30</sup> The Southern Africa Migration Project’s Migration and Remittances Survey, 2004, suggested that at one time, one-third of external migrants from Mozambique left to work in the mines.

household members who remain in Mozambique are common investments made from remittance incomes. Mozambique also *receives* migrant workers from neighboring South Africa, Zimbabwe, and Malawi.

**Table 8: Shares of Rural Household Income, by Income Quintile, 2005**

Quintile	Farm Income				Off-Farm Income						
	Crop Production	Livestock Sales	Unskilled Farm Labor	Subtotal	Unskilled Non-Far Labor	Skilled Non-Farm Labor	SME-Extraction	SME-Other Low	SME-Other High	Remittance/Pension	Subtotal
1-Bottom	71.8	3.3	5.6	80.7	0.7	0.9	3.3	4.9	2.7	5.5	18.0
2	70.3	2.6	4.5	77.4	2.0	1.3	5.1	5.6	3.4	5.2	22.6
3-Middle	65.8	2.9	3.4	72.1	3.4	3.2	5.6	6.3	5.0	4.5	28.0
4	61.2	2.1	3.5	66.8	3.7	7.1	4.7	5.5	7.9	4.5	33.4
5-High	46.4	1.3	1.7	49.4	3.0	16.5	5.3	5.4	15.6	5.0	50.8
<b>National</b>	<b>63.1</b>	<b>2.4</b>	<b>3.7</b>	<b>69.2</b>	<b>2.5</b>	<b>5.8</b>	<b>4.8</b>	<b>5.5</b>	<b>6.9</b>	<b>4.9</b>	<b>30.4</b>

*Source: Mather et al. (2008)*

The internal mobility of rural labor is also reaffirmed in the case study provided by O’Laughlin and Ibraimo (2013), describing the importance for men and women of seasonal, contract labor in the sugar sector in Manhica district, about 80 km north of Maputo. The Manhica district has historically been an important source of migrant labor to South African. As political and economic forces in South Africa combine to make steady employment for Mozambican workers there less likely, expansion of sugar plantation employment (both permanent and seasonal) in the Manhica district has helped to compensate for reduced employment opportunities across the border.

## INVESTMENT AND EMPLOYMENT

The Center for Investment Promotion tracks the number of investment projects approved, by sector, the expected values of those investments, and the number of employment positions expected to be generated per project (Table 9). Across all years and all sectors, the largest share of projects (27.2%) and investment value (19%) is in the industry sector, with services a close second (25.5%). However, agriculture/agro-industry tops the list with 30.8% of expected jobs. Energy projects are expected to be the least labor-intensive, per total investment value, as seen in the right-hand column.

**Table 9: Employment Creation by Investment Projects, 2010-2013**

	Number of Projects	Employment (Expected Jobs)	Average Employment per Project	Total Investment (MT)	Investment per Job (MT/position)
Agriculture/Agro-industry	183	37,263	204	2,290,050,149	61,456
Aquaculture/Fishing	12	1,003	84	18,614,126	18,558
Banking/Insurance	8	1,012	127	273,807,169	270,560
Construction/Public Works	134	16,287	122	1,052,539,063	64,624

	<b>Number of Projects</b>	<b>Employment (Expected Jobs)</b>	<b>Average Employment per Project</b>	<b>Total Investment (MT)</b>	<b>Investment per Job (MT/position)</b>
Energy	4	304	76	2,311,332,287	7,603,067
Industry	370	22,750	61	2,543,678,756	111,810
Services	347	24,794	71	1,578,309,164	63,657
Transport/Communication	118	9,175	78	2,387,681,718	260,238
Tourism/Hotels	183	8,493	46	922,946,601	108,671
<b>TOTAL</b>	<b>1,359</b>	<b>121,081</b>		<b>13,378,959,033</b>	<b>110,496</b>

*Note: The extractives industry is likely contained within the "Industry" category.*

*Source: Center for Investment Promotion*

The CPI also follows up with investors to record actual, realized investments and jobs created. For 2010 through 2012, the results in terms of both investment values and jobs created fall well short of original expectations (Table 10).

**Table 10: Investment Values Realized as Share of Planned (%)**

	<b>2010</b>	<b>2011</b>	<b>2012</b>
Agriculture/Agro-industry	8.6	3.3	7.1
Aquaculture/Fishing	0.0	14.9	100.0
Banking/Insurance	71.7	14.4	33.1
Construction/Public Works	39.1	5.7	81.3
Energy	0.0	14.4	5.0
Industry	28.7	13.9	24.6
Services	51.7	13.4	17.7
Transport/Communication	5.6	50.5	3.8
Tourism/Hotels	19.0	13.8	9.8
<b>TOTAL Investment Value</b>	<b>11.3</b>	<b>15.9</b>	<b>14.0</b>
<b>TOTAL Jobs</b>	<b>16.6</b>	<b>11.6</b>	<b>25.5</b>

*Note: The full year's record of realized for 2013 is not yet complete.*

*Source: Center for Investment Promotion*

## LABOR INSTITUTIONS

Mozambique's labor sector is overseen by the Ministry of Labor (MITRAB). Among its various roles, MITRAB enforces national labor law, coordinates with the National Social Security system for information about formal sector employment, participates in national minimum wage negotiations (see below), manages the system of foreign worker quotas, and oversees professional training and education through the National Institute for Employment and Professional Training (INEFP).

Two labor union confederations presently exist in Mozambique to advocate on behalf of organized workers in formal, private sector employment, the Workers' Organization of

Mozambique (OTM) and the National Confederation of Independent and Free Trade Unions of Mozambique (CONSILMO).<sup>31</sup> These cover approximately 23 trade unions (Ulandsekretariat 2012) and over 400,000 workers.<sup>32</sup> This represents about 5% of the total adult workforce. They also support workers in the informal sector, through the Informal Sector Workers' Association of Mozambique, in their negotiations with municipalities.

Relations between the companies interviewed and the unions seem to be relatively good. Employers state that unions have played a constructive role in situations of workplace conflict, and also in terms of explaining to workers certain company policies.

## MINIMUM WAGES

Analysis of wage data, especially nuanced by region, sector, and occupation could provide pertinent insights into labor market status. As the effects of a natural resource boom become more deeply rooted in Mozambique, one would expect to see upward pressure on wages, as discussed early. Unfortunately, scant information is available from public sources on market wages paid in Mozambique. Private human resource companies conduct salary surveys in Mozambique, to which Mozambique's largest private employers subscribe.<sup>33</sup>

Minimum wages are set annually by the Government, in consultation with the Consultative Labor Commission, a tripartite body that includes representatives from workers (labor unions), employers (CTA), and government. Minimum wages apply to the normal work period, which is defined in Mozambique's 2007 labor law (Article 85, 1) as 48 hours per week and 8 hours per day. Overtime, night work, shift work, part-time work, weekly rest, and other work leaves are also defined in the labor law.

Minimum wages set for 2008-2014, effective June 1 each year, are presented in Table 11. Minimum wages that become effective April 1, 2014 rose by a simple average of 11.6% from the previous year. By far the greatest nominal increase is in the agricultural sector, where the minimum wage was increased by over 20% in one year.

The starting point for annual minimum wage negotiations considers the rates of inflation and sectoral GDP growth (the latter is a proxy for productivity) as multipliers to the previous year's

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<sup>31</sup> As of now Mozambican public sector workers have no rights to collective bargaining or strikes. AIM reported on May 1, 2014 that a bill to establish these rights for public employees passed its first reading in Parliament in early May, and is expected to become law later in the year.

<sup>32</sup> Figures were provided by CONSILMO, whose unions include about 126,000 members across construction, mining, and wood working industries; road transport and garagists; and private security workers. OTM is said to have about 300,000 members. Public sector workers, health care workers, teachers, journalists, mail service workers, retirees, peasants, and informal sector workers may be organized, but are not covered in the two confederations. For further information, see Ulandsekretariat (2012).

<sup>33</sup> For example, the Hay Group surveys 40 companies, formal, mostly international companies with operations in Mozambique, from oil and gas, natural resources, consumer goods, transportation, and other industries. Salary and other benefits information are collected for a range of occupations, ranging from drivers and "process operators" to engineers, finance, and management professionals. Data are only available on a fee-basis to clients.

minimum wage. To this is added a “negotiation factor” that may add to or subtract from the value achieved through the wage increase formula. The formula is:

$$\% \text{ Increase in Minimum Wage} = ( (1 + \text{Inflation Rate}) (1 + \frac{1}{2} * \text{Annual Sector GDP increase}) - 1 ) \pm \text{“Negotiation Factor”}$$

This formula ensured that *real* minimum wages do not decrease. For example, corrected for inflation, real minimum wages in 2013 were at least 5% – and in some sectors, 32-154% (the real financial services sector minimum wage in 2013 was 153.7% greater than in 2008) – greater than in 2008.

**Table 11: Minimum Wages in Mozambique (MT/month)**

Sector	2008	2009	2010	2011	2012	2013	2014	% Change, 2013-14
Fishing, Kapenta <sup>34</sup>	1810	1900	2090	2300	2485	2645	2857	8.0
Public Administration	1826	2083	2270	2380	2522	2699	3002	11.2
Agriculture, Forestry, Hunting, Livestock	1315	1486	1692	2005	2300	2500	3010	20.4
Sugar	1315	1500	1593	2075				
Fishing, General	1892	2050	2200	2475	2640	2850	3167	11.1
Industries, Baking			2497	2850	3021	3195	3485	9.1
Construction	1909	2115	2435	2775	3177	3495	3953	13.1
Extractives, Salt							4010	
Non-Financial Services	1926	2250	2550	2996	3510	3826	4228	10.5
Extractives, Quarry & Sand					3295	3888	4316	11.0
Industries, General	1975	2300	2497	3100	3585	3943	4400	11.6
Electricity & Water (Small companies)	2140	2403	2662	3222	3817	4107	4480	9.1
Electricity & Water (Large companies)			2662	3116			4768	
Extractives, General	1892	2120	2400	2890	3526	4651	5350	15.0
Financial Services (Micro-)							7421	
Financial Services (Banks, insurance)	1942	2745	3483	5320	6171	6817	7465	9.5

Source: Hanlon (2014), AIM (2014)

In 1996, Mozambique applied a single minimum wage throughout the economy. Hanlon (2014) reports that a separate minimum wage for agriculture was introduced in 2000. Today, minimum wages are defined for 15 sectors and subsectors. Minimum wages typically are references for compensation in unskilled and semi-skilled positions, although large, formal companies typically pay above the minimum wage even at those skill levels. They do not usually apply to employment in the informal sector. Within a sectoral category, the minimum wage applies to the entire sector and is not nuanced by occupation. So, for example, a guard or cleaner working for a bank should be paid the financial sector minimum wage, whereas a guard or cleaner working for a hotel should be paid the minimum wage applicable to the tourism sector.

<sup>34</sup> Small, freshwater sardines that are fished on the Cahora Bassa reservoir in Tete province.

Mozambique's minimum wages also provide a benchmark of costs of low-skilled labor to allow comparison across countries. International investors, especially in labor-intensive manufacturing industries, consider comparative wage and labor productivity data when deciding among alternative countries in which to invest. Expressed in US dollars converted roughly at an exchange rate of 30 MT/\$, Mozambique's minimum wage for a general industry worker, for example, is \$147 per month or \$5.64 per day. By way of comparison, the minimum wage in US dollars of a garment factory sewing operator in Cambodia was raised in early 2014 to \$95 per month. Yet Cambodia's annual gross national income per capita in 2012 was \$2330, more than twice that of Mozambique (\$1000). The new agricultural wage is equivalent to \$100 per month, or \$3.86 per day. As the metical appreciates under Dutch disease, the dollar equivalents of Mozambique's minimum wages will rise even further.

As Jones and Tarp pointed out for 2012, the minimum wage in agriculture at that time was "three times higher than overall ... labour productivity in that sector" (2012, 29). It is not surprising that permanent, formal employment in the agricultural sector, on a sugar plantation for example, is considered to be desirable employment, given that informal sector wages for seasonal or task-based labor are paid below minimum wage.<sup>35</sup> Thus, Mozambique's minimum wage policy may threaten competitiveness if labor productivity does not rise concurrently.

A comparison of Mozambique's economic structure and progress with those of Vietnam, a country that experienced a similar colonial past, civil war, low starting points of economic development, and high rates of poverty is made by Arndt et al. (2010). Vietnam's much higher educational base is reflected in higher wage premia paid to high-skilled workers in Mozambique than in Vietnam, reflecting the greater scarcity of high-skilled workers in Mozambique. Ratios of non-farm wages of high-skilled to low-skilled labor are 2.26 in Vietnam (2004) and 4.62 in Mozambique (2002) (Arndt et al. 2010, 17),

## **INFORMAL SECTOR & HOUSEHOLD ENTERPRISES**

Labor market informality in Mozambique, as pointed out by Jones and Tarp (2012), is defined by INE to mean anyone who is not salaried, i.e., those who are self-employed or working unpaid in household jobs. Jones and Tarp further note that, even within the wage labor category, work arrangements may exist that are insecure, irregular, and informal. Thus, as presented in Table 6, over 85% of Mozambicans are considered to work in the informal sector. Men are nearly four times more likely to be salaried than women; informal employment occupies 78% of all men and 94% of all women. Moreover, in exploring the evolution of these shares over time, Jones and Tarp note that these proportions have remained steady, suggesting that the economy, while growing, is not generating a larger pool of formal sector employment opportunities.

Fox and Sohnesen (2013) present primary employment data broken out to show the importance of household enterprises to incomes (Table 12). They are especially important in the urban sector, where 22.7% of households work. They observe that "many households still had only farm

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<sup>35</sup> See, for example, the case of sugar workers described in O'Laughlin and Ibraimo (2013).

income in 2008, but increasingly rural and urban households are trying to increase total income through livelihood diversification into non-farm sectors, while maintaining farm income” (Fox and Sohnesen 2013, 8). Increasing the business environment for household enterprises, the authors argue, should be considered as part of the government’s poverty reduction planning.

**Table 12: Breakdown of Primary Employment, by Area, 1997-2009**

	Urban			Rural			National		
	1997	2003	2009	1997	2003	2009	1997	2003	2009
Agriculture	66.7	46.7	44.7	94.0	92.3	93.2	86.8	78.2	79.6
HH Enterprises	10.1	19.0	22.7	2.3	3.8	2.8	4.4	8.1	8.4
Non-farm Wage	23.2	34.3	32.7	3.7	3.9	3.9	8.9	12.6	12.0
Private sector	7.6	21.9	22.5	1.3	2.2	2.1	3.0	7.8	7.8
Public sector	15.6	12.5	10.2	2.4	1.7	1.8	5.9	4.7	4.2

Source: Fox and Sohnesen (2013, 6)

The Ministry of Industry and Trade’s Division of Private Sector Support helps to formalize small and medium-sized enterprises by issuing “simplified licenses.” They also collect information about levels of employment associated with these enterprise licenses (Table 13).

**Table 13: Issuance of Simplified Licenses to Small and Medium Enterprises**

Province	Simplified Licenses Issued					Associated Employment per License				
	2010	2011	2012	2013	TOT	2010	2011	2012	2013	AVG
<b>NORTH</b>										
C Delgado	290	378	463	494	1625	2.48	4.90	4.85	5.34	4.59
Nampula	573	855	885	1214	3527	1.38	3.37	1.13	1.81	1.95
Niassa	214	156	142	240	752	10.64	2.13	7.62	1.65	5.44
<b>CENTER</b>										
Manica	483	370	264	405	1522	0.98	2.22	9.64	5.37	3.95
Sofala	577	540	2184	2585	5886	1.25	2.31	0.42	0.28	0.61
Tete	269	355	1044	981	2649	6.02	7.25	4.65	2.60	4.38
Zambezia	1438	1212	541	1214	4405	0.91	0.37	0.79	0.50	0.64
<b>SOUTH</b>										
Inhambane	242	286	359	458	1345	2.91	5.10	6.94	3.56	4.67
Gaza	84	122	292	813	1311	1.67	4.91	1.54	1.31	1.72
M City	1470	1472	3271	4697	10,910	3.41	4.02	2.24	1.73	2.42
Maputo	2654	2924	1980	2545	10,103	0.43	2.08	4.57	2.05	2.13
<b>TOTAL</b>	<b>8,294</b>	<b>8,670</b>	<b>11,425</b>	<b>15,646</b>	<b>44,035</b>	<b>1.80</b>	<b>2.79</b>	<b>2.83</b>	<b>1.75</b>	<b>2.25</b>

Source: Ministry of Industry and Trade, Division of Private Sector Support, received March 2014

Whether these represent “new” enterprises or formalization of already-existing enterprises is impossible to discern. Maputo City and Province are clearly the most dynamic, in terms of numbers of licenses issued. Interestingly, Tete Province, the center of Mozambique’s coal mining industry, does not show unusual levels of activity, even when normalized around populations by province (not shown here). This suggests that levels of secondary economic activity around the

mining sector may not be growing as rapidly as one might have predicted (or are unlicensed). Enterprises in the north are somewhat larger, in terms of jobs associated per enterprise, than those in the center or south (averages are 3.12, 1.66, and 2.38, respectively).

## **SUMMARY: LABOR MARKET STYLIZED FACTS**

A summary of “stylized facts” about Mozambique’s labor market is distilled from Jones and Tarp (2012) in Box 1 below. These paint a picture of a highly segmented labor market: a small portion of the workforce is educated, skilled, and either formally, informally, or self-employed, while the vast majority of Mozambicans is locked into lower productivity, informal or self-employment, on and off farm, often *under* employed, and struggling to patch together enough different livelihoods to make ends meet for their families.

### **Box 1: Stylized Facts About Mozambique’s Labor Market**

1. Mozambique's population is young, rural, and growing rapidly.
2. Rates of labor force participation are high, unemployment is low and principally confined to urban youths.
3. *Under* employment is rife.
4. The informal sector is large and is the principal locus of new job creation.
5. Levels of education (skills) remain low throughout the economy.
6. Structural change in the labor market has been limited
7. There are large spatial differences in the distribution of Mozambican labor.
8. Productivity gaps between sectors are large and widening, largely due to slow productivity growth in agriculture.
9. Household income sources have diversified over time.
10. Social discontent appears to be rising, particularly among the urban youth.

*Source: Jones and Tarp (2012)*

## 4. Labor Markets in Mozambique: Assessment Findings

The March 2014 field assessment probed a number of dimensions that characterize Mozambique's labor markets, explored below.

### ROLE OF LABOR IN OVERALL DEVELOPMENT STRATEGY

Job creation is a cross-sectoral issue that affects a number of different government portfolios. Developing a strategy to promote job creation should involve not just for the Ministry of Labor, but also the ministries of education, industry and commerce, planning and development, agriculture, etc. However, to date in Mozambique this issue has been treated in a fairly fragmented way. The government, NGOs, international organizations, and companies themselves are actively engaged in trying to address the skills gaps and labor mobility. However, a 2013 ILO seminar in Maputo concluded that while there are “a considerable number of programs and initiatives related to job creation, skills development, and labor market institutions.... Interventions are fragmented and the scale of some of the interventions is far too small to have an impact” (ILO 2013).

#### Box 2: Indonesia's Successful Diversification Strategy

The share of oil and gas in Indonesia's public revenue fell from a high of 49 percent in 1982 to 23 percent in 2005. This was a direct result of a strategy with two vital characteristics: i) sector policies that supported the agricultural and manufacturing sectors (mainly textiles and footwear); and ii) policy flexibility, as demonstrated through the country's careful transition from import substitution to export-led growth. The policy of attracting foreign investment has been largely successful at targeting the labor-intensive manufacturing sector. The policy took advantage of both the relatively lower labor costs and access to the US market following the preferential trade concessions provided under the Generalized System of Preferences (GSP) scheme (Rosser 2007). At an average annual growth rate of about 12 percent, manufacturing grew at the highest rate between 1965 and 1997. The success of Indonesia's industrialization strategy is based on building vital sectoral linkages, investing in human and physical capital, and providing targeted subsidies and tax breaks (Usiu 1997).

Revenues from the natural resource sector were invested in agriculture, mainly in irrigation and land reclamation. It also provided subsidies for inputs, such as fertilizer, pesticide, seeds as well as irrigation. Between 1970 and 1984, the total irrigated land area in Indonesia increased from 3.7 million to 4.9 million hectares, the use of subsidized fertilizers increased from 0.2 million to 4.1 million tons, and the use of subsidized pesticides increased from 1,080 tons to 14,210 tons (Barbier 1989). As noted by Panayotou (1993, 64), “[T]he Indonesian government subsidized pesticides at 82 percent of the retail price.” After achieving self-sufficiency in rice (import substitution), the strategy moved towards export crops (outward orientation and export-led growth). Indonesia has recently become the largest producer and second-largest exporter of palm oil, and ranks as the fourth-largest coffee producer and exporter in the world (Fuglie et al. 2010).

Source: Hailu et al. (2011, 25)

Given that the majority of Mozambicans work in low-productivity agricultural jobs, alongside severe skills shortages, the situation is clearly serious. Existing initiatives are not, though, necessarily sufficient to address the scale of the problem or address them in time to ensure maximum benefit of the upcoming extractive industry boom to Mozambique and Mozambicans. And there does not seem to be as yet any detailed discussion of the need to invest in proactive support to non-extractive sectors of the economy in order to avoid complete dominance of the

extractives, as did Indonesia, described in Box 2. Without such a strategy, while GDP might continue to grow, employment may not. The impact of the extractive sector on poverty reduction and sustainable inclusive growth for all Mozambicans would thus be limited.

This has been recognized by government, with an increasing rhetoric around the need for not only growth, but *inclusive* growth. Job promotion is one of three main objectives defined in the government's Action Plan for the Reduction of Poverty (PARP). The PARP defined three main job creation thrusts:

- i. Align professional training with the needs of emerging industries in strategic sectors (defined as tourism, industrial maintenance, agriculture, processing, mining, management and administration);
- ii. Recognize learning acquired outside of formal professional training – e.g., using mobile units for training in rural areas, creating a national system for certification; and
- iii. Increase linkages between supply and demand for jobs (e.g., through expanding capacity of public job centers, supporting microenterprises and increasing access to credit, and promoting professional internships. Improving dialogue, creating a labor market “observatory,” and improving the quality, frequency, and relevance of information about the job market are also emphasized.

The Government is also in the final stages of drafting a 20-year national development strategy (the *Estratégia Nacional de Desenvolvimento*, or ENDE), the main focus of which is industrialization. The draft ENDE highlights the need for skills and technology transfer, but is as yet vague on the exact mechanisms for encouraging these. It is possible, with greater analytical investment and strong leadership within government that the ENDE could become the national vision for structural transformation of the economy, subordinating other interventions (e.g., in education, transport, infrastructure, industry and commerce) to the overriding objective of structural transformation. As seen in the Indonesia case above, other countries that have benefitted from large resource inflows from extractive industries have attempted (with varying degrees of success) to use these resources to develop a proactive industrial policy that sought to support labor-intensive, non-extractive industries in order to promote job creation.

Mozambique's government is clearly aware of these issues, considered at the March 2014 “National Dialogue on Employment” (ILO 2014). Many interventions – from reform of vocational training to provision of credit for self-employment, to a new strategy on internships, to funds for promotion of small-scale fishing, to plans for a ‘labor observatory’ to improve labor market information – are in various stages of design and implementation, though dispersed and fragmented.

Without strong, coordinated leadership, Mozambique could miss the opportunity provided by extractive industry resources for wholesale transformation of the economy and job creation. As seen in Section 1, given the direct and indirect effects of the extractive industry on the rest of the economy, it is unlikely that industrialization and economic diversification will “just happen” – in fact, without specific government actions, the reverse could happen and Mozambique could end up with an economy “cursed” by natural resources, such as in Nigeria or Angola, that derives

huge revenues from oil and gas, but in which the vast majority of the population remains mired in poverty.

It is therefore urgent that more detailed analysis is done by the government in order to define more clearly what needs to be done in order to ensure a diversified and job-creating economy going forward. As revenue is already flowing from coal and from Capital Gains Taxes on sales of shares in the offshore gas developments, and as construction of the LNG plant is forecast to commence next year, this issue is becoming urgent if Mozambique is to put in places measures to avoid a “resource curse.”

### SKILLS CATEGORIES & CONSTRAINTS

The Mozambican labor market can be characterized as highly segmented and facing severe supply constraints for some skills. The labor market can be broken out in the following way:

Figure 8: Labor Market Categories in Mozambique

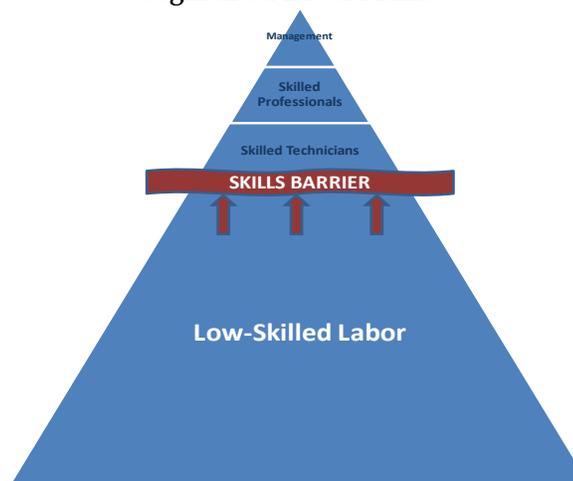
Labor Category	Examples of Occupations	Technical Qualifications, If Any
MANAGEMENT	Administration, finance, managers, strategic direction	Any occupation for which a minimum of post-graduate training and 5-10 years of professional experience is required.
SKILLED PROFESSIONALS	Engineers, scientists, senior sector experts, accountants, financial auditors, heads of departments, human resource managers, chefs, agricultural specialists,...	Any occupation for which a minimum of 4 years of post-secondary education is required, and preferably 3-5 years of prior work experience is offered.
SKILLED TECHNICIANS	Machinists, mechanics, metalworkers, electricians, carpenters, heavy machinery operators, drivers, tour guides, receptionists, food preparers, supervisors, ...	Any occupation for which specialized vocational training and certification is required, and preferably 1-2 years of prior work experience is offered.
LOW-SKILLED LABORER	Manual workers, cleaners, commercial farm labor, chambermaids, gardeners,...	Any occupation for which no training or education is required.

Source: Developed by the assessment team.

Supply constraints are evident not only for highly skilled management professionals, but also for high quality skilled technicians such as electricians, plumbers, machine operators, etc. and at certain times of year (in rural areas, e.g. during harvest season). **These supply constraints exist alongside a vast potential supply of unskilled or very low-skilled workers who are predominantly rural household farmers, and alongside significant under employment of the unskilled workforce in both urban and rural areas.**

There are clearly constraints in Mozambique that make labor less mobile than theory would suggest, and that prevent the “flow” of labor from low-paid, low-productivity activities into higher paid,

Figure 9: Graphical Depiction of Mozambique’s Segmented Labor Market



higher productivity activities – despite the obvious demand from these sectors. The biggest constraint to mobility between the large pool of low-skilled workers and the limited pool of skilled technicians, professionals, and managers is the skills barrier, depicted graphically in Figure 9. At a minimum, most formal sector employers require workers who can read, do math, and who bring some technical skill for which training and apprenticeship is usually required. The most lacking skills fall into two categories: technical/vocational and general “work culture.”

The skills barrier, which effectively cuts off prospects for rural labor to migrate either into the urban sector or the extractives industry and find formal employment, is explained by the low human capital base in Mozambique. The African Development Bank and OECD note in their 2012 Mozambique country *African Economic Outlook* report:

Mozambique is estimated to have the lowest education level among its adult population in the world at 1.2 years of formal education. The low skills level of the labor force remains a significant issue both for employers who are unable to engage qualified laborers as well as for promoting a culture of entrepreneurship. Though the education level is improving, net attendance rate for secondary school is only 20%. Education is free, but there are costs associated with uniforms and school supplies which present a burden for the most vulnerable households. The increase in intake in the schools has put the quality of education under pressure and has led the government to lower the requirements for becoming a teacher in order to meet demand. There are indications that the absorption of youth into the education system has meant a temporary reduction of the growth of the labor force which is currently growing at an estimated 0.4% per year. (AFDB and OECD 2012, 14)<sup>36</sup>

The skills gap is felt at all levels of the labor market, although most severely at the top and middle of the pyramid. For **skilled managerial or professional jobs**, employers highlight that experienced managers are “almost impossible” to find in the local market, as were senior professional staff such as specialized engineers - which is not surprising given that these positions require not only academic qualifications but also many years of experience, which would often be gained abroad. Many of these jobs (for example general manager of a hotel, senior engineers, factory managers, finance managers etc.) are held by foreign staff. We saw little evidence of a gradual move towards “Mozambicanization” of very senior positions, although some evidence of this happening at mid-level positions, such as human resource managers, managers of specific departmental heads, or junior engineers.

More surprising is the fact that employers feel the skills gap is almost as acute for **skilled technical positions**, such as machine operators, factory supervisors, plumbers, mechanics,

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<sup>36</sup> Donors also stress the need to improve the quality of learning, as well as access. The quality of primary education in Mozambique is also very low, with preliminary results from the national education evaluation showing extremely low reading skills for third-graders in the country, according to the 2014 joint evaluation of general budget support conducted by donors.

housekeepers in hotels, etc. Employers note that many individuals in the labor market, while they may have a diploma or certificate, are often unable to perform to the standard expected by companies, both foreign and national. One employer of a Mozambican manufacturing firm felt that a proliferation of courses providing certification in particular skills, without providing adequate hands-on practical training, makes it far more difficult than in the past to find employees who are “up to the job.” Companies that do not contract certain positions (e.g., electricians, plumbers) on a full-time basis, but rely instead on local contractors, feel that these contractors often lack business skills, in that they struggled for example to provide accurate estimates for work to be done, are sometimes unreliable in terms of timekeeping and availability, etc.

For **low-skilled or unskilled labor** employed by the formal sector, such as gardeners, cleaners, low-level construction laborers, wage labor on plantations etc, employers mention the lack of “work skills” or “work culture” as a constraint. For example, a culture of working shifts, punctuality, reliability in turning up for work every day, may be stronger among migrants (e.g., Zimbabweans, Malawians) than among the local labor force. Migrants are said to “really graft” – often for lower wages. Literacy is also mentioned as a constraint. While some companies did state that for this level they employ illiterate staff, most stated that literacy was a requirement for even the lowest skilled positions. For example, one hotel said that even the lowest skilled staff members need to be literate as there are company procedures – such as filling in leave forms and training courses – that require this. A number of manufacturing firms highlighted the need to be able to understand health and safety regulations and training, such that literacy was a prerequisite for employment. With a 50% adult illiteracy rate,<sup>37</sup> this in itself provides a strong barrier to job creation, even at this low skill level.

In Mozambique today, skilled labor shortages are pressing. Construction for the planned LNG plant in Cabo Delgado could start as soon as next year, creating an estimated 10,000 construction jobs for technicians with international-standard skills. Many of these jobs will exist for long periods as LNG plant construction is planned to be carried out in phases. **Given this anticipated increase in labor demand, it is urgent that the scale of interventions to improve the supply side of the Mozambican labor market be increased.** If efforts are not scaled up soon, the construction industry, with its nexus of contractors and subcontractors, will be able to access workers from around the globe to make up the shortfall.<sup>38</sup>

The Mozambican government is understandably concerned that jobs created within the national economy should go, as much as possible, to Mozambican nationals. Currently, the Ministry of Labor operates a foreign worker quota system to regulate the size of the foreign workforce in

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<sup>37</sup> 2008-2012, from UNICEF, [http://www.unicef.org/infobycountry/mozambique\\_statistics.html](http://www.unicef.org/infobycountry/mozambique_statistics.html).

<sup>38</sup> Labor pools from the poorest countries of Asia often supply construction projects in booming economies of the Middle East, for example. Domestic oversight of such projects is required, however, to ensure that working conditions and labor rights are compliant with international standards. For a report on “the dark side of migration,” see Amnesty International (2013).

Mozambique.<sup>39</sup> However, a more comprehensive and strategic approach is required to marry the objectives of economic growth and extraction of natural resources with the objective of large-scale creation of good quality, productive jobs. Given the extreme skills gaps identified in previous sections, it is important that effort is placed not only on limiting the entry of foreigners (a short-term response), but also on massively increasing local supply and quality of skilled workers in the longer run.

When demand exceeds supply in a market, what happens? Prices rise, signaling the need for the market to increase supply. In the short run, a shortfall of rice, for example, may lead to the importation of enough rice to meet demand. In the longer run, if the economy is a competitive producer of rice, more rice may be grown to minimize the shortfall. In the case of a skilled labor shortfall, the market response is the same. Prices (wages) rise; in the short run, enough skilled labor is “imported” through in-migration (which may be regulated by foreign labor quotas) to add to meet demand. In the longer run, higher wages for skilled labor – the so-called “skills wage premium” – should encourage future and present workers to invest in the education and training required to qualify for a skilled workforce position. Developing a supply of skilled labor will, however, take longer than cultivating more of an annual food crop.

As discussed further below, this is not to suggest that nothing is being done in Mozambique to expand the supply of skilled labor. On the contrary, multiple interventions are already being carried out, some in collaboration with private companies, but not at a scale to ensure that the majority of the new, resource boom-associated jobs will go to Mozambicans. If sufficient action is not taken, the government could be faced with a dilemma. Either construction will have to slow down while Mozambicans are trained, or large-scale influx of foreign workers will have to be allowed to keep the construction on track. Another option is that the construction will be done mainly offshore, with constructed factory units imported and simply assembled onshore. None of these options is politically or economically attractive, and it will be important for the government to work closely with the companies selected for construction to ensure an appropriate balance between domestic job creation and keeping construction on track.

## **TECHNICAL & VOCATIONAL EDUCATION & TRAINING (TVET)**

As seen in the previous section, employers are unanimous in stating that they face labor supply constraints and, in particular, constraints in finding particular skills. The March 2014 National Employment Dialogue identified “outdated and inefficient education systems, including technical

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<sup>39</sup> Depending on the size of the firm, but irrespective of the sector, a company can employ foreign workers equivalent to between 1 and 5% of its total workforce. In theory this quota is not binding, as a company can request authorization for employment of extra foreign nationals, if it can prove that no Mozambican can be found to fill the job. However, in practice this route is extremely bureaucratic and employers complain that the decisions can be somewhat arbitrary. It should be noted that for major extractive industry firms, and in theory for other major investments, companies can negotiate much higher above-quota levels of foreign nationals directly with the government during negotiations of their investment licenses. The quota system is much more binding, therefore, on small and medium enterprises that can provide a lot of employment “around” the extractive sector and indeed in other parts of the economy. Another SPEED study (Ennis 2013) cited the frustrations of a number of SMEs who find the quota system so burdensome as to hamper their businesses.

and vocational training” as a major constraint to job creation. TVET in Mozambique is managed in a fragmented way. The government needs to create a supportive environment for TVET – whether publicly funded or, as is increasingly being discussed among donors and government officials, through public-private partnerships (PPPs). The experience of Australia, which created the Australian Skills Quality Authority<sup>40</sup> to standardize courses and ensure minimum skills standards on which industry could rely, may be worth further study. While the Australian scheme is probably too detailed and too highly regulated for direct transplantation to Mozambique, nonetheless lessons could be learned to strengthen standardization of skills and adapted to the Mozambican context. It may also be possible that for certain skills, curricula could be ‘imported’ (and translated) rather than developed from scratch.

The country’s TVET providers include a number of technical training schools at the secondary level (generally these are three-year courses for students who have completed 10<sup>th</sup> grade); Technical Training Centers run under the auspices of the Ministry of Labor; some specialized schools run by other ministries; church and NGO-based technical training projects; as well as private sector providers for specific skills training. Despite the fact that the largest share of the government’s budget in the last decade has been spent on education, the amount allocated to TVET, which is expensive to deliver, has consistently been less than required to maintain standards and keep up with demand.

Efforts to improve coordination, in particular between the Ministries of Education and Labor, have been made through the establishment of the Executive Commission of the Reform of Professional Education (COREP), under the Integrated Program of Reform of Professional Education (PIREP), presented in Box 3.

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<sup>40</sup> <http://www.asqa.gov.au/about/about-asqa.html>

### **Box 3: Program of Reform of Professional Education (PIREP)**

In 2006 the World Bank launched the 5-year PIREP under the aegis of the Ministry of Education, with financing of \$30 million from the World Bank and \$7.5 million from the Dutch (later extended to 2014), to improve the quality and responsiveness of technical and vocational education and training to labor market needs, with four components:

- i) Institutional development support to government;
- ii) Development of curricula for competency-based vocational training in critical skills (Agriculture, Industrial Maintenance, Mining, Gas, Tourism & Hospitality, Administration & Management, and ICT);
- iii) Renovation and equipping of technical training schools and training of teachers (7 technical institutes and 3 INEFP centers); and
- iv) Competitive grants fund (FUNDEC) whereby training institutions can apply for funding for vocational training activities.

According to the World Bank, while progress on Component I has been slow, good progress has been made on Component II, including constructive engagement with the private sector to define industry needs; the competency-based curricula, originally to be implemented in 7 focus institutions, have been adopted more widely by other institutions. Under Component III the 7 institutions have received state-of-the-art equipment and teacher training. The latter was found to be essential as due to obsolete technology and many trainers being themselves out-of-date. FUNDEC, too broadly defined in the beginning, has shown progress.

In 2011, the World Bank extended \$30 million in additional financing for PIREP through September 2014. The Project Appraisal Document for the second phase noted that several project weaknesses had been identified in internal reviews: "(i) underestimation of the time necessary for curriculum development; (ii) implementation progress being slow due to planning issues that hampered correct articulation and sequencing of activities; (iii) problems with the establishment of the national TVET oversight body; (iv) procurement problems due to the need to import most goods and services; and (v) underestimation of project costs that was exacerbated by inflation" (World Bank 2011, 4).

Nevertheless, the World Bank's project sheet highlights a number of results, including several that exceeded original targets, i.e., the establishment of 61 competency standards endorsed by the private sector, over 4000 learners who have been assessed through these standards, establishment of comprehensive occupational standards and qualifications for 61 targeted occupation levels, 40% of students who have been provided with internships through their training, high levels of student success, significant numbers of teachers in target sectors who have been trained under the new system, and 19 TVET institutions now aligned to the competency-based system.

*Source: Interviews and World Bank (2011)*

## **University Courses**

Mozambique has a number of public and private universities providing undergraduate and graduate degrees. A full analysis of the sector is beyond the scope of this report, but

employers in general complained that while recently graduated students had often obtained theoretical knowledge, they rarely learned "real life" skills and general work preparedness. The labor assessment interviewed two universities, one public and one private, both of which had developed systems to address the need for graduates to leave university with practical work experience already acquired.

### **Box 4: Anadarko and UEM: Training Mozambique's Future Petroleum Engineers**

Eduardo Mondlane University (UEM) and the U.S. petroleum company Anadarko have together set up a Master's degree program in Petroleum Engineering, in which 25 students currently participate. Lectures are given by staff from various US universities by video link. Last year a preparatory course was given to ensure students had the appropriate grounding, and this year specific modules on Petroleum Engineering are being given. The initiative also aims to train UEM faculty in technical aspects of petroleum engineering such that in future they can also lecture on the course.

UEM's Engineering faculty has developed a network of potential employers of its graduates and places all students with companies for internships thus providing work experience and potential job opportunities to its students. The private university *Instituto Superior de Ciências e Tecnologia de Moçambique* (ISCTEM) does something similar. It has also introduced innovative "real life" simulations in its curriculum through a business lab that encourages students to interact in a virtual "business world" that teaches key management skills as well as work skills such as punctuality and reliability.

## Technical Training Schools

Mozambique has a network of over 90 technical and vocational training schools that provides a range of technical and vocational training courses at basic and medium levels. According to Maimuna (2014), about 5500 students graduate from the system each year. Very high drop-out rates are recorded, on average about 11% but as high as 66% in agriculture courses. The vast majority of graduates are from basic courses; in 2012 in the whole country only 545 students graduated with medium level from the industrial courses.

### Box 5: Employability of Mozambican Youth

A recent study carried out by the Ministry of Planning interviewed a range of employers across the country on the general employability of Mozambican youths. The study concluded that "the general perception [of employers] was that the Mozambican youth workforce has immense limitations in terms of quality. Those with secondary schooling do not have skills that are directly applicable to industry. And those with technical or university training have received theoretical information, rather than the practical skills needed to respond to the demands of firms. Due to this, companies are obliged to offer additional training programs or recruit foreign workers."

The study also concluded that the quality of technical and vocational training in technical schools and INEFP training centers is extremely variable. Some well equipped workshops exist, but the majority lack basic working conditions and equipment. Cases of training institute staff not being paid were also noted.

Most employers interviewed for the study rely on the newspaper to advertise vacancies, while some contact training institutions directly or use private employment agencies. Reliance on public institutions such as INEFP is weak (owing to lack of familiarity with the institution, perception of few candidates or inappropriate skills, fear of corruption/nepotism, and/or perception that big companies have first access to the limited numbers of graduates).

Half the companies interviewed stated that they offered internships, but some highlighted that there are costs to the company of doing so – equipment, insurance and no compensation for lost production or time.

Source: Maimuna (2014)

However, only 1% of total school enrollment, representing around 15% of secondary school students, participates in TVET courses, about 90% of which are in technical training schools managed by the Ministry of Education (other ministries also run some technical schools). There is general consensus among employers and other stakeholders interviewed that the quality of the training at technical schools has deteriorated significantly over the last ten years and schools lack qualified, up-to-date staff and equipment for practical learning.

One employer who has regularly received students from technical schools in Maputo and Matola for many years stated that.... "training is much worse than a decade ago... an engineering graduate today does what in the past a technician with medium-level training from a technical school used to do, and a medium-level technician today does what a basic-level technician used to do." Efforts are being made under the PIREP program to upgrade a number of schools, renovate buildings, and provide up-to-date equipment, training etc, but needs remain great.

## **National Institute for Employment and Professional Training (INEFP)**

INEFP manages a network of training centers around the country, located mainly in provincial capitals, that provide courses in vocational trades, including accounting and administration, electrical, small business management, car mechanics, plumbing, soldering, and hotels and tourism. In 2012, INEFP graduated 706 students around the country (Maimuna 2014). Programs offered range from 15 hours for very specific courses to around 400 hours for more complex subjects. Centers are funded by student fees, government resources, and some industry contributions.

INEFP is responsive to emerging industry training requirements. For example, a new INEFP center is being set up in Palma to respond to future needs of the natural gas industry. INEFP has provided training in Tete to the coal mining industry. Mozambique's first megaproject, Mozal, also collaborated with INEFP for training of its construction and operations staff (Box 6).

However, the ability of INEFP centers to fully meet employers' needs is limited. Only one of the centers is currently able to provide internationally recognized certification (in electromechanics). As employers say that for some jobs, health and safety concerns mean that companies can only employ staff if they have internationally recognized qualifications, the limited international certification in Mozambique effectively limits access for Mozambicans in other skills unless they are able to go abroad to train. Employers also mention that tourism courses focus too much on theoretical approaches to management and not enough on practical skills such as cooking, waiting on tables, housekeeping, inventory management, etc. INEFP is clearly very under resourced, without the financial or human resources necessary to fully fulfill the demand for skills. Its director stated in a recent interview that INEFP faces challenges in construction of new centers, providing adequate equipment, and defining curricula that respond to the needs of the market.<sup>41</sup>

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<sup>41</sup> Quoted in CBE Recruitment and Selection Newsletter, 3<sup>rd</sup> December 2013.

### **Box 6: The Mozal Approach to Local Labor Training and Use**

Mozal, an aluminum smelter outside of Maputo, was Mozambique's first major foreign investment project. Training and hiring of local staff was a key feature of the Mozal project in both construction phases (phase I, late 1990s; phase II, early 2000s) and operations. Early project planning involving the foreign investors (BHP Billiton, 47%; Mitsubishi Corporation of Japan, 25%; Industrial Development Corporation of South Africa, 24%) and the Government of Mozambique (4%) emphasized local training. The International Finance Corporation (IFC), one of the financing partners, provided important support for this agenda. The project created employment in a number of categories: lower skilled, temporary construction work, and longer term, generally higher skilled, permanent jobs in operations. The former had shorter lead times and required shorter training than did the latter.

#### **Construction**

Terms of reference ensured that potential subcontractors bidding on smelter construction would employ significant levels of local labor and invest in training. The Engineering, Production, and Construction (EPC) contractor and all subcontractors were bound by the Project Labour Agreement (PLA), signed between the company and the Unions and witnessed by government, establishing wage standards for every category of worker. Mozal established a state-of-the-art training center in coordination with INEFP and a third-party training provider. Training courses ranged from 10 to 60 days, depending on the specific skills. Once individuals had successfully completed the training to the required standard, they received an "entry pass" to the site. The PLA stipulated that no subcontractor could employ staff without such an entry pass. This ensured that technical skills were of adequate quality and adequate training on health and safety. In total for both phases of construction, 5700 people were trained, with a 93% pass rate, and 72% were employed on the site. Total cost of the training, including equipping the training center, was \$6.7M.

#### **Operations**

Over 1000 permanent jobs were created for operations. A gradual "Mozambicanization" of these has taken place, such that the initial dominance of expatriates at supervisory and higher levels has been reduced over time. By 5 years after initial operations, 75% of all permanent jobs were held by Mozambicans. Training for local suppliers was also carried out under the Small and Medium Enterprise Empowerment and Linkages Programme to encourage local linkages. One interviewee who worked for Mozal at the time stressed the high performance of the Mozambican staff. Everyone from (women) welders, who performed at very high standards after training, to IT operators proved to be of much higher quality than initially foreseen by the company.

#### **What Lessons from Mozal?**

Mozal is one of a number of megaprojects (Sasol, Kenmare, Rio Tinto, etc.) that have used predominantly Mozambican labor in the construction phase and that employ a majority of Mozambican labor in operations. This is important to note given current discussions about LNG development in Palma. Key lessons from the Mozal experience include: i) importance of high level dialogue from the beginning on labor issues between investors, the government, and unions; ii) inclusion of labor issues in terms of reference for the EPC contractor and subcontractors; iii) importance of an integrated approach to labor, led by the company, rather than each subcontractor handling issues on its own; iv) constructive facilitative role played by the IFC; v) most importantly, up-front investment in skills development paid off and enabled a largely Mozambican workforce on construction and on operations, functioning to a high level of productivity and safety.

While new centers have been set up based on financing from specific companies, this does make INEFP somewhat dependent on the financing of big multinationals whose resources and interests may not always be aligned with those of national industry. INEFP's director stated that the decision to introduce new courses or material is dependent on INEFP's assessment of demand through discussions with companies, rather than being based on discussions with the Ministry of Planning regarding overall development strategy. Some INEFP activities seem somewhat ad hoc and dependent on individual initiatives of local directors of specific centers – one, for example, approached a recently contracted construction firm that was about to start work on a bridge to Catembe from Maputo, asking the company to specify what skills it would require in order that the center could better prepare their applicants. Such a positive, entrepreneurial approach could

have even more impact if it took place at a national level and in a way that is integrated with the national development plan.

## Internships

Internships seem to be a well used practice in Mozambique, with completion of a three-month internship often a prerequisite for completion of courses, both at technical schools and at the university level. Some schools and universities help students find internships through their networks, while others provide letters of introduction for students to find their own placements.

Employers typically support this as a very positive approach, with benefits to the firm in being able to identify the best potential new hires without the commitment of a formal labor contract, and benefits for the interns of acquiring the practical skills in demand in the labor market. Interns find that the internship enhances their employability even if not hired by the company with which they were originally placed. Box 7 presents two interns' stories.

### Box 7: Meet the Interns

#### Natalia Mapasse – Human resources assistant, former intern

Natalia chose to study human resources because she had a family member who worked for the Ministry of Labor and was interested in the subject. She studied at the School of Labor Studies, which belongs to Ministry of Labor and used to be only for family members of Ministry staff, although it is now open to all, dependent on successful completion of an exam. A three-year course of study is followed after secondary school; in order to complete the course she had to do an internship and prepare a report on her placement. On finishing the internship, the company offered her a position, where she has now worked for just over a year.

#### Gimo Felizberto – Electrical Intern

After finishing 12<sup>th</sup> grade Gimo heard from friends about a church-financed vocational school. The school had begun informally, but received its official certification just before he enrolled. He studied for 6 months full time to gain a certificate as an electrician. He paid 3000 meticaís (approx. 100 dollars), in installments. No one in his family is an electrician and he does not know any electricians personally, but he was motivated by what he "believed would be useful." Hearing from a teacher about a company that sometimes hires its interns, he applied there for an electrician internship. Currently in his second month, he does not yet know if he will be kept on by the company after he completes the internship, nor what he would earn if he is retained.

## LABOR MOBILITY

Labor mobility implies the ability for labor to move between one segment of the labor market and another – whether it be “upward mobility” (i.e., starting as a junior and being gradually promoted over time to higher, more highly paid positions) or mobility between sectors (e.g., out of agriculture into construction or out of tourism into extractive industry). **Given the lack of skills at every level, and in particular at the lowest level of the formal labor market, as outlined above, intersectoral labor mobility in Mozambique is severely impaired.**

With regard to upward mobility in Mozambique, there is some evidence of companies promoting from within – but at times ceilings are reached due to lack of literacy or skills. One example was a supervisor in the mining industry who has demonstrated good learning ability and been promoted to supervisor, but cannot progress further as he is functionally illiterate. Middle management is often Mozambican in foreign-owned firms, but the senior management often (although not always) remains foreign, effectively creating a barrier. There is also a seeming

disincentive to provide good quality training for highly skilled staff, on the basis that they may be poached by another firm after training.

For the Dutch disease argument, labor market mobility is assumed to enable labor to flow *between* sectors of the economy, in this case, from tradables to non-tradables. This is problematic, even in developed labor markets, as some skills are sector-specific, or even company-specific. However, while labor is *physically mobile* within the rural sector, between rural and urban sectors, and among higher skilled labor, from south to center and north, the Mozambican labor market does not display much labor mobility in the sense of Dutch disease-incurred intersectoral movement. The barriers to entry into the formal sector, as seen above, on exiting agriculture, are significant, and we saw little evidence of this occurring, apart from when companies had specific agreement as part of their investment plan agreed with government to employ locally. Even when this happened, local people tended to be hired to do the most basic jobs (as skill levels were very low) and resented better-skilled or better educated people moving in or brought in from outside the area for more highly paid jobs.

There does seem to be some movement of rural households to diversify their income sources by engaging not only in agriculture but also other ‘non-farm’ activities or setting up small household enterprises. There is evidence of small-scale informal businesses being set up around mines, for example – bars, local restaurants, small-scale commerce, etc. As Fox and Sohnesen (2013) point out, small household enterprises can be a significant source of jobs and of increased welfare for households, and may over time enable households to invest in education and skills acquisition for younger members to eventually transition to the formal economy. However, with 300,000 new entrants into the labor force each year, the formal economy will not in itself be able to absorb most of those seeking work.

## LABOR MARKET INFORMATION

Another aspect of labor market mobility is the ability of labor to move based on information received – whether about job opportunities, higher wages in one sector or another, better conditions, etc. The information can provide ‘signals’ to labor to invest in particular skills, migrate, or push for higher wages. **Labor market information in Mozambique, as in many developing countries, is scarce, incomplete, and poorly disseminated.** This can lead to a mismatch of supply and demand of labor, as employers need particular skills, or need particular numbers of workers at certain times, but workers available to work do not know which skills to invest in, or where to find work.

The government has a number of sources of data that could be used to provide a more complete picture of the labor market and underpin labor policy. However, these sources are not comparable and there is little capacity within the government to carry out labor market analysis.

The last full scale survey of the labor market was carried out by INE in 2004/5. INE also collected some data on employment in the short-lived INCAF panel household survey, but this unfortunately has been suspended. The CPI collects data on jobs created in the formal sector through investment projects – but this is only for jobs projected to be created by those companies that go via the CPI and only for the formal sector. The Ministry of Labor produces some basic information but this is not published. INSS has a database that could provide information on

formal sector (social security-paying) companies. Five-yearly household budget surveys provide some information on ‘main source of income’ but the latest was in 2008/9 and the definition of ‘main source of income’ does not adequately reflect the complexity of household labor market strategies. The TIA agricultural household survey again provides some information about household income generation. INEFP centers also have registers of people seeking work and employers seeking workers, but many workers and employers do not register.

Nor do data seem to be available regarding particular skills and qualified professionals needs, which might enable a more nuanced approach to the authorization of foreign workers for specific positions (see below).

In order for there to be an efficient matching of jobs available with workers offering their services, employers and prospective employees need to ‘find’ each other. In a country such as Mozambique where infrastructure and telecommunications services remain poor, this presents particular challenges.

Firstly, there seems to be no formalized service to help young people and their families make decisions about their education – whether to stay on at school, what to study at school, whether to study at a technical secondary school, which courses to study, etc. It may be that some young people drop out of school because of a lack of information about possible alternatives or the likely returns to investment in particular skills. Even at universities there do not seem to be ‘careers services’ as are often present in developed countries to help students decide in what to specialize and on which branch of their chosen industry/profession to focus. While this partly depends on the aptitude and personality of the individuals involved, better information about future labor demand and wage levels across different types of jobs would be of help in facilitating ‘market signals’ to be better interpreted and acted upon by young people.

Universities do display some understanding of this and do make contacts with employers through their networks, but this seems to depend on the particular lecturers and companies involved rather than a concerted effort to place students and track their progress. Interviews with the national youth council confirmed that most students choose their degrees based on family connections, impartial information, and “what they like at school,” and that students have little idea when making these choices what opportunities these will bring in the future. While the same is true to some extent of students around the world, poorer Mozambican students are particularly disadvantaged in not having recourse to formal career services, as many will be the first in their family to be able to contemplate formal sector work. The levels of information in rural areas about the possibilities and returns to further education and exposure to people who have been through a higher education institution are both extremely low. Moreover, vocational training and employment still carry a social stigma, though skilled technician occupations can be highly remunerative. Currently, where simply having a degree is effectively a passport to a formal sector job in Mozambique, this may be a less serious concern than in the future but students agreed that both labor market information and exposure to role models or mentors might have kept others in school or encouraged them to invest in higher education.

Secondly, we found that there is little information flow about vacancies, wage levels, and labor demand for those already in the labor market. One example of this was a combined plantation and

agro-processing company which received labor from many parts of the country during the harvest – however, in some years not enough labor was supplied, and in other years, there was an excess so that some people who had travelled from distant provinces (investing their own funds to do so) had to return home without securing a job. A labor market observatory, long-planned under PIREP, was recently approved for implementation under MITRAB. It aims to bring together government, labor, and private sector representatives to create an information basis and forum for information exchange.

In an ideal world, such an information system would inform Mozambicans of current and expected structure of the labor force in Mozambique (employment by sector and occupations within sectors, ideally broken out by province), occupations for which employer demand is expected to rise in the next five years, education or training requirements for those occupations, and earnings of entrants into and more senior job holders in those occupations. More realistically, it would help if information about current job openings could be posted more widely.<sup>42</sup>

## FIELD ASSESSMENT CONCLUSIONS

To summarize conclusions from discussions with employers, employees, students, unions, government officials, and international organizations:

- The need to address the impact of the upcoming boom in extractives – and the role of labor and skills in this – is recognized widely by government.
- A large array of existing initiatives aims to address specific aspects of the labor market (skills, self employment, data etc). However, these are not subordinated to a coherent national strategy for industrial transformation and job creation, as has happened in other countries.
- The draft National Development Strategy (ENDE) could play this role – but only if accompanied by a more detailed analysis and operational plan, and only with high-level support to make this *the* national vision to which all other sector strategies should be subordinated.
- Skills shortages are felt fairly low down the “skills pyramid” – employers face severe difficulties finding not only professional management staff, but also qualified skilled technicians. Yet the barrier for unskilled or low-skilled workers to move up the skills ladder is fairly impermeable.
- Current institutions for TVET are under-resourced; while efforts are underway to reform curricula, provide modern equipment, and expand services, none of this is close to being sufficient to address current needs, let alone those that would emerge under a specific industrialization policy.

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<sup>42</sup> Some employment agencies do publish job listings, either online or in print media, but the geographic coverage of their outreach is unknown. Some specialized employment agencies aim to match employers’ demand with labor market supply in Mozambique. However, these tend to focus on employment matching in the highly skilled, highly competitive formal sector, rather than providing general information that would aid labor market mobility in general.

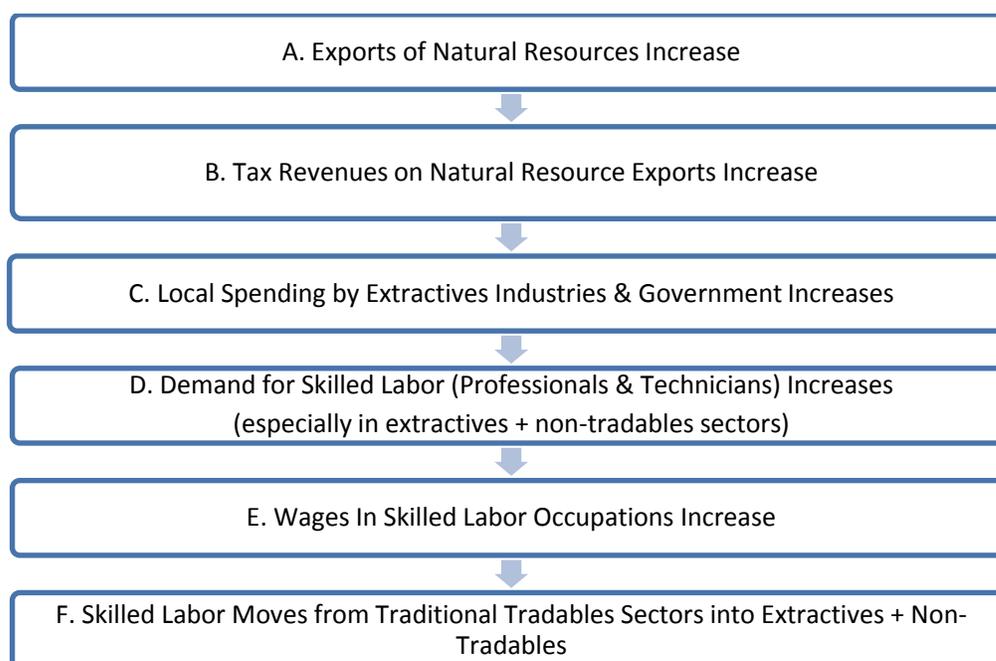
- While the development of national certification standards is laudatory, coherence should be sought with internationally recognized certification standards, in order to assure Mozambican trainees the ability to access jobs and/or move abroad to work in their skill areas, if so desired.
- Intersectoral labor mobility is limited; geographic mobility within labor categories is common.
- Labor market information is weak, fragmented, and not formally disseminated.
- The minimum wage is an important reference for companies, even those who pay above. At lower skills levels, where labor is easier to find, companies tend to have a fixed wage per position. For jobs requiring higher skills, wages are determined more by individual negotiation and market rates.
- Unions have a moderately important role to play in wage setting, particularly for lower skilled workers.
- Due to shortages of skilled labor, employers seek to hire foreign workers. There is a need for a more comprehensive, long-term strategic to the regulating of foreign workers, possibly based on better information about real skills gaps in the country.

The question remains, will the current multitude of interventions outlined above be enough to close the skills gap *in time* for Mozambique to have a sufficiently skilled workforce to benefit not only from the extractive industry boom, but to permit a diversification of the economy and inclusive, widespread job creation for all? Can the government seize the initiative, and define how the economy should be developed – and therefore, what skills should be being developed – rather than reacting to demand once it has emerged?

## 5. Summary of Expected Impacts of Dutch Disease on Labor Markets in Mozambique

The threat of Dutch disease in Mozambique is real. Although both foreign aid and foreign investment inflows have already been factors in the economy, flows of foreign exchange receipts via tax revenues from the extractives industry are expected to accelerate significantly in the next ten to twenty years. Pressures are already being felt in the local economy in terms of rising real estate values<sup>43</sup> and rising wage pressures for highly skilled labor. Some speculate that the future value of the metical may rise to twice its current value, relative to the US dollar, i.e., an exchange rate of 15 MT to the US dollar, all else remaining the same.

**Figure 10: Unfolding of Dutch Disease**



With the natural resource boom already underway since the mid 2000s, Mozambique is already experiencing stages A through F. To be able to assign parameters to the continuation of the logical chain of impacts in Figure 10 beyond stage F, one would need to know the following:

First, what is the expected level of increased demand for labor as a result of the boom:

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<sup>43</sup> See the SPEED blog post on this topic, <http://www.speed-program.com/blogs/by-subject/competitiveness-by-subjects/mozambique-real-estate-market-bubble-a-real-cause-of-concern>.

- What is the expected government investment program in infrastructure and social services, as a result of the resource boom, and what employment multipliers are associated with such spending?
- What is the likely level of “local content” expenditures by the extractives companies, and what employment multipliers are associated with such spending?
- What are the likely levels of private investment in industrial, commercial, and residential construction; manufacturing; services; infrastructure; and hospitality/food service sectors that may be spurred by opportunities associated with the resource boom, and what employment multipliers are associated with such spending?

Second, to what extent will Mozambican labor be able to move in response to perceived new opportunities, and how substitutable are different labor market segments for each other:

- What is the “substitutability” of skilled labor employed in agribusiness, tourism, and industry, for skilled labor demands in the extractives industries?
- What is the “substitutability” of rural, largely unskilled, labor for skilled or low-skilled labor demands in the extractives industries?
- How physically mobile and entrepreneurially flexible is rural labor?

Given answers to the above, what can be done to help mitigate potentially negative effects on labor markets and on the competitiveness of Mozambique’s traditional sectors?

While quantitative parameters to answer the above questions are unknown, the assessment team nonetheless draws the following inferences from the explorations conducted to date:

***1. The natural resource boom is already unfolding in Mozambique, although the full extent of the macroeconomic phenomenon known as Dutch disease is unlikely to be felt in full force for some time.*** Tax and export revenues from LNG sales are not expected for some time, although coal exports and associated revenues are already on the rise. As increasing numbers of megaprojects come online, the inflow of foreign investments and investors will be increasingly felt both in Maputo and near the exploration and extraction sites. Already, upward pressures on housing and commercial real estate markets, as well as in markets for skilled labor, are in evidence.

***2. Segmentation of labor markets in Mozambique today – management, skilled professionals, skilled technicians, on the one hand, and low-skilled labor, on the other – is significant.*** With supplies tight, wage pressures are already being felt for managers, financial professionals, human resource managers, and other professionals. Specific technical skills, however, may be required, e.g., a human resource manager is no substitute for a petroleum engineer nor is a private chauffeur a substitute for a hydraulic mining shovel operator. The labor assessment team heard numerous accounts of the tight available supply not only for managers and other skilled professionals, which is to be expected, but also in the category of *skilled technicians*, i.e., workers whose occupations require training, apprenticeship, and (possibly) certification. This puts great pressure both on skilled labor wages, for which an increasing premium is being paid in Mozambique’s labor market today, and on the foreign labor quota system, which presently

regulates the volume of workers that may be “imported” from off-shore to compensate for the present skills gaps.

**3. Due to real skills barriers low-skilled labor is largely NOT substitutable for the labor required by the extractives and other associated, surging sectors of the economy.** Four-fifths of the workforce is rooted in the agricultural sector, where poorly educated, largely illiterate Mozambicans work hard to earn their livings. They generally pursue some combination of subsistence agriculture, agricultural wage labor, off-farm wage labor, and self-employment via household enterprises to support themselves and their families. They may move within Mozambique or more broadly within the region (especially to South Africa) in search of casual, seasonal, or more steady employment, remittances from which help to support families back home. Though hard-working, this labor pool lacks a minimum set of “soft employability skills,” which includes *inter alia* demonstrated prior work experience and ability to hold a steady job; basic reading skills; communication skills; demonstrated ability to work and problem-solve as part of teams. This unskilled labor pool also lacks the technical skills required by formal sector employers. Since rural labor is unlikely to be hired into the extractives or non-tradables sectors in significant numbers, the expected impact of possible Dutch disease on wages in the rural sector is likely to be minimal.

**4. Yet the witnessed acceleration in mega-project approvals in Mozambique has raised expectations that the extractives industry will provide new jobs for Mozambicans.** It has, and it will, but only for a small number of skilled workers. Government and companies will need to manage expectations of local communities, and in particular address social unrest which could occur due to migration of labor from outside resource-producing areas.

The construction firms that will build railroads, ports, processing plants, warehouses, offices, and housing in support of the extractives will certainly provide more employment opportunities than will the extractives directly. However, these jobs are likely to be for skilled trades people, e.g., boilermakers, construction equipment operators, heavy vehicle and mobile equipment service technicians, electricians, plumbers, and welders. These occupations require some level of education, training, and certification.<sup>44</sup> Thus, except for the most basic occupations, the rural labor pool is unlikely to find regular employment in the extractives industry or in the construction activities that will surround it.

The government of Mozambique would do well to emphasize that the country’s economic future will depend on trained or educated workforce development. This message is not well understood by the public and needs to be broadly disseminated to encourage rational decision-making about labor migration, small business growth and investments near extractive industry locations, and even delayed school-leaving in favor of more education and skills-building. The message does also not appear to be well understood by government, leading to such counter-productive policies

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<sup>44</sup> For examples of occupational profiles and training and certification requirements in the United States, see the 2014 Bureau of Labor Statistics’ *Occupational Outlook Handbook*, published every two years and available online.

as restrictive foreign worker quotas that may have the unintended consequence of discouraging new investors from seeking to do business in Mozambique.

Instead, it should be the highest priority to establish a national employment policy<sup>45</sup> – putting employment at the heart of all government strategies, and more specifically a national workforce development strategy. Said strategy should consider a program to provide occupational outlook information to Mozambique’s youth, so that they can make smart decisions about their schooling, and invest in training or upskilling existing cadres of vocational trades that are needed not only to build Mozambique’s extractives plants but also its seaports, airports, roads, and energy and communications infrastructure.

**5. In the short run, skilled labor demand will be met through “imports” of foreign workers.** The cliché of the “global marketplace” applies to labor markets as well. In the short run, faced with immediate skills supply constraints, employers seek to negotiate with the Mozambican government foreign worker quotas that will allow them to access skilled labor from outside Mozambique. Without such access, international companies will weigh alternative options for extraction industry development, such as the construction of off-shore, floating facilities or off-shore construction of modular processing facilities that can be shipped to Mozambique for local assembly. In the longer run, as the diamond industry beneficiation example from Botswana and the Mozambicanization of labor in the Mozal example both demonstrate, it can make strategic sense for employers and government to partner in the development of education and training opportunities for Mozambicans to supply skilled technician and professional job candidates in the coming decade.

**6. Nonetheless, it is likely that some of the more ambitious or entrepreneurial will seek to move to areas of resource extraction activity.** For example, this has already been observed in and around Moma where Kenmare’s heavy sands operations are based. It is thus all the more crucial that the business environment – by which we mean regulations and their uniform implementation, as well as the availability of financing – be made conducive to establishing household enterprises, whether in retail, food service, transportation, security, household help, or other service provision that is likely to spring up around mining and other extractives’ sites.

**7. It is impossible to predict levels of expected investment spending by government, the extractives industries, and other private investors.** But the greater potential for resource boom-led job creation lies in labor-intensive public works projects financed by public revenues and the growth to be generated by associated private investment.

**8. Under Dutch disease pressure, as the value of the metical strengthens and profitability is squeezed, companies will be forced to review their cost structures.** More in-depth analysis will be conducted by companion SPEED studies in agriculture, manufacturing, and tourism. However, as local prices of tradable goods, determined in international markets in US dollars or euros and converted into meticais, will fall, and the cost of Mozambican labor, viewed from the global

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<sup>45</sup> This was a recommendation coming out of the ILO employment conference held in Maputo in March 2014.

market in dollars or euros, will rise. Companies will have to consider, *inter alia*, whether to retrench some percentage of their workforce, switch to less expensive imported labor, or invest in labor-saving machinery, which will be less expensive, in meticais terms, in the wake of currency appreciation.

For example, if the value of the metical were to rise from 30 MT/\$ to 15 MT/\$, this would double the price of Mozambican labor in foreign currency terms, all else being equal. In order to remain competitive with (already less expensive) workers in, for example, Southeast Asia, the productivity of Mozambican workers needs to rise significantly to compensate for their higher cost. Human capital development, upskilling of workers, and investments in higher value-added sectors of the economy will be needed if those higher wages (expressed in dollars or euros) are to be deemed affordable by investors.

***9. In the longer run, Mozambique's competitiveness will be enhanced not by requiring companies to use low-skill Mozambican labor, but by investing in a high-skill Mozambican workforce.*** Competitiveness, as Webber (2013) emphasizes, is not about costs, though costs surely affect corporate decision-making, but also about labor productivity, skills, innovation, and value chain differentiation. For Mozambique to successfully employ its natural resource “blessing” to embark on structural economic transformation, creating new industries and services employment opportunities for the country’s future workforce, it must invest now in its people.

As described earlier, labor market efficiency and how the economy responds to Dutch disease pressures depend on the extent to which barriers impede movement between segments of the labor market and how well information about the labor market opportunities is transmitted. Labor market information – present and expected labor demand and supply; wages by region, sector, and occupation; skills and certification requirements by occupation; working conditions – is extremely hard to come by, not only for expected labor market entrants, but also for workers already in the labor market who seek to change their work portfolios. Currently little information is available – on career options, employment opportunities, income-earning potential, or training requirements – to offer youth reasons to stay in school and choose particularly in-demand skills to learn.

As nuanced in Figure 12, opportunities for employment growth in Mozambique may or may not be realized, depending on 1) how successfully the government can communicate expectations about future labor market evolution to today’s youth who are making education and training decisions that will affect their entry into the labor market 3-5 years from now, and 2) whether coordinated efforts can be mounted to provide improved education and training opportunities to youth that respond to those expectations.

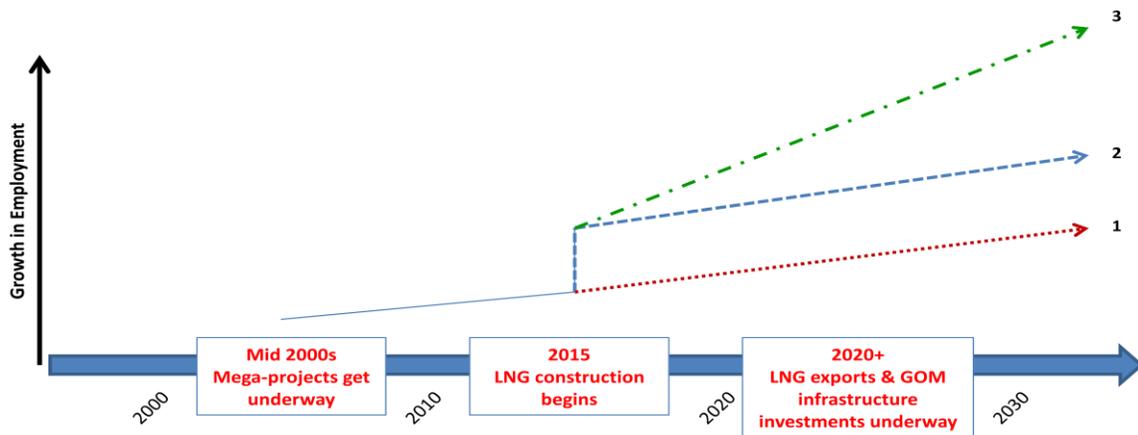
If a more comprehensive training effort is not mounted, the economy will likely not enjoy a strong bump-up in the level of employment (Scenario 1 below). Under such a scenario one might imagine various winners and losers from the natural resource boom, as summarized in the matrix below.

**Figure 11: Possible Winners and Losers under Scenario 1**

	<b>'Winners'</b>	<b>'Losers'</b>
<b>Exchange Rate Effect</b>	<ul style="list-style-type: none"> <li>• Consumers of imported goods</li> <li>• Importers</li> <li>• Companies that use mainly imported raw materials and inputs</li> </ul>	<ul style="list-style-type: none"> <li>• Agriculture (producing for export or to substitute for imports)</li> <li>• Exporters</li> <li>• Alternative investment opportunities</li> </ul>
<b>Boom Effect</b>	<ul style="list-style-type: none"> <li>• Skilled people</li> <li>• Extractive industries</li> <li>• Suppliers to the extractive industry</li> <li>• Transport</li> <li>• State and tax authority</li> <li>• Service providers – e.g., hairdressers</li> <li>• Construction &amp; construction material producers</li> <li>• Banks</li> </ul>	<ul style="list-style-type: none"> <li>• Unskilled people without access to training</li> <li>• Farmers</li> <li>• SMEs</li> <li>• Manufacturing firms</li> <li>• Tourism companies</li> </ul>

If training efforts only remain focused on the skilled technicians needed for rapid expansion of the extractives industry, there will be a short-term bump-up in employment, with longer term expansion continuing at an unchanged rate (Scenario 2). However, coupled with government and private sector investments to promote growth in other, labor-intensive sectors of the economy (infrastructure development, real estate, in addition to investments to increase productivity and innovation in traditional tradables, such as agriculture, manufacturing, and tourism), Mozambique should be able not only to enjoy a short-term bump-up in employment but also to embark on structural transformation of the economy that will enjoy accelerated level of employment growth over time (Scenario 3).

**Figure 12: Scenarios of Possible Impacts**



The likelihood of success in achieving Scenario 3 will be enhanced if the Mozambican government finalizes its National Development Strategy, targeting a strategy to allocate future revenues from natural resource exports to grow the economy by investing in labor-intensive sectors, the returns to which will position the country for dynamic, structural transformation. Building transport, trade, and telecommunications infrastructure, providing support to labor-intensive agricultural schemes, luring investments for labor-intensive manufacturing, and expanding human capital investments to raise literacy, numeracy, technical, and management skills, will provide the foundation for Mozambique to capture benefits from, rather than be undone by the Dutch disease effects of, an expanding extractives industry over the next two decades.

# Annex A. Interviews Held

## Government

- Augusta Pechisso, Ministry of Planning and Development, Economic Analysis and Planning Division, Deputy Director
- Rita Freitas, Ministry of Industry and Trade, Division of Private Sector Support (DASP), Director
- Steven Glover, Ministry of Planning and Development, Economic Analysis and Planning Division, Analyst
- Emídio Mavila, Ministry of Labor, Division of Planning, Cooperation, and Statistics, Director
- Lourenço Sambo, Center for Investment Promotion, Director-General
- Luís Eduardo Siteo, Ministry of Agriculture, Economic Advisor
- Emílio Ussene, Center for Investment Promotion, Project Management Services, Director

## Private Sector

- Angela Beresford-Miller, Berry Construction, Administration and Accounts Manager (by questionnaire)
- Emmy Bosten, Energyworks, Director
- Américo Celestino Chirruque, *Companhia Industrial de Matola*, Human Resource Director
- Bruce Chapman, Southern Sun Hotel, General Manager
- Gareth Clifton, Kenmare Resources PLC, Mozambique Manager
- Gimo Felizberto, Maeva Oils, Intern Electrician
- Andrew Fimister, Maris Capital Ltd., Founding Partner
- Jane Flood, Maputo a Pé, Owner
- Gabriel Fossati-Bellani, Pembaland, Partner
- Fernando Gruenberg Stern, Radisson Blu Hotel, General Manager
- David Hackey, Hotel Cardoso, Deputy General Manager (by questionnaire)
- Natália Mapasse, Maeva Oils, Human Resources Assistant
- Daniel Mondlane, Maeva Oils, Executive Director
- Rui Monteiro, Turconsult, Owner
- Paulo Negrão, GAPI Investment Company, Commercial Director
- Nyasha Nyaruwate, Rainbow Hotel, General Manager (by questionnaire)
- John W. Peffer, Anadarko Moçambique Area 1, President
- Telma Romão, Rio Tinto, Human Resource Manager
- Nuno Sidónio, CBE Southern Africa, Director
- Amelia Sobral, Sumol+Compal, Finance Manager
- Brittany Wenclawiak, Hay Group
- Graeme White, TCT Dalmann, Director (by questionnaire)

### **CTA**

- Hipólito Hamela, Economic Advisor
- Pedro Júnior
- Celso Nhantumbo, Consultative Mechanism Advisor
- Kekobad Patel, Executive Director
- Eduardo Sengo, Economic Advisor

### **Research, Education, and Training Organizations**

- Rosimina Ali, *Instituto de Estudos Sociais e Económicos*, Researcher
- Constantino André, National Union of Students, Vice President
- Rui Benfica, Michigan State University, Associate Professor
- Antonio S. Cruz, *Universidade Eduardo Mondlane*, Economics
- Professor Leopoldo de Costa, ISCTEM, Rector
- Yasfir Ibraimo, *Instituto de Estudos Sociais e Económicos*, Research Assistant
- Mafalda Mussengue, *Universidade Eduardo Mondlane*, Economics
- Professor Julio Tsamba, *Universidade Eduardo Mondlane*, Engineering Faculty, Director
- Rafael Uaiene, *Instituto de Investigação Agrária de Moçambique (IIAM)* and Michigan State University, Mozambique Policy Analysis and Planning Capacity for Improved Food Security and Nutrition Outcomes Project (MOZCAPAN)

### **Labor Sector Organizations**

- Jan Hjort, Ulandssekretariatet LO/FTF Council, Regional Representative (Danish labor union organization)
- Jeremias Timana, CONSILMO, Secretary General

### **International Organizations**

- Enrique Blanco Armas, World Bank, Senior Economist
- Igor Felice, International Labor Organization, Chief Technical Advisor
- Randolph Fleming, USAID/AgriFuturo Project, COP
- Jane Grob, Technoserve, Director
- Ana Menezes, World Bank, Education Specialist

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