



**University of the Witwatersrand  
Faculty of Commerce, Law and Management  
School of Economics and Business Sciences ó SEBS  
Corporate Strategy and Industrial Development (CSID) Research  
Programme**

*MASTER OF COMMERCE IN DEVELOPMENT THEORY AND POLICY*

**Course code: ECON 7042**

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**RESEARCH TOPIC:**

**Coal-based linkages and development in Mozambique**

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*A political economy perspective*

**Ethics Protocol No. CECON 1017**

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**Final Submission - August 2014**

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## **Acknowledgements**

My special thanks go to Prof. Carlos Nuno Castel-Branco for the trust and orientation provided for me to pursue my masters degree at the University of the Witwatersrand.

I was fortunate to have Dr Paul Jourdan as my supervisor in the production of this master's thesis. His deep knowledge of Mozambique's economic geology and vast professional experience on resource-based development work along with his openness and availability for discussion have been crucial for the transformation of my initial ideas into this thesis. Many thanks!

I thank lecturer Nicolas Pons-Vignon for his assistance in clarifying my initial vague ideas in the preliminary research project.

My master's degree would not have been possible without the concession and sacrifice went through by the two girls of my life – Flora and Noreen – who consented my absence from home.

To all of my lecturers and classmates, especially Rob Mopp who transcended from a mere classmate to a very good friend and brother, a very big thank you!

I thank all of those who spent their precious time to discuss with me the different sub-topics of this thesis, especially Prof. João Mosca, Dr. António Franco and Dr. Carlos Manuel Serra; and also those who remain unnamed here as they accepted to give me interviews.

## Abbreviations and acronyms

APT	Additional profits tax
CBM	Coal Bed Methan
CFM	<i>Portos e Caminhos de Ferro de Moçambique</i> (National Ports and Railways Company)
CIP	<i>Centro de Integridade Pública</i> (Centre for Public Integrity)
CSID	Corporate Strategy and Industrial Development
CSR	Corporate Social Responsibility
DUAT	<i>Direito de Uso e Aproveitamento de Terra</i> (Land Entitlement)
EITI	Extractive Industries Transparency Initiative
ENH	<i>Empresa Nacional de Hidrocarbonetos</i> (Hydrocarbons national company)
FDI	Foreign Direct Investment
FRELIMO	<i>Frente de Libertação de Moçambique</i> (Mozambique Liberation Front)
GAZEDA	<i>Gabinete das Zonas Económicas para o Desenvolvimento Acelerado</i> (Department of special economic zones)
GDP	Gross Domestic Product
GoM	Government of Mozambique
HRD	Human resources development
IESE	<i>Instituto de Estudos Sociais e Económicos</i> (Institute of Social and Economic Studies)
INE	<i>Instituto Nacional de Estatística</i> (National Institute of Statistics)
IRR	Internal Rate of Return
IRS	Internal Revenue Service
MEC	Minerals-energy complex
MIREM	Ministry of Mineral Resources
MW	Megawatt
PPP	Public-private partnerships
R&D	Research and development
RENAMO	<i>Resistência Nacional Moçambicana</i> (Mozambique National Resistance)
RRT	Resource rent tax
RTCM	Rio Tinto Coal Mozambique
SDI	Spatial Development Initiative
SEBS	School of Economics and Business Sciences
SME	Small and Medium Enterprises
SPL	Special mining leases
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
VAT	Value Added Tax

## **Declaration**

I, Tomás Mário Selemene, declare that this research report has resulted from my own original research work. Wherever I involve other people's work and ideas it is clearly attributed and all the sources are given.

This research report has never been submitted to any other institution before. This is the final submission in partial fulfillment of the requirements for the degree of Masters in Development Theory and Policy at the University of the Witwatersrand.

Johannesburg, August 2014

*Tomás Mário Selemene*

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## **Abstract**

Mozambique is currently moving from an aid dependent country to mineral dependent given the mining boom happening there thanks to the discoveries of huge reserves of coal, mineral sands and natural gas. The country is set to become one of the world's twenty top producers of natural gas and top ten largest producers of coal.

This research is a case study focusing on coal-based linkages that can foster broad economic growth and development in Mozambique. Using a political economy perspective, the research investigates the question about how the country can optimise the mining boom through coal-based economic linkages to foster broader socio-economic development.

The research finds that under the combination of its current fiscal and mineral regime with infrastructure problems plus the inexistence of a coal-based linkage policy, Mozambique will get negligible benefit from the exploitation of its finite coal resources. A major overhaul of these regimes is needed for it to make use of its coal to catalyse wider growth and development, before it is left with little other than large holes in the ground.

**Key words:** coal-based linkages, political economy, development, Mozambique.

## **Chapter 1: Introduction - contextualisation and justification for the research topic**

After sixteen years of civil war (1976-1992) followed by more than a decade of aid dependence (with about half of the country's gross national income coming from aid flows), Mozambique is currently moving from an aid dependent country to mineral dependent given the mining boom happening there thanks to the discoveries of huge reserves of coal, mineral sands and natural gas.

As observed by Lawson et al. (2014), the planned investments in the Rovuma basin, combined with the requirements for the increased exploitation of the gas reserves in the Mozambique Basin, and of coal and heavy sands amount to total Foreign Direct Investment (FDI) of some US \$88 billion over the next ten years<sup>1</sup>, more than six times the current GDP. Clearly, this “mining boom” has the potential to raise per capita income levels dramatically and to provide a major new source of domestic revenue. Already in 2013, the Mozambican government received significant revenues from the taxation of capital gains on the re-sale of exploration contracts within the Rovuma Basin (equivalent to 4.2 % of GDP). Table 1 below shows the decreasing aid dependence of Mozambique's economy.

**Table 1: Disbursements of Budget Support and their significance from 2004 to 2012**

	2004	2005	2006	2007	2008	2009	2010	2011	2012
<b>Total Budget Support (Mill USD)</b>	158.84	261.64	329.50	399.84	458.38	434.44	444.40	536.16	448.86
<b>Budget Support as % GDP</b>	2.9%	4.1%	4.9%	5.0%	4.6%	4.3%	4.8%	4.3%	3.1%
<b>Budget Support as % Total Revenue</b>	22.2%	30.5%	32.7%	31.4%	28.9%	24.3%	23.6%	19.6%	13.2%
<b>BS as % Public Spending</b>	11.2%	17.4%	18.8%	18.1%	16.6%	13.3%	15.0%	12.0%	9.4%
<b>BS as % External resources (excluding debt relief)</b>	16.5%	30.5%	25.8%	34.2%	29.1%	21.4%	28.7%	24.4%	23.7%

Source: Lawson et al. 2014

<sup>1</sup> This estimate is based on the announced plans of Anadarko, ENI, SASOL and Statoil in Gas, Kenmare in heavy sands and Vale and Rio Tinto in coal. (Internal document of the EU Delegation, June 2012 cited by Lwason et al. 2013).



The country is set to become one of the world's twenty top producers of natural gas and top ten largest producers of coal. As part of the new resource frenzy, \$2.7 billion has already been invested in the mining and hydrocarbon sectors (Selemane, 2012; 2013).

This research is a case study focusing on coal-based linkages that can foster broad economic growth and development in Mozambique. The research adopts a political economy perspective (Di John, 2006; 2011; Castel-Branco, 2011; Cramer, 1999), investigating the question of how to make the best use of the abundant coal resources at hand and avoid a resource curse and Dutch disease or the paradox of abundance.

The resource curse has been associated with the Dutch disease, which is associated with resource booms, accompanied by appreciations of exchange rates, making the non-resource sector less competitive. The Dutch disease is often characterized by real exchange rate appreciation, high labour costs, and the structural imbalances in economic development (Olanya, 2012; Biggs, 2012)

The concept of linkage is also applicable to both primary and industrial production closely linked to the “staple thesis”. This is used by economic historians and describes how growth experience in a country is concretely shaped by the specific primary product successively linked to export markets. Although the linkage theory is associated with input-output analysis, in its original form, it emphasizes the dynamic of entrepreneurship rather than focusing on its static framework of existing interrelations. In a given social, political and economic context certain characteristics of leading activities are conducive to providing a stimulus (Olanya, 2012).

#### *Justification for the research topic*

Currently three main mineral resources put Mozambique on the world’s extractive industry map: coal, gas and mineral sands, being the first two the most important. In this context, it is worth studying the possible linkages to be made around either gas or coal. And the reason why coal has been chosen as the object of study in this thesis lays on the fact that it has a wider range of possible linkages (including gas production) than gas. Several products can be made from coal and also various industries can emerge around coal exploitation. A detailed discussion on the potential coal-based industries is done in the chapters 3 and 4 below.

Coal can be used as solid fuel – used to produce electricity and heat through combustion. At least 40% of the world’s electricity comes from coal. Coal can also be used to produce a number of chemical products such as gasoline and petrol, methanol and fertilizer (EIA, 2013; Höök and Aleklett, 2010).

The World Coal Association (2013), summarises the main uses of coal as follows:

“Coal has many important uses worldwide. The most significant uses of coal are in electricity generation, steel production, cement manufacturing and as a liquid fuel. Around 6.6 billion tonnes of hard coal were used worldwide last year [2012] and 1 billion tonnes of brown coal. (...) Different types of coal have different uses. Steam coal - also known as thermal coal - is mainly used in power generation. Coking coal - also known as metallurgical coal - is mainly used in steel production. (...) Other important uses of coal include alumina refineries, paper manufacturers, and the chemical and pharmaceutical industries. Several chemical products can be produced from the by-products of coal. Refined coal tar is used in the manufacture of chemicals, such as creosote oil, naphthalene, phenol, and benzene. Ammonia gas recovered from coke ovens is used to manufacture ammonia salts, nitric acid and agricultural fertilisers. Thousands of different products have coal or coal by-products as components: soap, aspirins, solvents, dyes, plastics and fibres, such as rayon and nylon. Coal is also an essential ingredient in the production of specialist products:

- Activated carbon - used in filters for water and air purification and in kidney dialysis machines.
- Carbon fibre - an extremely strong but light weight reinforcement material used in construction, mountain bikes and tennis rackets.
- Silicon metal - used to produce silicones and silanes, which are in turn used to make lubricants, water repellents, resins, cosmetics, hair shampoos and toothpastes.”

It is clear from the above summary that coal has many uses and there is a very wide range of industries that can be built downstream from coal exploitation (beneficiation). In addition there are numerous upstream inputs to coal mining, such as capital goods, consumables and services that also offer a wide range of industrial opportunities (local content). Therefore it is worth exploring its potential linkages to foster a broader socio-economic development.

## 1.1 Problem Statement

There are competing narratives in resource-rich countries according to which the existence of valuable resources is more of a curse rather than a blessing. In some countries such as Angola, Nigeria, DRC, and Sierra Leone, valuable resources have been associated with political instability and poor economic performance with rising inequality. Sachs and Warner (2001), for example, find that resource abundance is strongly associated with slower growth, after controlling for traditional growth drivers, such as initial income levels, domestic investment rates, openness to trade, and institutional development.

However, heterodox authors find the resource curse theory problematic. For example, Di John (2011) argued that the proposition that oil abundance induces extraordinary corruption, rent-seeking and centralized interventionism, and that these processes are necessarily productivity – and growth restricting - is not supported by comparative or historical evidence.

For Hirschman (1981), resource abundance can be used to foster economic growth and development through a series of different and complementary linkages.

The massive amounts of foreign direct investment (FDI) channelled to exploit coal in the so-called mega-projects<sup>2</sup> in Mozambique, and sound gross domestic product (GDP) growth, contrasted with the decreasing levels of manufacturing and agricultural productivity poses both opportunities and challenges to Mozambique. Therefore the question is on how the country can optimise the mining boom through coal-based economic linkages (local content, beneficiation, services, etc.) to foster broader socio-economic development?

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<sup>2</sup> In Mozambique Mega-projects are defined as those projects with an initial investment of not less than US\$ 500 million.

## **1.2 Research questions**

In order to address the aforementioned research problem, the research will explore two key questions as follows:

**1.2.1** Building on the country's coal endowment (quantities and quality), medium and long term development plans, including legal and institutional frameworks related to the extractive sector, what is the government's orientation on coping the mining boom, economic diversification or rents maximization?

**1.2.2** Given such orientation, how can the country build the necessary coal-based linkages in order to foster socio-economic development and diversification?

## **1.3 Research Aims and Objectives**

This research aims to understand and explain the prospects and challenges posed by the coal boom to Mozambique's economy, hence how can the country build coal-based linkages to foster socio-economic development and economic diversification.

The objectives are three-fold:

- 1.3.1** Understand and establish what the major challenges are and opportunities brought about by the mining boom to the Mozambican economy;
- 1.3.2** Explore and suggest ways on how the country can, building on such challenges and opportunities, build the coal-based linkages in order to foster broader growth including socio-economic development and changes to the mineral regime;
- 1.3.3** Contribute to the understanding of what Mozambique can do to ensure intra-generational benefits from the mining boom.

## **Chapter 2: Research Methodology**

This research has been done through a qualitative-analytical approach using both desk research (literature review) and field work (interviews). The literature review, done in two levels, has consisted of surveying the most important theories and concepts around resource-based development debates advanced from different schools of thought. The theoretical and analytical frameworks used here consist of presentation of the main orthodox approaches on minerals-based linkages and development contrasted with its questioning through heterodox approaches.

The second level has consisted of surveying specific information on Mozambique: a thorough analysis of the current socio-economic and political arrangements around Mozambique's mining industry in general and coal in particular – a political economy perspective.

The information on Mozambique's coal endowments (quantities and quality), on the legal and institutional frameworks, mining development plans as well as the information on government strategies for coal exploitation has been collected using both secondary and primary sources, mainly interviews with different intervenients in the country's coal sector: government representatives at national and provincial (Tete) levels, namely from the Ministry of Mineral Resources (MIREM); Ministry of Transport and Communications; Ministry of Finance; representatives from the two biggest coal multinationals object of study here: the Anglo-Australian Rio Tinto and the Brazilian Vale (Rio Tinto Coal Mozambique – RTCM and Vale Mozambique). Some of the interviews have been done face-to-face, particularly those with Maputo-based informants, whereas the ones with informants from Tete have been done telephonically and by email.

Following Wits University's ethical procedure, the interviewees' identities are not disclosed in this report and all of the information obtained from them has been processed and presented in a way that guarantees their anonymity. Only the institutions they represent are mentioned.

The empirical results on the different aspects (coal quantities and quality, mineral regime, existing and projected linkages) make up the understanding of the government's perspective on how to cope with the coal boom as well as inform specific recommendations on how to achieve optimal coal-based linkages and development outcomes.

This is a case study, an exploratory research expected to contribute to the understanding and discussion about the possibilities of fostering coal-based Mozambique's development. The methodology adopted to achieve such goal consists of investigating coal-based linkages in a way that is consistent with the political economy approach. Unlike other studies with a neoclassical orientation<sup>3</sup>, this study has used heterodox economics approach: building on the analysis of the concrete socio-economic and political arrangements on the ground, and through a combined analysis of government strategies and multinationals' plans *vis-à-vis* the reality on the ground, build an understanding of the different factors that can promote or constrain a coal-based development path for Mozambique.

This paper is structured as follows. Apart from the previous and this chapter, the paper contains three other chapters. Chapter 3 discusses the literature review: the theoretical and analytical frameworks. Particular emphasis is put on the discussion about the Dutch disease and resource curse models, followed by a section questioning those two models using a political economy perspective. The chapter closes with a discussion on linkages framework. Chapter 4 presents the key findings and its discussion with a detailed section on building coal-based linkages in Mozambique. Chapter 5 closes the report with concluding remarks drawn from the analysis done in the previous chapters. This is followed by a list of references and appendices.

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<sup>3</sup> For instance, as pointed out by Buur et al. (2013), in recent years a number of studies have emerged that try to understand linkages in African extractives from the macro-, meso- and micro-perspectives. Some of these studies are economic studies that use econometric methodology to analyse linkages and spill-overs at the aggregated level. Other economic studies use input-output models to measure impacts such as multiplier effects at the meso-level. Also at the meso-level, Global Value Chain theory-inspired studies map extractive value chains and the factors shaping firm relations within those chains. Finally, we have business economics-inspired firm-level studies which typically conduct case studies of the linkages and corporate social responsibility (CSR) strategies of multinational corporations.

## **Chapter 3: Literature review ó theoretical and analytical frameworks**

### **3.1 The mainstream in perspective: Dutch disease and resource curse models**

Dutch Disease is the name given to some negative spill over effects of a natural resource export boom, or some other transfer effect, such as foreign aid, which produces a surge in extra wealth for a country. Put differently, Dutch disease is the condition whereby a resource boom leads to appreciation of the real exchange rate and in turn damages manufacturing and other tradable sectors (Biggs, 2012; Rosser, 2006).

The designation originated from the phenomenon that occurred in the 1960s following the Netherlands discovery of natural gas in the North Sea. The Dutch found that their manufacturing sector suddenly started performing more poorly than anticipated. There was a deindustrialisation in output and employment following the resource boom (McKinley, 2008; Selemene, 2012).

In the Dutch disease model resource sector also sucks in skills and capital from other sectors whereas the resource curse is a wider term, including rentier politics and Dutch disease undermining growth and development. As Poteete (2009) puts it, the Dutch disease is considered as the product of rentier politics that undermines long-term economic performance in resource dependent economies resulting in a resource curse. Institutions and state development during resource boom are locked into development trajectories. The end result is negative development outcomes such as poor economic performance, growth collapses, and high degree of corruption, ineffective governance and greater political instability (Olanya, 2012).

The expressions Dutch disease and resource curse entered into common language where people use them to refer to almost any problematic situation caused by (or at least thought to have been caused by) mineral resources abundance or exploitation. However, its appropriate meaning entails a rigorous reasoning. As Ross (2006; p. 306) puts it, “more formally, the Dutch disease describes the combined influence of two effects that commonly follow resource booms. The first is the appreciation of a state’s real exchange rate caused by sharp rise in exports; the second is the tendency of a booming resource sector to draw capital and labour away from a country’s manufacturing and agricultural sectors, raising their production costs.”

With regard to the causes of the resource curse, Ross (2006) as cited in Selemene (2012) notes that there are both prominent economic explanations and political aspects to be taken into account. In economic terms, he argues, the resource curse is caused by four factors: first, a decline in the terms of trade for primary commodities; second, the instability of international commodity markets; third, the poor economic linkages between resource and nonresource sectors; and fourth, the so-called Dutch disease.

The political explanations can be divided into three dimensions: 1) *cognitive explanations*: which argue that resource booms produce a type of short-sightedness among policy makers; 2) *societal explanations*: saying that resource exports tend to empower sectors, classes, or interest groups that favour growth-impeding policies; and 3) *state centred explanations*: which say that resource booms tend to weaken state institutions that are necessary to foster long-term economic development.

Despite their popularity, the expressions Dutch disease and resource curse are contested both theoretically and empirically. The next section explores such contestations in a political economy perspective as opposed to the orthodox economics perspective.

### **3.2 Questioning the Dutch disease and resource curse models from a political economy perspective**

The Dutch disease and the resource curse models are the champions found by mainstream economics when analyzing the relationship between natural resources abundance and economic performance. The seminal paper by Sachs and Warner (1995) entitled “Natural resource abundance and economic growth” is known as the pioneer of this body of literature.

A number of studies have argued that the proxy used by Sachs and Warner (1995) which consisted of using the share of exports of primary products in gross national product as their proxy for natural resource abundance and that found it to be negatively related to economic growth, does not really capture resource abundance and that other measures such as reserves or production should be used instead. For instance, Brunnschweiler (2008 cited in Kolstad and Wiig 2008) employs an index of natural wealth per capita, and finds a positive relationship between resource abundance and growth. A number of different proxies have been employed to



date with different results, making some referring to the resource curse as ‘missing’ or ‘elusive’ or ‘a red herring’.

It is thus clear that the resource curse model is highly contested both in theory and policy. This shows that despite the existence of a wide list of empirical and econometric studies trying to sustain the argument for the Dutch disease and the resource curse, both models are not conclusive (Rosser, 2006). In other words, the argument that natural resources abundance is associated with various negative development outcomes is, by no means, conclusive.

Existing explanations for the resource curse do not adequately account for the role of social forces or external political and economic environments in shaping development outcomes in resource abundant countries, nor the fact that, while most resource abundant countries have performed poorly in developmental terms, a few have done quite well (*Ibid.*).

Kolstad and Wiig (2008) noted that the literature [on the resource curse] also includes important areas of disagreement and fragmentation within the research community. This diversity, they point out, takes many forms, some of which are questions of whether a resource curse really exists or not, a question that is linked to issues of choosing relevant methods of measuring resources, which mechanisms explain a potential curse, and what policy implications to draw from the various theories and available evidence.

While acknowledging the existence of various explanations of the resource curse, Rosser (2006; p. 27) notes that “the existing explanations for the resource curse do not adequately account for the role of social forces or external political and economic environments in shaping development outcomes in resource abundant countries, nor for the fact that, while most resource abundant countries have performed poorly in developmental terms, some have done quite well.” This means that the resource curse and Dutch disease models have serious shortcomings in theory and evidence, as argued by Jonathan Di John (2011). Hence we need a theoretical approach that can help us understand not only the reasons why the Dutch disease and resource curse models fail to explain the dynamic relationship between resource abundance and economic performance, but also and overall, what should be the way forward in terms of both theory and policy.

As argued by Di John (2011), the outcomes of resource booms depend on state policy responses. This argument is consistent with that advanced by Cramer (1999) in that it may be that the performance of primary commodity-based development (industrialization) depend more on political factors rather than on mere technical or economic factors. Paul Jourdan (2013) concurs with this line of thought by remarking that what is significant is that all of [the resource curse channels] can be neutralised or ameliorated through appropriate policies and strategies and the resource “curse” can be turned into a “blessing” through targeted deployment of the resource rents and opportunities.

There is a general consensus that policy options are crucial in transforming natural resources (oil, gas and minerals) into national wealth and development. The recipes prescribed to achieve sound development outcomes from resource booms vary from one school of thought to another.

From a political economy perspective, and building on Hirschman (1981), Jourdan (2012), Di John (2011) and Castel-Branco (2011), the development of linkages (taking into account the specific local socio-economic and political conditions) appear to be the best way of coping with a resource boom as it allows the country to diversify its economy instead of only capturing rents from finite and non-renewable resources such as oil, gas and minerals. The next section explores in detail the linkages framework.

### **3.3 The Linkages Framework**

In this study, building on Hansen et al. (2009; p. 122) as cited in Buur et al. (2013) linkages are defined as ‘inter-firm transactions that go beyond arm’s length, one-off transactions and involve longer term collaborations between the parties.’

According to UNECA (2013), the linkage framework was created some decades ago by one of the pioneers in studies of industrial development arising from commodities, Albert Hirschman. Successful economic growth is an incremental (but not necessarily slow) unfolding of linkages between related economic activities consisting of three major types of linkages from the commodity sector (Hirschman, 1981):

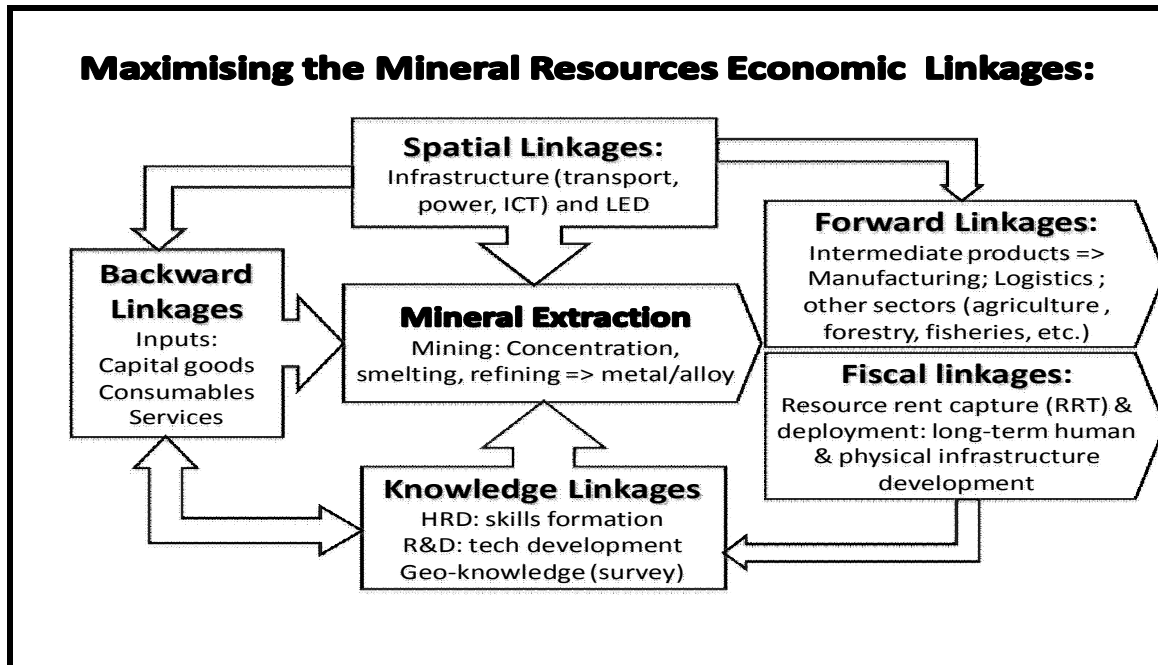
*First)* Fiscal linkages – the resource rents the government can harvest from the commodity sector in the form of resource rent taxes, corporate taxes, royalties, sales taxes, trade tariffs and taxes on employees’ incomes. These rents can be used to promote industrial development in sectors unrelated to commodities;

*Second)* Consumption linkages – the demand for the output of other sectors arising from the incomes earned in demand from the commodity sector;

*Third)* Production linkages – these include forward (processing commodities) and backward (producing inputs to be used in commodity production). For Hirschman (1981; p. 75), production linkages pave the path for industrial diversification, since for him “industrial development process is essentially the record of how one thing leads to another.”

With regard to the mining industry, Jourdan (2012; 2013) advances five types of linkages as presented in figure 1 below and discussed in detail in the next sub-sections.

**Figure 1:** Establishing the Seminal Resource Linkages



*Source:* Jourdan (2012; 2013)

### 3.3.1 Fiscal linkages

The state capacity to develop an effective fiscal apparatus capable to capture rents and reinvest them into the broad national economic sphere is what constitutes the basis for fiscal linkages. Such linkages are considered as the most important ones. Their efficiency is the most important determinant of ultimate benefits. However, achieving fiscal linkage is likely to be difficult, unless the ability to tax is combined with the ability to invest productively. In a situation where earned revenues from the enclave are siphoned off for the purposes of irrigating other parts of the economy, the possibility of either faulty investment or a great deal of leakage is most likely (Olanya, 2012).

Another way of conceptualising fiscal linkages is through the well known Hartwick's rule<sup>4</sup> according that defines the amount of investment in produced capital (buildings, roads, knowledge stocks, etc.) that is needed to exactly offset declining stocks of non-renewable resources. The rule requires that a nation invest all rent earned from exhaustible resources currently extracted, where "rent" is defined along paths that maximize returns to owners of the resource stock. The rule extends to the case of many types of capital goods, including a vector of stocks of natural capital (Hartwick, 1977; Kirk & Hartwick, 2005).

As pointed out by Jourdan (2013), resource rents should be used to improve the basic physical and knowledge infrastructure of the nation. Generally, the resource rents are not shared with the resource owner (the state/people), except in some cases, partially such as through the additional profits tax (APT) in the special mining leases (SML) in Zimbabwe and the implementation of a resource rent tax (RRT) should be considered for all mining operations, possibly to be kept offshore to ameliorate currency appreciation and fiscal shocks, and which could be drip-fed back into long-term (ten to twenty year) knowledge and physical infrastructure.

As remarked by van der Ploeg (2013; p. 20):

“A key challenge for many resource-rich countries is to convert their natural resource assets into long-lasting assets above the ground such as physical capital, human capital and financial wealth held abroad. If they do this well and are able to keep genuine saving per capita, i.e., national saving per capita suitably corrected for the depletion of natural resources and deterioration of the natural environment, zero or positive then social welfare per citizen will stay stable or increase over time provided consumption per head is independent of the population size and population

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<sup>4</sup> This rule was formulated by John Hartwick in a 1977 American Economic Review article entitled “Intergenerational Equity and the Investment of Rents from Exhaustible Resources”

growth is constant. Countries that squander their natural resources have negative genuine saving, become poorer over time. It thus boils down to what the best way to manage national resource wealth is.”

If it is not feasible to do that, it may be better to keep natural resources unexploited until fairer and more democratic political times emerge.

### *3.3.2 Spatial linkages*

This category of linkages comprise infrastructure: sidestream – collateral use of mineral infrastructure and local economic development (LED).

Resource infrastructure generally relies on state assets (servitudes) or rights (licenses) and consequently constitutes a potential lever for encouraging the resource and the infrastructure concessionaires to optimise the local mineral and infrastructure linkages. The high-rent resources infrastructure (mainly minerals) could be used to open up other lower rent, resource potential (such as agriculture, forestry and tourism), as per the spatial development initiatives (SDI) methodology in order to access zones of economic potential with lower returns that cannot afford their own requisite infrastructure. All resource concessions must include third party access at non-discriminatory user-tariffs to all the resources infrastructure (transport, power, water and telecommunications), in order to catalyse the higher development impact resource infrastructure ‘hitch-hikers’ (such as agriculture), which in general have a much higher socio-economic propulsive impact (Jourdan, 2013).

### *3.3.3 Forward linkages*

Forward linkages are those consisting of downstream value addition (mineral beneficiation). Enforcing mineral beneficiation or moving up the value chain of commodities exploitation can deliver benefits for income, but it requires competitive processing industries and access to marketing and distribution networks (UNECA and African Union 2011; UNECA 2013). Paul Jourdan (2013) notes that the locational advantage of producing crude resources should be used to establish resource processing industries that could then provide the feedstocks for manufacturing and broad industrialisation. In this regard, he argues, the resource contracts or licenses need to provide incentives or disincentives for mineral resources downstream beneficiation. However, the widespread practice of monopoly pricing of beneficiated

minerals/metals could negate this advantage for the manufacturing industry (especially processes with high entry barriers such as steels and polymers).

#### *3.3.4 Backward linkages*

Backward linkages comprise the mineral inputs (purchases) of capital goods (vehicles, rolling stock, plant, machinery, etc.), services (technological, engineering, analytical, financial, labour, etc.) and consumables (explosives, fuels, wear parts and spares, grinding media, reagents, etc.). This type of linkage is seen as the most crucial one. As remarked by Paul Jourdan (2013), of all the mineral resources economic linkages opportunities, the backward linkages most probably represent the most potential, but they can also be difficult to realise. In general, the backward linkages are knowledge intensive (engineering) which take time to build, but they are also the most “agile” in that international experience has shown that many enterprises that started out in the resources inputs sector were able to reinvent themselves in other sectors, due to being engineer-intensive. Consequently, as a cluster, it is able to reduce dependence on exhaustible resources and form the nuclei of resource-independent industrialisation and job creation.

#### *3.3.5 Knowledge linkages*

Knowledge linkages are of sidestream linkages (with infrastructure) and comprise human resources development (HRD) and technology/production development – research and development (R&D). Resources exploitation technologies generally need to adapt to local conditions (for example, climate, mineralogy and terrain) in order to provide opportunities for the development of niche technological competencies in the resources inputs sector. This sector tends to be knowledge-intensive and accordingly needs ‘priming’ through investment in human resource development (HRD) and R&D. However, several studies have shown that it has the capacity to later ‘reinvent’ itself outside the resources sector to produce new products for other non-resource markets. Critical to the development of technologies and products is the development of the requisite human resources with technical skills (engineers, scientists, artisans, technicians) and investing in HRD capacity development institutions: universities, colleges, training centres, etc. (Jourdan, 2013).

### 3.4 Factors promoting and constraining linkage formation

This section is adapted from Buur et al. (2013) in their discussion on the key factors that can either promote or constrain the linkage formation as follows. The approach followed here has two main differences from the one used by these authors: first, what these authors denominate policy measures as “government strategies and capabilities” such is called simply “government policy” here. Second, while they refer to technology gap as simply a sub-factor within the factor “local industries strategies and capabilities”, the same is set as a factor on its own here given its relevance as explained below.

#### 3.4.1 Government policy

The ideological orientation of a government policy is a key determinant of whether there is going to be a pro-linkages formation agenda or just an unproductive rent-seeking. More specifically, as Buur et al. (2013) put it, actions (or lack of actions) of governments are essential to understanding the breadth and depth of linkages in African extractives. A host of instruments and strategies are employed by African governments to promote linkages in extractives, such as ownership requirements, local content requirements, local processing standards, hiring requirements, mandatory CSR programmes and supplier development programmes etc. The justification for such measures is that infant industries need to be protected and that the market power of multinational corporations’ needs to be curbed or directed towards developing linkages.

#### 3.4.2 Multinational corporations’ strategies and capabilities

The second driving factor and shaper of linkage practices for extractive natural resources are the multinational corporations’ strategies and capabilities. Generally, the literature looks at macro and meso-level determinants of linkages, and little has been written about firm-level determinants (Mjimba 2011; Rugraff and Hansen 2011 all cited in Buur et al. 2013).

#### 3.4.3 Local industry strategies and capabilities

A third key driver and shaper of linkage practices relates to the organization, capabilities and strategies of local firms. Local firms do not automatically and passively respond to regulatory initiatives and/or the strategies of mining corporations. They have different capabilities and interests in linkage formation and use different strategies to pursue these interests. In general

however, there are strong incentives for most local firms to link up with foreign investors, partly due to the business opportunities that linkages create and partly due to the learning and upgrading opportunities (Buur et al. 2013).

#### *3.4.4 Technology gap*

The fourth factor refers to existing gap in the technology used by local firms and the one that would be required in order for them to be capable of linking up with multinational companies exploiting mineral resources at one level; at another level, this refers to the technology gap between foreign investors and local firms which is too great and the absorptive capacity of local industry is too low, hence linkages become difficult to establish, and learning and spill-over effects end up being few. Several studies cited by Buur et al. (2013) such as Diyamett (2012), Robbins et al. (2009), and Morrisey (2012) find that a main cause of the lack of linkages in African extractives is the high technology gap from local industry that seriously hampers efforts to create linkages.

#### *3.4.5 Donor strategies and capabilities*

The final force driving and shaping linkages is donors. Donors play a key role in large parts of Africa, as is the case of Mozambique where about 40 per cent of gross national income (GNI) comes from donors. As Morrisey (2012, p. 31) cited in Buur et al. (2013) argues, donors ‘can be very influential in a hierarchical policy-learning context by placing certain issues on the policy agenda, especially where they also provide advice and assistance on implementing the policies’.

Many donor activities, Morrisey notes, have focused on building institutions to manage resource rents, but donors have also slowly but steadily become more involved in facilitating linkage formation related to natural resource extraction.

Donors in general, and the World Bank and the International Monetary Fund (IMF) in particular, are traditionally and ideological opposed to linkages formation as these usually fall under industrial policy and counter-market oriented macroeconomic frameworks. In this regard, Buur et al. (2013) observe that “it is a characteristic of the World Bank’s approach (which seems aligned with the IMF’s) that the linkage issue is not given much attention in its advice and recommendations, possibly due to its aversion to industrial policy”.



## **Chapter 4: Findings and Discussion**

### **4.1 Brief background to Mozambique**

With a population estimated at 24 million people (INE, 2013), the Southern African country Mozambique shares its borders with the Indian Ocean and the following countries: Tanzania, Malawi, Zambia, Zimbabwe, Swaziland and South Africa. It gained independence from Portugal on June 25, 1975. Two years after gaining independence, the country sank in a bloody sixteen years civil war that killed approximately one million people. In 2012, Mozambique celebrated two decades of stable lasting peace, with political stability and a gross domestic product (GDP) ranging between 6.3 and 8.7 per cent from 2003 to 2012, the country was considered as an “African success story” by mainstream media as well as various international agencies such as the World Bank and IMF. Things changed in the second half of 2012 when the former rebel movement Renamo’s President Afonso Dhlakama went back to the bush and undertook military attacks in the central province of Sofala, allegedly in protest against electoral law, socio-economic exclusion and lack of separation between the state and the ruling party Frelimo. The tension resulted in some multinationals like Rio Tinto withdrawing of expatriates’ families from Tete and Maputo.

Even before Renamo’s returning to the bush in October 2012, Mozambique’s success story was been questioned in various stances. As noted by the United Nations Development Programme (UNDP, 2013), while Mozambique has made some significant social and economic gains, including increases in school enrollment rates and a drop in maternal mortality, it remains one of the poorest countries in the world, ranking 185 out of 187 countries on the 2012 United Nations Human Development Index. Inside Mozambique, various analyses (e.g. Castel-Branco, 2010; 2011; 2012; INE 2011) have questioned the celebrated country’s success story and pointed out the paradox of economic growth measured by GDP along with growing and deepening levels of poverty. As remarked by Castel-Branco (2011): “over the last 14 years the GDP per capita has doubled, but the percentage of population living below the poverty line decreased by only 15 per cent, in other words, less than 1 per cent per year while the GDP increased 55 per cent, equivalent to a growth rate of 7.5 per cent per year.”

The above described paradox has become more relevant with the current country's mining boom as discussed in detail in the next sections below.

## **4.2 Mozambique's mining history, coal endowment and weight in the national economy**

Contrary to what it seems Mozambique's coal mining industry is not new. It is only the current boom that is new as the current massive FDI by mining giants was not present in the country before. In the 1970s when the Moatize Basin in Tete Province yet had coal mines that were used to be owned by the *Companhia Carbonífera de Moçambique*. This was a subsidiary of *Union Minière* (Belgium) but were nationalised in 1977 after a major colliery disaster in which 130 miners lost their lives. Since then they were run by Carbomoc [a former state coal mining company] and technical services were provided by the former German Democratic Republic until March 1990 (Jourdan, 1990).

Mozambique is set to become one of the world's 10 largest producers of coal and 20 top producers of natural gas. Vast coal reserves and significant potential for additional mineral deposits in Mozambique position the country as one of the most important growth stories in the global mining sector going forward. Mozambique is set to benefit from large coal demand from China and India and could well become one of the 10 largest coal exporters globally by 2017. Coal output is forecast to reach 41.8 million tons by 2017, driven mainly by Vale and Rio Tinto (Selemane, 2013; KPMG, 2013). According to various projections, Mozambique's annual coal production will be around 100 million tonnes of coal a year after 2015, when the mines in Tete province, which has the highest concentration of coal exploitation projects, become completely operational (Rosenfeld 2012; Selemane 2013), provided that the logistics constraints can be overcome (heavy haul rail and port terminals).

Table 2 below gives an outline of Mozambique's coal projected production which gives an idea of endowment, exploration and production including the companies (plus shareholders) involved in it. The data is only for the most important coal mining site in the country, Tete province.

**Table 2:** Mozambique's coal endowment, exploration and production in Tete Province

Company	Country	Location and stage of project	Shareholders	Projected production (million tonnes)	
				<i>Coking coal</i>	<i>Thermal coal</i>
Vale Moçambique	Brazil	Moatize 1 (producing) Moatize 2 (hope to start production in 2015)	Vale do Rio Doce 85%; Mozambican state 5%; reserved for national investors 10%	17.16 (with 8.58 each in Moatize 1 & 2)	5.2 (with 2.6 each in Moatize 1 & 2)
Rio Tinto	Australia/UK	Benga (producing since 2012) & Zambeze (projected start of production 2014)	100% Rio Tinto (bought Riversdale Mining for \$3.8 billion)	Benga, 6 & Zambeze, 13,5	Benga, 4 & Zambeze, 9
Jindal	India	Producing since 2013	Information not available	3	2
Eurasian Natural Resources Corporation (ENRC)	UK/ Kazakhstan	Cahora-Bassa, producing since 2013	Kazakhmys 26% Alex Mashkevitch 14.6% Alijan Ibragimov 14.6% Patokh Chodiev 14.6% Kazakhstan state and privatization committee of the Ministry of Finance 11.6%	6	4
Beacon Hill Resources	UK	Minas de Moatize, (Producing since 2011)	Information not available	0,72	1,64
Ncondezi Coal Mining	UK	Ncondezi (projected start of production 2014)	Strata Limited 44.8 % Henderson Global Investors 8.6 % Investic Asset Management 7.2% Spearpoint 6% Ncondezi Trust No. 1 Ogier Employee Benefit Trustee Ltd 5.5% Evergreen Resources Holding (HK) Limited 4.9% Goldman Sachs Nominees 3.8%	0	10,5
Anglo-American	UK/USA	Revuboe; (projected start of production 2015)	Anglo-American 58.9%; Nippon Steel Corporation 33.3% & POSCO 7.8%	5,1	3,4

**Source:** Adapted from Selemene (2013) and interviews with companies representatives.

As table 2 above shows, Brazilian multinational Vale and Anglo-Australian Rio Tinto are by now the biggest players in the Mozambique's coal sector, hence the emphasis on them in this research. As pointed out by Selemene (2009) and Ali & Miclea (2013), in 2004, Brazil's Vale became the first major international mining company to be granted a concession in Mozambique, with its mine at Moatize officially opening in mid-2011. The initial \$1.7 billion investment by Vale surpassed that of Mozal to become the largest single investment in Mozambique's history thus far. The Rio Tinto project (Benga) has invested US\$ 850 million and started coal production in 2012 (Coughlin et al. 2013).

Until recently the general contribution and significance of the extractive sector in general and of coal in particular in the national economy was very limited. In 2011 the minerals-energy sector's contribution to GDP was around 2 per cent<sup>5</sup>. However the scenario is changing very quickly. A recent Extractive Industries Transparency Initiative (EITI) report notes that “the exportation of coal in large scale is a reality that will immediately boost the current development status of the country” (Ernst & Young, 2012; p. 11). The growth in Mozambique's mining sector is expected to increase from 1.5 per cent of GDP in 2011 to 2.9 per cent of GDP in 2017. Mozambique's economy is expected to grow at about 8 per cent for both 2014 and 2015, driven by high foreign direct investment (FDI) inflows — mostly in extractive industries, continued increase in coal production, infrastructure investment and credit expansion (KPMG, 2013). The biggest challenge is on how to convert the mining boom into a broad national long-term socio-economic development. There are two complimentary ways towards the creation of developmental basis relying on minerals. The first has to do with the fiscal regime and the second with linkages built around minerals to foster economic diversification and industrialization beyond abundant minerals be it coal, gas or oil.

### **4.3 Mozambique's mineral regime - Legal and institutional frameworks**

Mozambique's mineral regime is based in the so-called principle of “free mining” or “free entry” which, as defined by Barton (1993; p. 193) cited in Jourdan (2013), includes: “a right of free access to lands in which the minerals are in public ownership; a right to take possession of them and acquire title by one's own act of staking a claim; and a right to proceed to develop and mine the minerals discovered.

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<sup>5</sup> Personal interview with Ministry of Finance

According to the Mozambican Constitution, article 98, number 1 (Mozambique’s National Assembly, 2004), all mineral resources located on surface and underground, in the sea, in the continental platform and in the exclusive economic zone belong to the state. As summarised by Coughlin et al. (2013), under current legal framework, there are three different mining licenses:

“A reconnaissance license allows the holder to carry out non-exclusive prospection over a period of two years and 100,000 ha. Non-renewable. An exploration license grants exclusive rights to prospection and investigation over five years, up to 25,000 ha. Renewable for a period of one year. A mining concession allows the holder to conduct mining operations, and is valid for the life of the mine, up to 25 years and renewable for further periods of 25 years. The size granted is what is reasonable for the operations contemplated, and a surface tax discourages overlarge concessions.”

Mozambique’s mining law, like those from other African countries in general, is a product of the World Bank’s intervention (“technical advise” and/or “development assistance”) initiated in the late 1980’s until the present (Jourdan, 2013). This entailed the adoption of pro-corporate mineral regimes with massive tax exemptions. In the case of Mozambique such mineral regime has been (and still is) widely contested by academics, civil society organisations as well as opposition political parties. Government and mining corporations usually try to argue for the tax exemptions with the need for “attractive” mineral regimes for big corporations (“race to the bottom”). However both theoretical and empirical evidence show that Mozambique’s attractiveness has nothing to do with massive tax holidays (Bolnick, 2009; Castel-Branco, 2010; Selemene, 2012; CIP 2013). The mineral regime is currently under revision. The major changes are presented in table 3 and discussed in subsequent sections below.

**Table 3:** Fiscal regime for coal in Mozambique (under revision)

Taxes	Coal
Royalty (tax on actual production; the new law proposal intends to change it to tax on actual sales)	3 per cent (the new law proposal intends to increase it to between 5-10 per cent)
Surface area (this is a sort of rent for land use/occupation)	Varies between 10Mt/km <sup>2</sup> & 3000 Mt/km <sup>2</sup> (1USD = 30 Mts)
Corporation tax ( <i>Imposto sobre o Rendimento de Pessoas Colectivas, IRPC</i> )	Concession companies (with licence): 32 per cent Subcontractors: 20 per cent
Special exemptions	Reduced taxes on imported machinery

**Source:** Adapted from Selemene (2013) and personal interviews with MIREM representatives

Beside the fact that the key issues being addressed in the above mentioned revision of mining (coal) regulatory framework are local content and participation in the industry as well as the

reduction of exploration time from its current allowance of ten years, the targets of the revision can be summarised in three points as follows:

“First, highlights of the amended bill include the shortening of exploration licenses to eight years rather than 10, requiring concession holders to start production within 48 months of being granted their concessions, and requiring prior authorization of the Minister [of Mineral Resources] for all indirect transfers of shares in mining companies that result in a change of control. Additionally, coal bed methane (CBM) will be separately regulated, under the Petroleum Law and foreign providers of goods and services to the mining industry will be obliged to have Mozambican partners.

“Second, the Mega-projects Law (Law no 15/2011 of 10 August) obliges mining investors (among others) to make available between 5% and 20% of the equity of the project company to the Mozambican public via the Mozambican stock exchange, on market terms. The provisions of the law are meant to take effect gradually over five years.

“Lastly, New laws in 2012 precluded the offset of exploration losses made on one license against income realized on another—even if the two licenses are held by the same legal person. And although, in 2012, large classes of expenditures in the prospecting phase were deemed no longer subject to VAT, proposals are on the table both to reverse that rule and to make accumulated VAT non-recoverable until the start of commercial sales, and then only as deductible costs. Tax policy is driving up the cost of exploration in Mozambique” (Ali and Miclea, 2013; p. 80).

Regarding the creation of minerals-based linkages (or promotion of local content), there is a sort of improvement in the regulatory framework in three stances as follows (Kaplan, 2013): Draft Mining Law 2013 requires a percentage of revenues generated by mining will be placed to local community development as channelled through the State budget (article 51). All companies wishing to provide services to foreign mining companies must associate with a Mozambican firm (article 53 (2)). Preference must be given to local firms when the quality of materials, time of delivery and quantity is available and the price, including taxes, does not exceed additional 10 percent than the imported good (article 53(4)). Draft Mining Tax Law provides five year customs and VAT tax exemption on imports of goods related to mining exploration and exploitation only when local goods are not available (article 60 (1-3)).

This is meant to act as an incentive to source goods locally first if available. Individual mining contracts must include (i) a local employment and staff training strategy; (ii) ore value-adding incentives; and (iii) a pro bono/corporate responsibility plan. Parallel to the aforementioned three points, the recent public-private partnerships (PPP) and Mega Projects laws are aimed at helping the public sector meet its financing needs and at ensuring that Mozambicans can capitalize on their mineral wealth, respectively. While such a capital-intensive industry as mining does perhaps call for greater resources than the financial sector in one of the world's poorest and fastest developing countries can offer, opportunities for collaboration across sectors do exist (Ali & Miclea, 2013).

The Ministry of mineral resources (MIREM) is responsible for issuing mining licenses through the National Directorate of Mines. However a “land license” known as DUAT (*Direito de Uso e Aproveitamento da Terra*) issued by the Ministry of Agriculture is also required, and must be requested within 3 years after the award of the mining license. This requires an institutional coordination between the two ministries which is absent as noted by various interviewees<sup>6</sup>. According to the Mining Law, article 43, number 2, mining is has priority over other economic activities (when the socio-economic benefits from mining are greater than those from other land uses – the problem is that there has never been a comparative analysis to determine whether the socio-economic benefits generated by mining were greater than those from agriculture, tourism or any other economic activity (Mosca & Selemane, 2012)). Mining priority is also extended to other rights holders, including communities who are considered to have their rights extinguished after the payment of a compensation for the piece of land they occupy. In practice, the start of mining operations is not dependent on the successful conclusion of the negotiation, deliberation and payment of this compensation (Coughlin et al. 2013).

The next section discusses the promotion of coal-based linkages in Mozambique. It looks at what exists, what is being done currently as well as what should be done given the potentialities and challenges on the ground.

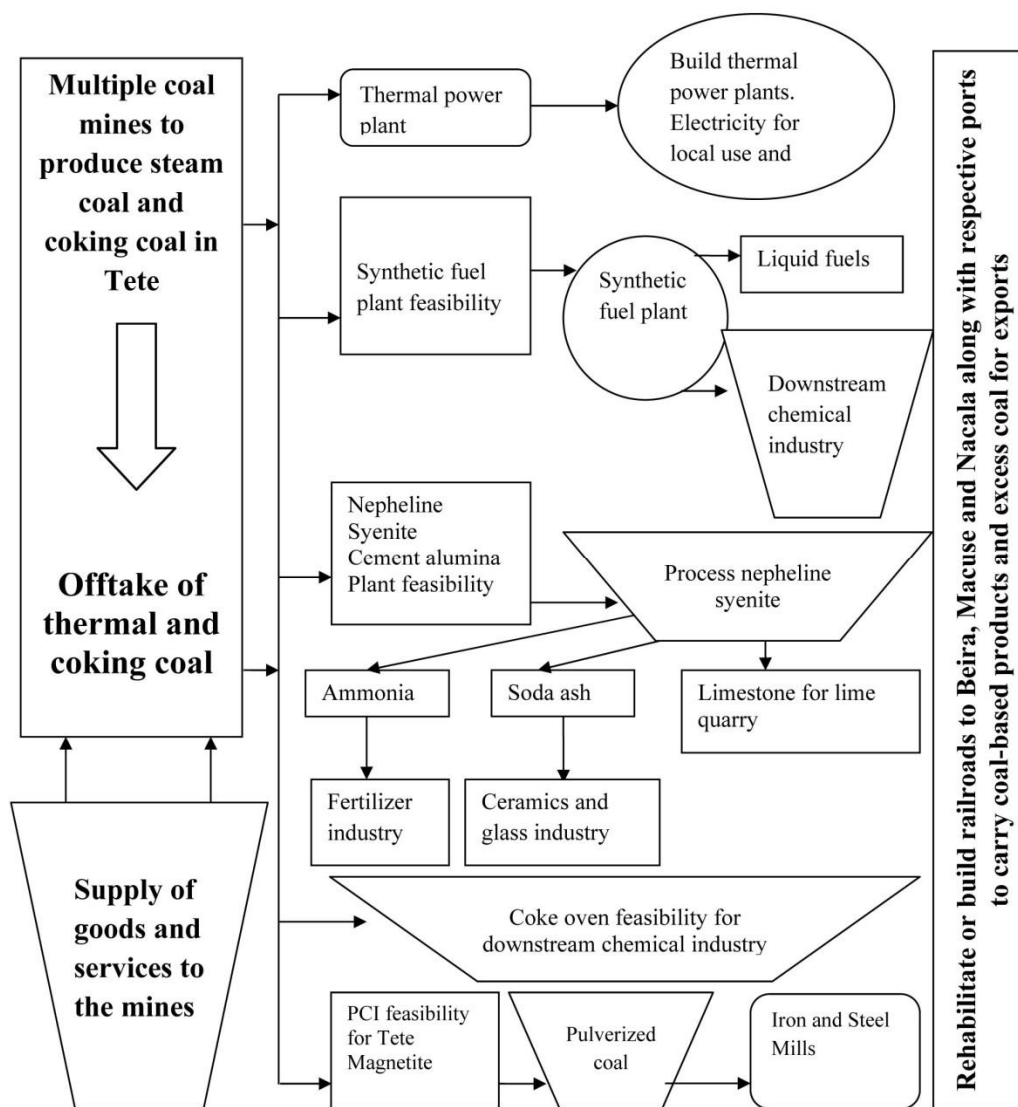
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<sup>6</sup> Personal interviews with Ministry of Mineral Resources, Vale and Rio Tinto representatives.

#### 4.4 Building coal-based linkages in Mozambique

Continuing the discussion from previous section (4.3) this section explores in particular detail the two research questions posed in this research. First, what is the government's strategy on coping with the mining boom, economic diversification or rents maximization? And second, how can Mozambique build the necessary coal-based linkages in order to foster socio-economic development and diversification. To begin with, figure 2 below summarises the key possible industrial and economic linkages around coal. They range from thermal power plants, synthetic fuel plants, fertiliser industry, iron and steel mills and so on.

**Figure 2:** Mozambique's (Tete) coal industry potential linkages



*Source:* Adapted from Callaghan (2011; p. 169) Mozambique Mineral Scan Report.



#### *4.4.1 Fiscal linkages: resource rents capture and deployment*

An important and necessary linkage in the extractive sector is the fiscal linkage understood as the state apparatus aimed at capturing mineral resources rents and investing them into non-extractive sectors which are vital for the national economy: education, health, infrastructure and broad well being long lasting programs. As noted by Biggs (2012), a potential benefit can accrue to the country via the increase in taxes generated by the windfall revenues of the booming resource sector, assuming the tax receipts are large and well spent. Unfortunately, the records of many resource-rich countries have not been terrific in this respect.

The above discussed revisions of the mining law were preceded by another revision done in 2007 which reduced significantly the tax exemptions given in late 1990s and early 2000s. As a result, the current fiscal regime – the one under revision - (Acts no. 11, 12 and 13 of 2007 and 2009 reforms of the Code of Fiscal Benefits) does not offer fiscal incentives as it was before.

However, the discussion on tax exemptions is still relevant even when we are talking about companies like Vale and Rio Tinto whose contracts are said to have less fiscal benefits than others. In fact their contracts were signed before the fiscal regime was changed. Therefore the only way forward to tax effectively those companies is for the government to renegotiate the contracts signed with them. This is something Mozambique's government has conceded after so much pressure from various circles: national civil society organisations (with CIP and IESE at the forefront), international community – IMF and World Bank as well internationally celebrated economists and usually aligned with neoliberal policies such as Jeffrey Sachs and Joseph Stiglitz (Selemane, 2012; Castel-Branco & Mandlate, 2013).

The 2012 Mega-projects and public-private partnerships (PPP) law has provisions for contracts renegotiation. The problem is that no renegotiation has taken place.

**CAPITAL GAINS TAX.** The introduction in 2012 of a capital gains tax (32 per cent) is a positive change toward rents capture and effective taxation in the extractive industry in Mozambique. The capital gain tax has emerged also in response to various critics from 2011 when Rio Tinto bought Riversdale's coal assets in Benga (Tete province) for US\$3.8 billions and Mozambique's state got nothing in taxes. The deal would have netted Mozambique \$450 million if capital gains taxes had been paid. Economist Carlos Castel-Branco estimated that this lost

money was equivalent to an entire year's budget support aid, or the equivalent to building 100 secondary schools (Selemane, 2013).

RESOURCE RENT TAX (RRT). David Ricardo, as cited in Jourdan (2013), proposed that Economic Rent is a surplus of individual investors' paper profit (which has its value in control over resources rather than directly in the resources themselves) over societal gain. As such, it does not represent any gain but rather an unearned transfer of wealth. Accordingly it is argued that there is a need for a resource rent tax (RRT) on mineral exploitation. In the case of Mozambique, if the Parliament/National Assembly (*Assembleia da República*) in 2014 votes in favour of government's Draft Mining Fiscal Law, Mozambique will then have a resource rent tax (RRT). This will be a positive change as it will enable the state to collect much more taxes than it does under the current fiscal regime. There are two remarkable changes proposed by the Draft Mining Tax Law. First, there is the potential for a significant increase to the royalty rate (both the declared percentage and the way that it is calculated): from current 3 per cent to somewhere between 5 and 10 per cent. Second, the law introduces an RRT designed to capture super-profits. The RRT is a mechanism designed to ensure that the government share increases when a project becomes highly profitable. An RRT is assessed where the company 'return on investment' (ROI) which is the ratio of the profit generated relative to the amount of money invested - exceeds a set percentage. The Draft Mining Law proposes the following: a direct tax on the net cash flow of a mining project where the rate of return before tax exceeds a yet to be determined percentage (somewhere between 12 and 18 per cent). Under these circumstances, the tax rate proposed is between 40 and 50 per cent (CIP, 2013).

It must be noted that there is a trade-off between high royalties which are easier to collect but add costs and sterilize resources and RRT which does not sterilize but are easier to duck through transfer pricing.

TRANSFER PRICING. This is a major problem faced by resource-based economies as multinational corporations usually do whatever they can to declare low profits in the host country and high profits offshore (tax havens) to duck taxes. Mozambique is not exception in this as shown by various studies (e. g.; Boas & Associates 2011; Ernst & Young 2012; CIP 2013b). Because of this collection problem, countries with a weak internal revenue service (IRS) often prefer royalties (easy to collect) which are highly distortionary and sterilise resources.

#### *4.4.2 Spatial linkages: infrastructure, local economic development and collateral impact*

INFRASTRUCTURE. Railroads and ports are the most important infrastructure necessary to realise the production and export of Mozambique's vast, unexploited coal reserves using the Indian Ocean. Tete coal hub has currently only one operational railway line connecting it to the port of Beira – the 580km Sena rail line. The capacity of this rebuilt rail line, however, is only 6 million tons per annum and Beira port's old coal terminal can handle only 1.2 million tons at present.

Table 2 in section 4.2 above shows that by the end of 2015 the major coal companies hope to be producing 51.48 million tonnes of coking coal, all exported, and 39.74 million tonnes of thermal coal, some of which will be exported. And this does not include the more than 100 other licenses in Tete<sup>7</sup>, plus ongoing exploration in the northern Niassa province. Yet by the end of 2015 the Sena line is likely to still be the only railway to a port (Biggs, 2012; Selemene, 2013).

Figure 3 below shows the railway-port infrastructure plans aimed at making coal exploitation and export feasible. As the figure shows each railway is to be built by a mining company operating in Tete. This poses a problem: it is not clear how or under which terms and conditions will other companies (the ones that are not involved in the railways construction/rehabilitation) use those indispensable infrastructures.

Another problematic aspect is on the duplication of lines in the same route like Moatize-Nacala where plans show that there will be two different railways: one (Moatize-Nacala via Malawi) currently being built by Vale<sup>8</sup> and another (Moatize-Nacala via Mozambique) to be built by ENRC. The rail line Moatize-Macuse will be built by a consortium led by a Thai company (Italian Thai Development Company Limited with 60 per cent of shares). The remaining 40 per cent are owned by state owned ports and railways company CFM and CODIZA with 20 per cent each (Mapote, 2013).

The Moatize-Macuse line emerged as an alternative to the shipping option via Zambezi River previously presented by Riversdale which is now Rio Tinto after it was bought in 2011 as

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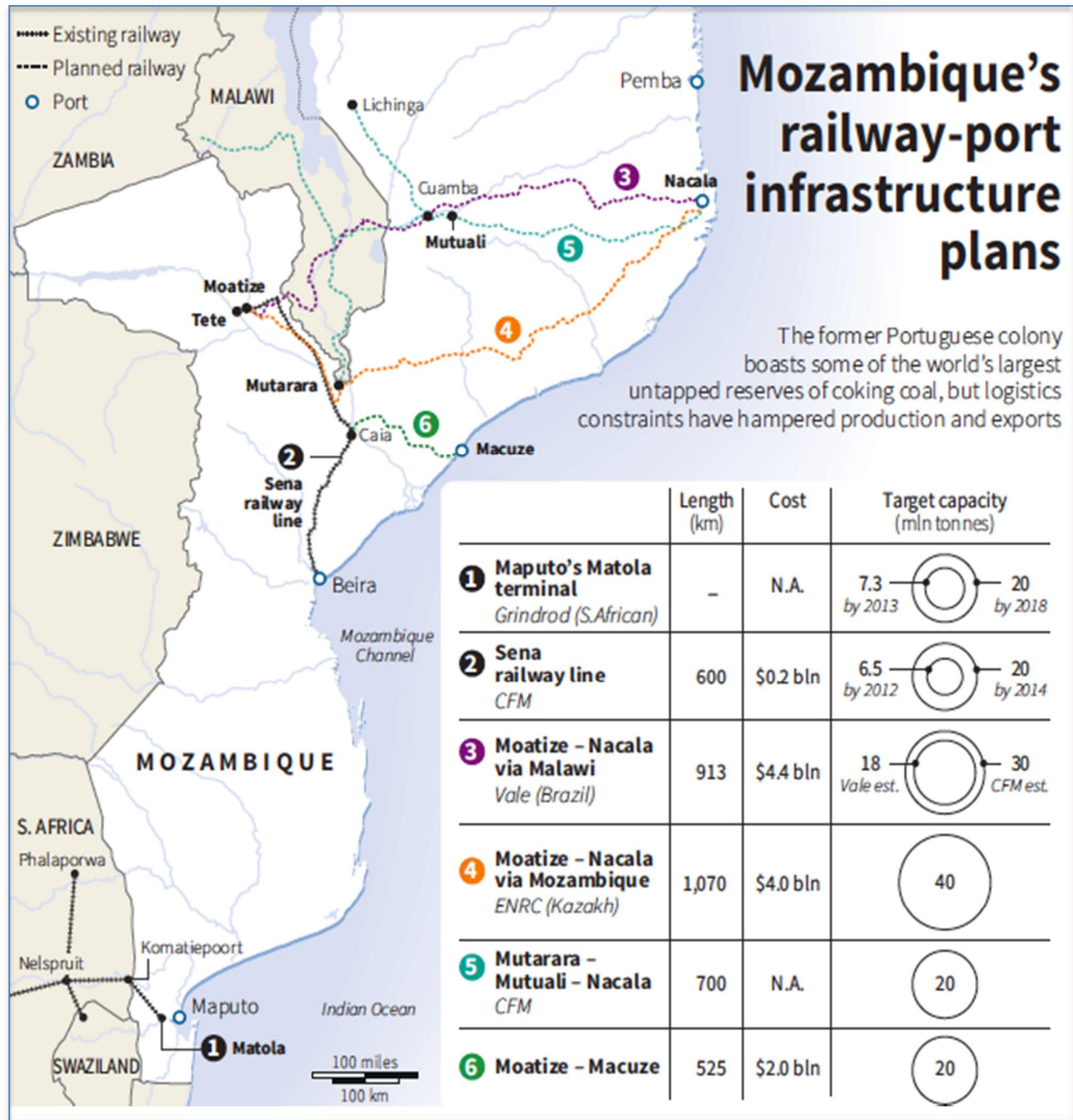
<sup>7</sup> See appendix 3

<sup>8</sup> Vale claims it spent about US\$ 6 billion until December 2013 in this project which created. The claim mentions five thousand jobs. We must note that these are, of course, temporary jobs (Interview with Vale's representative).

discussed in the previous section above. The Mozambican government tried to discourage the project and finally rejected it on environmental grounds (Selemane, 2013).

The problematic existence of various railways funded by mining companies (without clarity on the criteria under which other users will have access to them) that are at the same competitors should be dealt with by imposing a third party access at non-discriminatory user-tariffs in order to catalyse the higher development impact resource infrastructure ‘hitch-hikers’ (such as agriculture), which in general have a much higher socio-economic propulsive impact, as suggested by Jourdan (2013). This would help in preventing Mozambique’s economy from becoming an enclave as many other natural resource-based economies in the world. It would also avoid the reinforcement (or the obstruction of economic diversification) driven by what Fine & Rustomjee (1996) call the “minerals-energy complex (MEC)” by using the coal boom to foster dynamic non-extractive sectors in the economy.

**Figure 3:** Mozambique’s railway-port infrastructure plans for coal exports



Source: Reuters (2013) as cited in Selemane (2013)

LOCAL ECONOMIC DEVELOPMENT AND COLLATERAL IMPACT. The collateral benefits for people and other non-mining companies stimulated directly and indirectly by the investments and production of the extractive industry arise due to two factors: first, derived demand from the income multiplier effects of their local expenditures; and second, the increased and new supply of a wide array of services and productive capacity created to serve the extractive industry, their contractors, and the numerous new industries, service industries, and commercial ventures. In the case of Tete, coal-based local economic development and collateral impact is very limited to few sectors and overall is limited to the sectors that supply goods and services to the miners: housing, banking, transport and communications (Mosca & Selemene, 2011; 2012) sectors that can not be considered as “local” as they are foreign, mostly South Africans as shown in section 4.4.4 below. In fact, the coal boom in Tete has fostered big business such as the banking, transports and communications sectors. The housing sector’s picture in Tete looks more like a ‘resource curse’ rather than a healthy local development: rents are extremely high, the services offered in hotels and guest houses are poorer than those offered in similar establishments in other cities of the country like Beira and Maputo.

Mining projects are generally capital intensive. They create very few jobs. As a comparison, manufacturing produces nearly 10 times the number of positions (jobs?) than the extractive industry. According to the United Nations Economic Commission for Africa (UNECA cited in Kaplan 2013), Africa manufacturing has shown to produce nearly 17.5 times more jobs than mining. The ratio of indirect jobs to direct jobs in the extractive industry favours indirect job creation in a ratio around 3:1. For instance, Vale’s \$1.7bn investment so far has resulted in fewer than 900 long-term jobs. Using these data points, with full coal capacity the mines will only create 7,000 direct jobs and total direct and indirect job growth will be in the tens of thousands (labour market growing by estimated 300,000 annually). Given the fact that there is an estimated workforce size is currently about 10.2 million in a country of 23.4 million this would account for only around 0.01 per cent of the workforce (Kaplan, 2013).

In part, Mozambique government's responses to boost coal-based local economic development consists of a formalization of corporate social responsibility – CSR - there is a draft Policy on CSR and promotion of the so-called “local content” policies. These responses are both problematic. CSR is generally used by extractive corporations as a green washing tool. Theoretical and empirical evidence inside and outside Mozambique (Selemane, 2010; Lydall, 2010; Buur et al. 2013) show that CSR programmes do not contribute to industrialization and development as they are always some sort of a gift that benefits more the donor than the donated. Local content-based solutions in the way they are being conceived in Mozambique are equally questionable<sup>9</sup>. As pointed out by Mosca and Selemane (2011; 2012) in their studies around the impacts of coal mega-projects on local development in Tete province, there are no policy incentives (credit facility, tax exemptions or others) which could stimulate the emergence and development of local entrepreneurs as it happened in Norway and Chile<sup>10</sup>. As a result, they say, local SMEs cannot provide goods and services to the mining multinationals in the necessary quantity, quality and regularity. Hence, government's decision of obliging extractive multinationals operating in Mozambique to first announce their needs of goods and services in national newspapers as a way of guaranteeing the purchase of locally produced goods and services (MIREM 2010; GoM 2013) cannot be seen as a complete solution to foster local economic development.

There are no local content (local value added) targets in the mining licenses. Another problematic aspect with the local content-based solution is that linkages are often with local representatives of foreign suppliers. There is evidence that multinational corporations are increasingly sourcing activities and functions to suppliers and service providers in the African host countries. However, numerous studies suggest that these ‘local’ partners are typically

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<sup>9</sup> In a September 2013 policy study on local content commissioned by USAID and entitled “Policy options for strengthening local content in Mozambique”, Zachary Kaplan observes that: Local content, narrowly defined as the percentage of a product whose added value originates domestically (within the country) or more apt in the case of Mozambique as the purchasing of goods or services from a local supplier, remains to be clearly defined and its policy shaped in Mozambique (Kaplan, 2013).

<sup>10</sup> In an Organization for Economic Cooperation and Development (OECD) Development Centre policy brief, Gøril Havro and Javier Santiso cited by Jourdan (2013) point out that both Norway and Chile experienced: “...direct efforts to diversify their economy and to support industries associated with the natural-resource sector – such as engineering and supply – as well as non-resource sectors. Norwegian policies in the 1970s were markedly interventionist in this regard . . . The legal framework emphasised local content until 1990, to develop the infant petroleum supply industry. Norway also pushed for state participation in the same areas, in spite of reluctance on the part of many of the international companies.”

foreign-controlled firms (Buur et al. 2013). This is a typical case of Mozambique where South African companies are opening branches in Tete and operating as “local” as we shall see in section 4.4.4 below. Local content needs to be based on the local value added contained in the goods/services supplied.

#### *4.4.3 Forward linkages: value addition*

As shown in figure 2, section 4.4 above, coal is an important feedstock into a vast range of downstream sectors such as manufacturing, metallurgy, agriculture chemicals (fertilisers, explosives) and energy (ceramics, lime, , power generation and so on). In other words, coal has immense potential to foster economic diversification and industrialization. However, the realization of such potential must not be taken for granted as it all depends on the policies put in place.

As observed by Jourdan (2013), the resource contracts or licences need to provide incentives or disincentives for mineral resources downstream beneficiation. However, the widespread practice of monopoly pricing of beneficiated minerals/metals could negate this advantage for the manufacturing industry (especially steels and polymers) if there is only one or two players. All of the coal mines are currently being developed with a sole objective of exporting all of the coking coal (usually more expensive in the international market) and burning locally the low grade coal (steam or thermal coal which is usually cheaper than coking coal).

As noted by Selemene (2013), the mining companies plan to use much of the thermal coal, at least the lower grades, in power stations near the mines. Initially Vale proposed a 2600 megawatt (MW) power station, Rio Tinto a 2000 MW station. Both hope to sell to the South African electricity company Eskom, which so far has shown no interest in buying more electricity from Mozambique. Construction will not start without an agreed customer, and it takes three years to build a power station. So electricity from coal cannot start before 2017.

Both in theory and policy, only recently the government approved a strategy for mineral resources on December 17, 2013 (*Política e Estratégia de Recursos Minerais*) which defines beneficiation as a major objective (GoM 2013). The question here is whether there will be enough courage to persuade the already existing coal mining projects to adhere to the terms and



conditions presented in the abovementioned strategy which is laconic itself and cannot over-rule the already signed contracts which are the majority.

The strategy vaguely speaks of “encouraging beneficiation of minerals that can be processed locally.” There is neither definition of what that means in real terms nor under which mechanisms the government will enforce such “encouragement”, such as value-addition targets in the mining licenses. Following the line of thought advanced by various industrial and development specialists (e.g.; Hirschman, 1958; 1981; Castel-Branco; 2011; Jourdan, 1990; 2012; 2013), we can say that Mozambique’s huge coal potential is a great opportunity for industrialization and building long-term socio-economic development through active industrial policy as opposed to the current scenario of merely exporting raw material.

#### *4.4.4 Backward linkages: consumables, capital goods and services*

According to Jourdan (2013), of all the mineral resources economic linkages opportunities, the backward linkages most probably represent the most potential, but they can also be difficult to realise. The mineral inputs (purchases) sector is dominated by capital goods (vehicles, rolling stock, plant, machinery, etc.), services (technological, engineering, analytical, financial, labour, etc.) and consumables (explosives, fuels, wear parts & spares, grinding media, reagents, etc.).

Mozambique is currently facing problems to realise the immense potential backward linkages available in the coal sector. For this reason most of the companies supplying goods and services to the miners come from outside Mozambique. Table 4 below gives information companies supplying goods and services to Vale and Rio Tinto as well as other mining houses established in Mozambique.

**Table 4:** Companies supplying goods and services to Vale and Rio Tinto in Mozambique

	Company	Country of origin	Business sector
1	Água Terra	Mozambique	Drilling Services
2	Atlas Copco	Sweden	Industrial (mining) Tooling and Equipment
3	Aurecon	Australia/South Africa	Engineering, Management, Design and Planning
4	Bell Equipment	South Africa	Parts and Machinery Provider
5	BMG (Bearing Man Group)	South Africa	Parts Provider (engineering components)
6	DRA Mineral Projects	South Africa	Mining Plants Design
7	Dynapac	German	Mining Equipment (parts and services)
8	Eqstra	South Africa	Mining Services and Equipment
9	Gondwana Empreendimentos e Consultorias Lda.	Mozambique	Mining Consulting
10	John Deere	United States of America	Industrial machinery
11	Komatsu	Japan	Mining and Compact Construction Equipment
12	Minopex	South Africa	Operation and Maintenance of Mineral Processing Facilities
13	SRK Consulting	Canada	Mining Consulting
14	Stefanutti Stocks Mining Services	South Africa	Mining Engineering Services
15	Tayanna Moçambique	Mozambique	Excavation and Coal Extraction Works
16	WHBO	South Africa	Construction and Civil Engineering

*Source:* Own construction based on personal interviews; Ali & Miclea (2013) and companies' websites

#### 4.4.5 Knowledge linkages: human resources development (HRD) and research and development (R&D)

Last but not least is the fifth type of linkages: knowledge linkages which comprise human resources development (HRD) and research and development, in other words, skills and technology development. As pointed out by Jourdan (2013), establishing the minerals knowledge linkages is critical to developing the back/forward linkages. Skills and technology are underdeveloped in Mozambique. The country has currently 120 geologists which is less than 30 years ago when former Soviet Union (ex-USSR) and German Democratic Republic (GDR) sent geologists to the country<sup>11</sup>.

<sup>11</sup> Personal interview with Ministry of Mineral Resources.

Mining companies like Vale and Rio Tinto had to bring into the country skilled personnel from outside Mozambique. Other economic sectors like banking, economic and law consulting, teaching at tertiary institutions, etc. have been witnessing the migration of the most qualified people into the mining sector, also because salaries and other benefits are comparably high (typical Dutch disease symptom). Government departments at central and provincial levels have also lost personnel for the mining companies<sup>12</sup>.

In response to the above described situation, in 2010 Mozambique government through the ministry of mineral resources (MIREM 2010) approved an HRD strategy (*Estratégia de Formação de Recursos Humanos para o Sector de Recursos Minerais*) which is poor and questionable in two stances. First, it is an eleven pages document with no articulated thought for long-term human resources development (being a ‘strategy’ it should be so); second, it was written having in mind capacity building of government personnel dependent upon the good will of mining companies<sup>13</sup> as noted by Selemene (2013).

Vale and Rio Tinto have their own training centres in Tete where each of them trains personnel for the mines. For instance, Rio Tinto makes the following claim: “Our training centre in Tete has trained more than 2450 professionals in general civil construction courses. We have trained and now employ more than 60 engineering professionals. 240 people have been trained and now employed by us as machine and processing operators. Our higher education partnerships have enabled us to train and award scholarships to more than 100 technical professionals including geologists and mining engineers” (Rio Tinto 2013). Vale’s 2013 report says the company has trained about 200 people in different areas at their training centre in Moatize, Tete province (Vale 2013). A number of teaching institutions have introduced new courses in order to respond to the skilled labour demand imposed by mining companies in Mozambique.

Table 5 below illustrates the names of teaching institutions and the courses they started in response to the mining companies' skilled labour demand.

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<sup>12</sup> Personal interview with Ministries of Labour and Education.

<sup>13</sup> Various mining companies are funding bursaries for Mozambican students to go and study in those companies countries of origin. Bursaries are a good initiative everywhere particularly in a developing country lacking skilled labour like Mozambique. However, the conditionalities driving its management might be problematic when it is the giver who decides what and where the beneficiary should be trained.

**Table 5:** Teaching institutions and the new courses started to respond to mining companies' skilled labour demand

TEACHING INSTITUTION	COURSE NAME	PLACE AND YEAR OF START
Catholic University of Mozambique (UCM)	Mineralogy with specialisation in i) mineral processing engineering ii) geology engineering iii) mining engineering	Tete, 2013
Eduardo Mondlane University (UEM)	-Geological mapping and research -Applied geology	Maputo, 2014
Higher Institute of Technology and Management ( <i>Instituto Superior de Tecnologias e Gestão, ISTE</i> G)	Mining geology	Maputo, 2013
Higher Institute of Science and Technology of Mozambique ( <i>Instituto Superior de Ciências e Tecnologia de Moçambique, ISCTEM</i> )	- Oil and gas management - Oil and gas law	Maputo, 2013
Tete Higher Polytechnic Institute ( <i>Instituto Superior Politecnico de Tete</i> )	-Geology engineering -Mining engineering	Tete, 2013

*Source:* Own construction based on universities' websites and interview with Ministries of Mineral Resources (MIREM)

As the lack of skilled personnel is a serious problem in Mozambique, the introduction of new courses in different teaching institutions in addition to the already existing geology course offered by Eduardo Mondlane University must be seen as a good initiative. However there is a need for a more focused training strategy that should start from high school levels with particular emphasis on maths and sciences to feed the universities. In addition a HRD minimum spend of 5 per cent of pay-roll could be introduced, similar to the one in the South African "Mining Charter". This would aim at ensuring that the mineral knowledge linkages are made (STEM skills) and that skilling does not capacitate foreign institutions, but builds local human resources development (STEM) institutions - related to Hartwicks rule - build knowledge, but by putting it in as a license condition it short-circuits the fiscus.

Closely linked to the issue of knowledge linkages (particularly investments in research and development) is the question of ownership. Put differently, the relationship between foreign direct investment and domestic capital (ists).

Various discussions tend to suggest that mining multinational corporations generally prefer imported labour to domestic. However, a vast body of literature finds that any company would by any means prefer domestic labour (where it exists) to foreign as the former is usually cheaper than the latter (Mosca & Selemane, 2011; Biggs, 2012; Ali & Miclea, 2013).

A particular way of dealing with the ownership issue is through the imposition of integration of some national participation (shareholding) in mining projects. This is used not only as a means of national capitalists formation but also as a job creator although with very limited impact on the broad available working force in the country.

## **Chapter 5: Concluding remarks**

This research aimed at understanding and explaining the prospects and challenges posed by the coal boom to Mozambique's economy, hence how can the country build coal-based linkages to foster socio-economic development and economic diversification. The conclusions are presented in the paragraphs below.

The literature on the natural resources economics (oil, gas and minerals) consists of three separate sub-categories: first, on the relationship between natural resources abundance and economic performance; second, on the relationship between natural resources abundance and civil wars; and third, on the relationship between natural resources abundance and political regimes (Rosser 2006; Di John 2011; Olanya 2012). However, given its scope, this research has not dealt with all of the aforementioned sub-categories of literature. It is limited to the literature looking at the relationship between natural resources abundance and economic performance, especially the development outcomes seen as a result of social, political and institutional interactions.

More specifically, this research has looked at four bodies of literature. First and foremost, a look at publications that establish Mozambique's coal endowment (quantities and quality of coal reserves) as well as its weight in the economy: the official dataset published by the government (Ministry of Mineral Resources – MIREM and Ministry of Finance) and companies operating in the sector; e. g. (MIREM 2011; Ernst & Young 2012; 2013; Rosenfeld 2012).

Secondly, a discussion about the dominant mainstream theories of the relationship between natural resource abundance and economic performance (e.g.; Sachs and Warner 1995; 2001; Collier 1999; Karl 1997; Sala-i-Martin and Subramanian 2003). For these authors, the relationship between natural resource wealth and economic performance consists of what is termed as “the paradox of plenty” or the “natural resource curse.”

Thirdly, to make the point, the above mentioned mainstream theories have been interrogated using a political economy approach based on heterodox perspectives such as the ones advanced by Ben Fine & Zavaree Rustomjee (1996); Christopher Cramer (1999); Jonathan Di John (2006; 2011) Carlos Castel-Branco (2003; 2010; 2012; 2013); Paul Jourdan (2012; 2013). Fourthly and

finally, building on the heterodox economics body of literature this research has paid particular attention to the analysis of how to build coal-based economic linkages in Mozambique.

Drawing from the work of Hirschman (1981); Jourdan (2012); Castel-Branco (2010); UNECA (2013); Jourdan et al. (2012) and Jourdan (2013), the analysis has tackled on the different possible coal-based linkages as follows: fiscal linkages (resource rent capture and deployment/reinvestment); spatial linkages (sidestream - collateral use of mineral infrastructure and local economic development); forward Linkages (downstream - mineral beneficiation) backward linkages (upstream- mining supplier industries); knowledge Linkages (sidestream - mineral human resources development); and research and development; Ongoing legal and institutional reforms are not enough to foster coal-based development as they continue to prioritise neoliberal policies, market oriented mineral regimes (free mining) and “international best practices” approach instead of “good fit” approach.

As argued by Buur et al. (2013), if linkage policies are to succeed, they must reflect a ‘good fit’ with local contexts, institutions and politics, and not only the ‘best practices’ that donors typically advocate. Indeed, the authors remark that notions of ‘good fit’ often drive decisions by local policy-makers and implementers. Best practice thinking, they say, has inspired many recent policy recommendations on linkages and generally dominates the donor-oriented literature on aid and development<sup>14</sup>.

‘Best practice’ notions, the authors contend, have weak theoretical and empirical foundations<sup>15</sup>, which the World Bank (2000) cited in Buur et al. (2013) clearly acknowledged more than a decade ago.

**MINERAL REGIME.** To paraphrase Jourdan (2013), Mozambique’s “free mining” regime needs to be fundamentally overhauled to both encourage the discovery of new mineral deposits and to maximise the developmental impact of known mineral assets through public tender against developmental outcomes.

**FISCAL LINKAGES.** The proposal to introduce a resource rent tax (RRT) is a good initiative that can allow the capture of minerals resource rents to be reinvested into building a broad socio-

<sup>14</sup> For example, Morris et al. 201; Andrews 2013; UNECA 2013 all cited in Buur et al. 2013.

<sup>15</sup> Høyland et al. 2009; Sanin 2009; Khan 2012; Page 2013, as cited in Buur et al. 2013

economic development, particularly STEM<sup>16</sup> skills. However, such will not happen automatically. It requires an interventional state to build a national knowledgeable class capable to cope with the mining boom. Hence, KNOWLEDGE LINKAGES are crucial. They should be developed in partnership with mining houses, but government must not depend entirely on companies' good will as is the current situation, but rather build a minimum HRD and R&D domestic spend into the mining licenses/contracts.

**BACKWARD LINKAGES.** As discussed in sub-section 4.4.4 above, Mozambique's coal sector offers a wide range of opportunities for input sectors (capital goods, consumables and services) to be developed. Most of the opportunities are currently being taken by foreign multinationals as shown in table 4 above because of the country's government failure to promote the development of a national strong body of SMEs. Indeed, empirical evidence as well as development economic history tell us that no developed economy did develop without active and interventional state policies (Chang, 1996; 2002; 2003; Lin & Chang 2009). Local content (local value added) milestones could be built into the mining licenses/contracts.

**FORWARD LINKAGES.** Current Mozambique's coal exploitation set up is oriented to massive exports of coal as a mere raw material. This will heavily jeopardise the country's economic development as it will impede job creation in coal beneficiation industries which could generate appropriate intermediate products: iron/steel and polymers for manufacturing, fertiliser for agriculture, fossil fuel for power generation that could improve the country's electricity supply for broad industrialisation. Beneficiation could be encouraged by having local value addition targets in the mining license/contracts and/or by the selective implementation of an export tax on crude minerals (steam coal and coking coal) where there is an economic case for a beneficiation plant.

**SPATIAL LINKAGES.** One of the biggest bottlenecks for Mozambique's coal development is the lack of infrastructure, particularly railways and ports. The solutions advanced to overcome the problem (building/rehabilitating railways from mining sites to ports) will benefit coal industry only and constrain economic diversification. The approach of allowing coal mining companies to build/rehabilitate different railways and ports from same mines to same ports (e.g. two lines from Moatize to Nacala) is problematic because of lack of clarity on the terms and

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<sup>16</sup> STEM: science, technology, engineering and mathematics



conditions under which companies that are not investing in such infrastructure will have access to them. All rail/port concessions need to be dependent upon open access at non-discriminatory tariffs as well as a minimum excess design capacity to cater for third party users.

When addressing spatial linkages based upon railroads, government should deal with the trade-off between longer routes (e. g; Moatize-Nacala) with higher collateral impact as they can be used by other economic sector but adding to costs and lower RRT and shortest lowest cost routes (e. g; Nacala-Beira or Nacala-Macuze) giving higher RRT.

In conclusion, under the combination of its current fiscal and mineral regime with infrastructure problems plus the inexistence a of a linkage policy, Mozambique will get negligible benefit from the exploitation of its finite coal resources. A major overhaul of these regimes is needed for it to make use of its coal to catalyse wider growth and development, before it is left with little other than large holes in the ground. Such a comprehensive overall should focus on instruments to optimise the seminal coal mining linkages (fiscal, backward, forward, knowledge and spatial).

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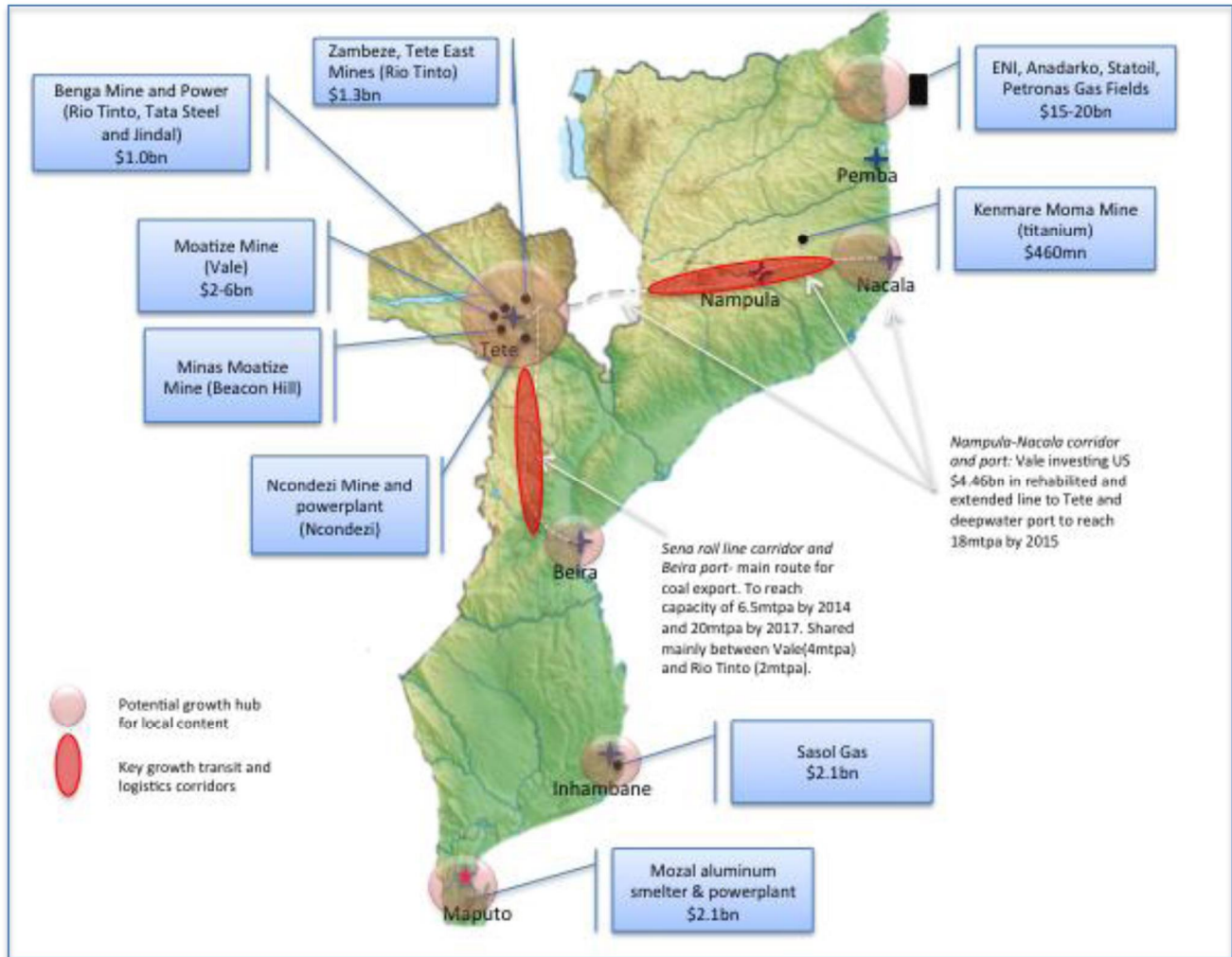
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## Appendices

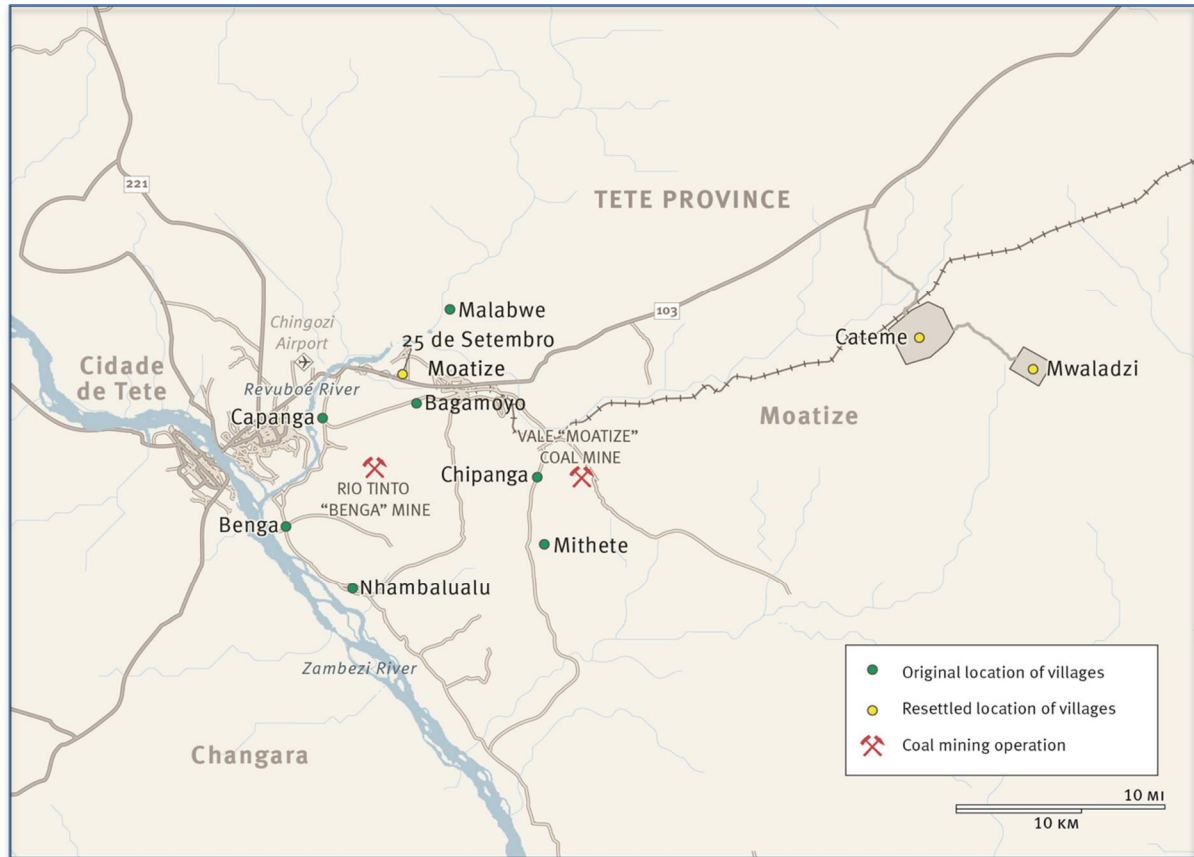
### Appendix 1: Investments in Mozambique's Extractive Industries by Company and by Project



**Source:** Kaplan, Z. (2013) POLICY OPTIONS FOR STRENGTHENING LOCAL CONTENT IN MOZAMBIQUE - DRAFT REPORT FOR REVIEW. USAID/SPEED. Maputo

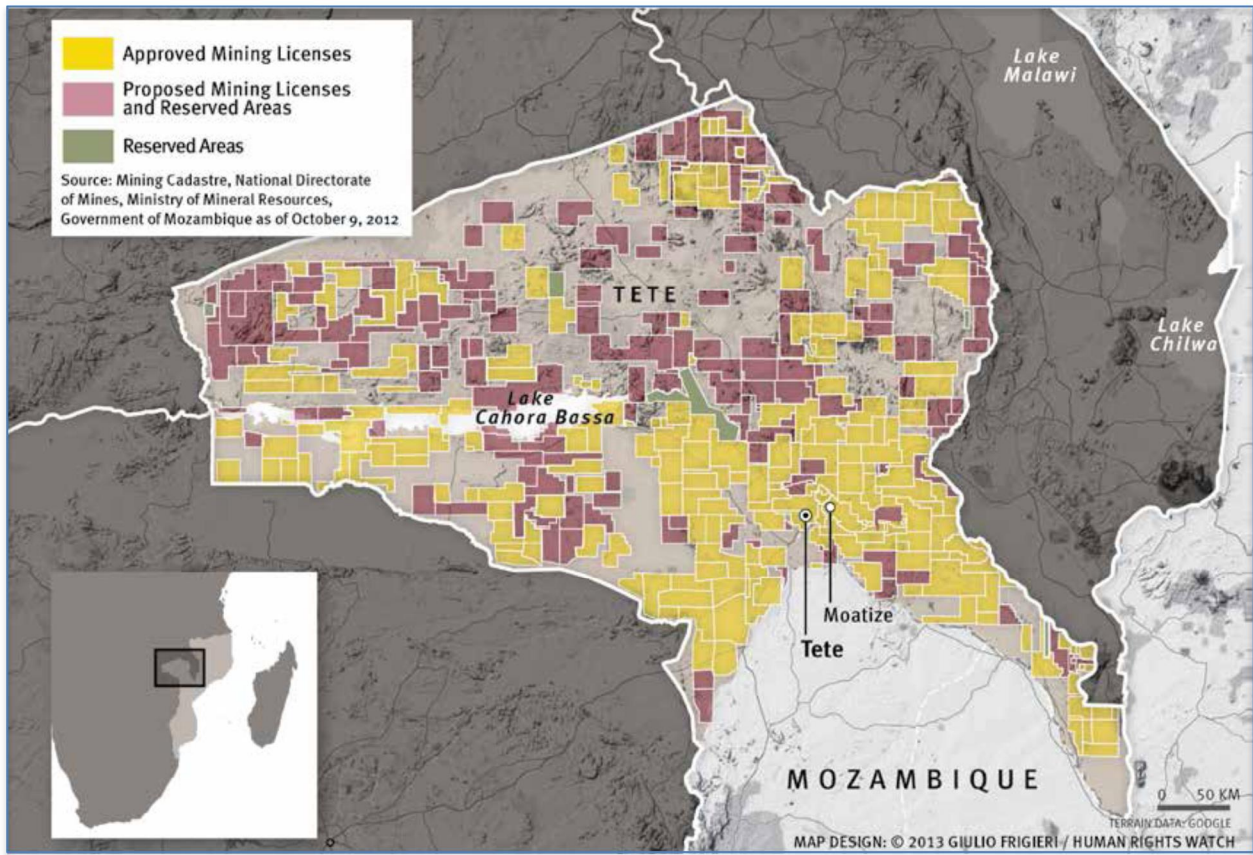
## Appendix 2: Sites of original and settled villages in Tete province

### SITES OF ORIGINAL AND RESETTLED VILLAGES IN TETE PROVINCE



**Source:** Human Rights Watch (2013) “What is a House without Food?” Mozambique’s Coal Mining Boom and Resettlements

### Appendix 3: Mining licenses in Tete province



**Source:** Human Rights Watch (2013) “What is a House without Food?” Mozambique’s Coal Mining Boom and Resettlements



## Appendix 4: Guiding questions used in fieldwork (interviews with different actors)

### For MIREM

What are the currently known/proven coal resources (quantity and quality) in the country? And in Tete?

What is the state exploration/exploitation strategy?

What is the government's strategy on coal-based downstream linkages (value addition) and upstream (local content)?

How is the government enforcing such strategy in practice?

What are the governments' thoughts on fiscal linkages such as resource rent tax (RRT)?

Does the government impose any type of linkages creation as conditionality for granting mining concession?

### For the Ministry of Finance

There have been improvements in the fiscal laws with the introduction of the capital gains tax (32%). Is that enough improvement or there is need for more?

Is there any plan to renegotiate the contracts with mega-projects?

### For the Ministry of Transports & Communications

What are the government's plans to sort out the infrastructure problem for coal exports?

The new ports and railroads are being built by the companies.

How the usage for the others is going to be? Is there any plan for non-discriminatory rate?

### For the companies (Vale & Rio Tinto)

How much proven resources of both thermal and coking coal does the company have in Tete?

What is the exploitation strategy?

Does the company have any plan to promote the creation of upstream and downstream value addition in Tete or Mozambique?

Are there any other linkages promoted by the company? (e. g; collateral use of mineral infrastructure; mining supplier industries; sidestream human resources development; etc.);

How is the company planning to overcome the lack of sufficient railroad infrastructure?

What is the companies' view on the ongoing mineral regime reforms; debates around renegotiation and publication of contracts; possible creation of sovereign wealth fund?