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## **Institutions and strategy in dynamic markets: The case of Vale in Mozambique**

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## ABSTRACT

Vale, a Brazilian-based, multinational mining company is used as a case study to investigate the impact of institutions on company strategy in dynamic markets. The research focuses on Vale's exploration and development of the coal deposits of Mozambique, a country in which the institutional environment was decimated by war between 1964 and 1992.

The objective of the research is to investigate how using the theory of institutions, as articulated in international business and corporate strategy literature, could be useful in understanding how firms make strategic choices and seek to gain competitive advantage in dynamic markets. In addition, the research provides a case study based in an African market, which will add to the material available for teaching general management principles in dynamic markets.

The research demonstrates the importance of the link between Brazil's foreign policy between 2000 and 2010, and Vale's expansion strategies in Africa at that time. It highlights the institutional deficiencies in Mozambique at the time of Vale's entrance, such as the limited rail infrastructure and weakly developed mineral rights legislation; and shows how Vale has been able to turn these deficiencies into competitive advantage, and has developed a dominant position in an internationally significant coalfield.

In this way, the research supports the "institutional-view" of strategy, as articulated by Peng, Wang and Jiang (2008) and positions the role of institutions as being at least as important as industry and company resource factors in determining company strategy in dynamic markets.

The challenge presented to readers of the case is to describe the institutional landscape in Mozambique and assess Vale's response to it, using Khanna, Palepu and Sinha's (2005) framework; to assess the merit of Peng et al.'s (2008) "strategy-tripod" when considering dynamic market strategy; and to consider the economic, political and social context facing Vale in trying to maintain and grow their competitive position.

## KEYWORDS

Dynamic markets, emerging markets, theory of institutions, company strategy, infrastructure, Mozambique, Vale.

## DECLARATION

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Stewart Robert Quentin Nupen

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## CONTENTS

ABSTRACT	II
KEYWORDS	II
DECLARATION	III
ACKNOWLEDGEMENTS	III
<b>1 INTRODUCTION</b>	<b>1</b>
1.1 Problem definition	1
1.2 Research purpose	1
1.3 Report format	2
1.4 Case study	2
1.5 Teaching note	3
1.6 Methodology	4
1.7 References	5
<b>2 CASE STUDY</b>	<b>6</b>
Introduction	6
History	7
Coking coal in Mozambique	11
Mozambique's rail infrastructure	13
Working in Tete	15
Economic climate change	16
Conclusion	18
Exhibits	19
References	26
<b>3 TEACHING NOTE</b>	<b>35</b>
Case synopsis	35
Keywords	36
Intended audience	36
Teaching objectives	36
Assignment questions	37
Analysis	37
References	47

<b>4</b>	<b>RESEARCH METHODOLOGY</b>	<b>49</b>
4.1	Introduction	49
4.2	Research design	49
4.3	Scope	50
4.4	Research questions	50
4.5	Universe / Population	51
4.6	Unit of analysis	51
4.7	Data collection	52
4.8	Research instrument	54
4.9	Consistency matrix	56
4.10	Analytical approach	57
4.11	Research limitations	58
4.12	References	59
4.13	Appendix A	61
4.14	Appendix B	63

# 1 INTRODUCTION

## 1.1 Problem definition

International business literature identifies an institution-based view of the firm (Peng, Wang and Jiang, 2008), in addition to the traditional industry-based view as described by Porter (1981) and the resource-based view as described by Barney (1991).

Hoskisson, Eden, Lau and Wright (2000) argue that institutional theory is the pre-eminent theory in explaining the strategies employed by organisations in emerging economies and contend that the reason for this is that the influence of government and society on an organisation is more important in emerging economies than in developed economies.

The research problem is to determine whether companies which are successful in dynamic markets have particular ways of dealing with the institutions, or lack thereof, in those countries, and if an institution-based view of strategy can help explain the strategies employed by these companies. The research identifies the extent to which strategic choices available to businesses are determined by the institutional landscape of the host country and identifies what can be learnt from companies which are successful in complex social, political and economic landscapes with the associated complex institutional frameworks.

The term “emerging economies” has become somewhat dated, and the term “dynamic markets”, introduced by White (2012, p. 11), is preferred as it is descriptive of markets which “exhibit exciting growth prospects, have undergone significant political, social and cultural change and show encouraging signs of innovation along with policy and institutional developments”. Nonetheless, the theoretical paradigms explored herein utilise the term emerging economies, and hence the two terms are used interchangeably in this research.

## 1.2 Research purpose

The topic of the research is “Institutions and strategy in dynamic markets: the case of Vale in Mozambique”. Vale is a Brazilian-based multinational mining company which is present in 38 countries across the world. It has mining operations in 17 of these countries and development projects in a further six (Vale, 2012).

The research utilises the case study research methodology to understand the interaction between companies and institutions in dynamic markets. The Case Study focuses on a single organisation which has expanded into multiple dynamic markets in recent times.

It is important to understand this because although the case study methodology can typically be limited in its application outside the case subject, if the institutional framework is much more than background to the competitive landscape, then instructive lessons can be generalised to any company expanding in emerging markets through the case.

While the research utilises the case study research methodology, the story of Vale is written up in the form of a teaching case study. As such, the research has a dual-purpose. The first being to address the research problem as identified in the problem definition. The second is to gather information and write up the story of Vale's expansion such that it can be used to illustrate a real-life situation (Mitchell, 2005).

### **1.3 Report format**

This research report is written up in the form of a case study specifically for teaching purposes. This represents a different approach to the conventional research report. The selection of case study research methodology together with a teaching case study write-up format has been selected for a number of reasons:

- It provides an opportunity to undertake in-depth research, of a qualitative nature;
- The topic, and the company selected for study, lend themselves to being presented as a case study; and
- It contributes to the material available for teaching general management and strategy by providing a case which has an African-focus, with empirical rigour, and which has general application.

### **1.4 Case study**

Chapter 2 of this report is the Case Study itself which is written in the style of an Ivey case study (Leenders, Maufette-Leenders & Erskine, 2001). The case focuses on the key decisions or development points faced by Vale in their expansion in Africa, with a particular focus on Mozambique.

The Case Study therefore provides the reader with the background which informs these decisions. It includes brief descriptions of Vale's corporate history and of the socio-political context in Mozambique, including the way in which Mozambican institutions and infrastructure were decimated by thirty years of civil war.

The Case Study tracks some of the important political developments in Brazil which parallel Vale's development from a Brazil-focussed iron ore mining company to a semi-private diversified international mining house, in order to trace the linkages between Brazil's political influence and Vale's expansion.

Some of the key decision points along the path from Vale's first entry into Mozambique in 2004 up to the awarding of the Moatize coal rights in 2007 are examined in the Case Study. It also examines the opportunities and challenges presented to an expanding multinational mining company in a country with a very poor institutional framework.

The Case Study further describes some key contextual changes which have taken place since Vale made their initial investment in Mozambique, including:

- Changes in the international commodities outlook;
- Changes in the political environment in Brazil and Mozambique;
- The rise and rapid growth of Africa in general, and Mozambique in particular;
- Changes in the executive management structures of Vale; and
- The rise of resource nationalism internationally.

The challenge provided to the reader of the Case Study is to evaluate how Vale has reacted to these changes, as well as to the complex institutional environment, and to consider what their strategy might be going forward.

## **1.5 Teaching note**

In a traditional research report, the motivation for the research and the relevant theory on which the research is developed are presented in the Introduction and the Literature Review and then reviewed in the Discussion. However in this study, the motivation and the theoretical background are presented in Chapter 3 as the Teaching Note.



The purpose of the Teaching Note is therefore to suggest the questions and debate which the case should elicit during class discussion. Furthermore, it presents the academic literature which can be used to consider the problem, and some practical models which may be useful in understanding the case. The Teaching Note illustrates how important the institutional environment is to the decision-making of a multinational. It shows how, for Vale at least, the institutional environment has dictated strategy, rather than being merely background to strategy.

As per the Ivey convention (Leenders et al., 2001), direct reference to the theory base is not made in the Case Study, and thus, the Teaching Note can be thought of as covering both the Literature Review and the Discussion sections of a traditional research report.

## **1.6 Methodology**

Chapter 4 provides a description of the research methodology employed in compiling the Case Study. This is not usually documented in an Ivey-style case. However it is provided here to document the process which was followed and to demonstrate an appreciation of the rigour of the requirements of case-based qualitative research.

This chapter also describes how and why Vale was chosen as the subject of the case. It contains a description of the sources of information for the case, both public domain and within Vale. It includes the case study guide as a set of questions used to guide the interviewer, rather than the interviewee, as suggested by Yin (2003).

## 1.7 References

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## 2 CASE STUDY

### INSTITUTIONS AND STRATEGY IN DYNAMIC MARKETS: VALE IN MOZAMBIQUE

#### Introduction

On the 5<sup>th</sup> of June 2012, Murilo Ferreira, the CEO of Brazilian mining giant Vale, was in Beira, Mozambique, attending the official opening of a new six million tonne per annum (Mtpa) coal export terminal (All Africa, 2012).<sup>1</sup>

Since Ferreira had been appointed to the position of CEO in May 2011 (Rapoza, 2011),<sup>2</sup> he must have had taken a keen interest in developments in Mozambique, a country in which his predecessor, the famed Roger Agnelli, had initiated significant investments (Campbell, 2011),<sup>3</sup> most notably in the 11Mtpa Moatize Coal Project of which the Beira coal export terminal was an important part (All Africa, 2012).<sup>4</sup>

As Ferreira put the finishing touches to his speech for the opening ceremony, no doubt he recalled with some pride Vale's achievements in Mozambique. After all, in his first term with the company, between 1998 and 2008, he had seen the beginnings of Vale's early efforts in the Southern African country. But at the same time, he couldn't help but consider what challenges Vale would have to overcome as they charted the growth of their biggest ever coal project and one that could positively change the economy of Mozambique over the next fifty years.

The mining world was facing uncertain times and the Mozambican government was in the midst of reviewing its mining legislation. In a trend which was mirrored in many countries worldwide, governments sought to extract a greater share of mining profits. In Indonesia for example, a country in which Vale was significantly invested, the government had recently announced plans to renegotiate its stake in the massive Freeport-McMoran Grasberg mine, one of the world's largest copper and gold operations (Kosich, 2012).<sup>5</sup> Mozambique could suffer from similar erratic policy making and decisions and yet, Ferreira's own Board was considering a proposal to double the proposed Mozambique production from 11Mtpa to 22Mtpa (Flak, 2012).<sup>6</sup>

## History

### The early years

Companhia Vale do Rio Doce (CVRD) was formed by the staunchly nationalist Brazilian president, Getúlio Vargas, in 1942 (Raw, 1987).<sup>7</sup> At the time, it was an entirely state-owned mining company. CVRD went through several decades of mixed success, based primarily on the exploitation of Brazil's significant iron-ore mineral resources (Raw, 1987).<sup>8</sup> In the 1980s and 1990s, CVRD was sometimes cited as a case study in the operation of a successful state-owned enterprise (SOE) at a time when the trend throughout the western world was toward the privatisation of SOEs (Raw, 1987).<sup>9</sup>

Between 1995 and 1997, CVRD was privatised by then president Fernando Henrique Cardoso. Several elements of Brazilian society opposed the privatisation - most notably the Workers Party which was headed at the time by the future president Luis Inácio “Lula” da Silva (commonly called President Lula) (Khanna, Musacchio & Reisen de Pinho, 2010).<sup>10</sup>

Despite the Workers Party objections, the subsequent decade was to prove a highly successful one for CVRD: it appointed a progressive CEO, Roger Agnelli; re-branded itself as Vale; and underwent a period of rapid expansion, both through increased production and acquisitions, to become by 2011, the world's largest iron-ore miner and the world's second most valuable mining company by market capitalisation (Khanna et al., 2010).<sup>11</sup>

### The Agnelli years

In 2001, Vale appointed a former investment banker with a limited mining background, Roger Agnelli as CEO. During Agnelli's time, Vale diversified both geographically and in terms of commodities (Khanna et al., 2010).<sup>12</sup> Agnelli changed Vale's focus from its traditional customer-base in developed markets, to an emerging market customer-base in China and India. According to the head of Vale's ferrous metals division, Jose Carlos Martins, Vale was “an iron-ore company with a business model focused on bulk volumes handled by an integrated platform ... investments in fertilizers in Brazil could take advantage of our existing structure while exploring coal in Mozambique would be an attempt to replicate our expertise abroad” (Khanna et al., 2010).<sup>13</sup>

Agnelli was a fierce advocate of Africa as a developing market and as a source of raw materials (Campbell, 2011).<sup>14</sup> Towards the end of his tenure, Agnelli announced development projects in Africa, including projects in the Democratic Republic of Congo (DRC), Mozambique, Zambia and Guinea, which had a combined proposed capital investment spend of \$12bn between 2011 and 2015 (Campbell, 2011).<sup>15</sup>

#### The appointment of Ferreira

In spite of Roger Agnelli's spectacular success during his 10 years as CEO, by 2009 Vale's leadership was experiencing increasing pressure from President Lula to invest more heavily in Brazil's integrated steel industry, and less in international diversification (Khanna et al., 2010).<sup>16</sup> President Lula was succeeded by Dilma Rouseff in early 2011, and amidst widespread speculation of severe government pressure (Ellsworth & Luna, 2011),<sup>17</sup> the Vale Board replaced Agnelli with Murilo Ferreira. Although technically an outside appointment, Ferreira had a long history with Vale, having worked for Vale's aluminium division, as well as having headed up the Canadian nickel operations which Vale bought from Inco in 2006 (Brasileiro & Canassa, 2006).<sup>18</sup>

Ferreira was seen by some as a CEO who was likely to be friendlier to the ruling party than his predecessor and possibly re-direct some of the international investment which had troubled President Lula, into the domestic economy (Rapoza, 2011).<sup>19</sup> Many speculated over the future of investments in risky and unknown markets, especially in Africa, and particularly in Mozambique, a country which was still recovering from civil war and which at independence in 1992, was ranked as the poorest country in the world (World Bank, 2012).<sup>20</sup>

#### Three decades of war in Mozambique

Mozambique had been a Portuguese colony since the early 1500s (Newitt, 1995),<sup>21</sup> and the Mozambique War of Independence was fought by a single pro-independence army, the Frente de Libertação de Moçambique (Frelimo), from 1964 to 1974 (Robinson, 2006).<sup>22</sup> Mozambique gained independence from Portugal in 1975, but the peace which followed this independence was short lived (Hanlon, 2012).<sup>23</sup>

Both Rhodesia to the east and South Africa to the southeast were ruled by white, minority governments who opposed Frelimo, and the Frelimo government in Mozambique actively sided with the Rhodesian independence movement. The five years prior to the independence of Zimbabwe saw Mozambique hosting Rhodesian

independence fighters, which prompted attacks on the country by the Rhodesian army. In addition, there was internal fighting in Mozambique due to the formation of the anti-Frelimo guerrilla movement, Resistência Nacional Moçambicana (Renamo) (Hanlon, 2012).<sup>24</sup>

After independence was achieved in Zimbabwe in 1980, South Africa quickly became the destabilising force in the region. Renamo came under the control of the South African government (Hanlon, 2012),<sup>25</sup> who pursued a strategy of destabilising Mozambique in order to encourage their economic dependence on South Africa, to protect South Africa from communist and black rebellion, and to maintain Mozambique in complete disarray which would eliminate it as a military threat, and prevent it from supporting the African National Congress (ANC).

The period between 1980 and 1992 was a period of civil war in Mozambique between Frelimo and Renamo (Robinson, 2006).<sup>26</sup> While there were undoubtedly external sponsors of the war, the majority of the participants in the hostilities were Mozambicans, and Renamo did enjoy support from sections of the population intent on overthrowing Frelimo (Robinson, 2006).<sup>27</sup>

#### The impact of the war on Mozambique's institutions

Mozambique was by most standards a poor nation prior to the outbreak of the War of Independence in 1964 (Newitt, 1995).<sup>28</sup> In the midst of this war, GDP per capita was estimated at \$132 (Bruck, 1997).<sup>29</sup> Little had changed by 1980, when GDP per capita stood at \$196; by 1990 and close to the signing of the peace treaty between Frelimo and Renamo, it was back down to \$115 (Bruck, 1997).<sup>30</sup>

The civil war was a long period of so called low-intensity war (Bruck, 1997)<sup>31</sup> characterised by Renamo insurgency in the rural areas, and Frelimo battling to retain control of the urban areas. To the average Mozambican, the war had a semi-permanent feel (Bruck, 1997),<sup>32</sup> and the end, when it came, was unexpected. Thirty per cent of the population of 15 million were displaced within Mozambique, and a further 1 million sought refugee status in neighbouring countries (Bruck, 1997).<sup>33</sup>

Mozambique's capital stock (Bruck, 1997)<sup>34</sup> including physical capital such as roads, power lines and schools; human capital such as skills, ability and labour; and social capital such as legislative, executive and legal systems were hollowed out or completely absent by the end of the war.

Mozambique's farming institutions took a battering: by the end of 1992, 68% of the country's dams had been destroyed and 38% of its nurseries (Exhibit B). Its communication infrastructure was effectively destroyed, particularly in the rural areas, where 68% of all post offices were rendered non-operational or destroyed (Bruck, 1997).<sup>35</sup> Public institutions were also good targets for insurgent activity: 40% of municipal administration centres were completely destroyed and 67% were rendered inoperable. Mozambique's colonial era railway infrastructure was irreversibly affected with some 300 locomotives or close to 50% of the country's locomotive capital destroyed between 1981 and 1989 alone (Bruck, 1997).<sup>36</sup> Fifty eight per cent of the country's primary schools were destroyed, predominantly in the rural areas (Bruck, 1997).<sup>37</sup>

#### Joachim Chissano and the end of the war

According to Robinson (2006),<sup>38</sup> Frelimo was far from a united force as a governing party. He argues that a layer of Mozambican nationalists existed within the party and the armed forces, the Forças Populares de Libertação de Moçambique (FPLM) which sought to enrich themselves and that the conditions of war provided plenty of opportunities for that enrichment. Robinson (2006)<sup>39</sup> further argues that it was to prevent the removal of this status quo that elements within Frelimo and the FPLM, along with South African backing, attempted to remove Mozambican President Samora Machel in 1984 via a military coup.

Joachim Chissano took power in 1986 after the death of Samora Machel in a plane crash, near Komatipoort in South Africa. Chissano had free-market leanings (Robinson, 2006),<sup>40</sup> as distinct from his predecessor, but at the same time, his nationalist constituency sought to maintain their privilege provided by the uncertainty of war, and so Chissano resisted peace negotiations with Renamo for several years.

The year 1989 was a memorable one in international politics, and in the regional politics of Southern Africa (Sisulu, 2002).<sup>41</sup> The collapse of the Berlin Wall and the end of the Cold War coincided with the repeal of Apartheid's most invidious laws - the Immorality Act (Republic of South Africa, 1985),<sup>42</sup> and the Group Areas Act (Republic of South Africa, 1991).<sup>43</sup> Chissano's alternatives to a negotiated settlement became few and far between, and a peace accord between Frelimo and Renamo was signed in Rome in October 1992.

Mozambique held elections in 1994 and Frelimo retained power through subsequent elections in 1999, 2004 and 2009. The next general election is scheduled to be in 2014, and although most expect it to be successful (Brandt, 2012),<sup>44</sup> a growing issue is expected to be the exploitation of Mozambique's rapidly developing natural resources such as phosphates, natural gas and coal (Campbell).<sup>45</sup>

### **Coking coal in Mozambique**

Coal has been used by man as a source of energy for centuries (Schweinfurth, 2009).<sup>46</sup> The two most common uses of coal today are as a source of heat for generating electric power, and as a source of coke (see Exhibit A). Coke is a fuel source and a reductant in metallurgical processes, particularly steel making. It is produced by heating coal in an oxygen-free environment and it needs to be derived from coals with relatively low quantities of sulphur and ash (non-carbon impurities).

The coals destined for these uses are referred to as thermal and coking coal respectively, and while thermal coal is relatively ubiquitous around the world, good quality coking coal is relatively rare (Stewardson, 2012).<sup>47</sup>

The coals in and around the Tete Province in Mozambique (Exhibit C) have been known for many years and are best known for their ability to produce hard coking coal (Gardiner, 2011).<sup>48</sup> Exploration in the Moatize sub-basin was started as early as 1948 by the Companhia Carbonifera de Moçambique (Gardiner, 2011).<sup>49</sup> By the start of the civil war, this Mozambican state-owned mining company was producing 0.5Mtpa, of which half was coking coal (Gardiner, 2011).<sup>50</sup>

It is typical for Tete projects to have a large proportion of secondary thermal coal products associated with their primary coking coal product. But according to Mark Stewardson (2012),<sup>51</sup> a geologist who has evaluated coal projects all over the world, "If you were looking for thermal, you wouldn't go to Tete – it's too complicated".

One of the characteristics of Tete coals is that they are slightly higher in sulphur than would be ideal. According to Andrews (2012),<sup>52</sup> a technical advisor to the coal industry, "This means that Tete coking coal needs to be used with very low sulphur iron ore. Most players in the area explain this away by saying that they will simply sell to the Brazilians, who hold the largest source of low-sulphur iron ore".



In addition, the development of Mozambique itself was a limitation to the expansion of any coal projects. According to Stewardson (2012),<sup>53</sup> “That deposit has been around for ages. Originally JCI, and then Anglovaal looked at it in the mid-1980s. In those days the geology was complicated, but the infrastructure was the key problem ... and the country was a mess”.

#### The Moatise concession tender

The remarkable transition to peace took place in the early 1990s, but it took some time before Mozambique opened up to international investment. One of the reasons for the delay was the perception that Mozambique was an unstable country. “Even in the early 2000s, there were huge numbers of landmines in the rural areas”, according to Wayne Viljoen (2012)<sup>54</sup> who was an exploration geologist at the time with CAMEC, one of the first mining companies to go back into Mozambique after the war. There was a high level of suspicion and distrust of foreigners amongst Mozambicans at the time, “Who could blame them, considering the influence that foreign countries had on turning their country into a battle-ground” (Viljoen, 2012).<sup>55</sup>

Senior Advisor at Vale, Andrew de Simone (2012)<sup>56</sup> explained that Vale opened offices in South Africa and Mozambique in about 2004. Like Vale, other mining majors had identified the Tete coalfield as one of the few left in the world with coking coal potential. “Vale’s presence in Mozambique at the time needs to be appreciated in the context of the fact that Brazil was in an expansionary phase in general, under Lula. Also, between 2002 and 2005, you have an emerging commodities boom, and as a result a company with good cash flow and good near-term market prospects” (de Simone, 2012).<sup>57</sup>

President Lula sought to develop ties with African countries with which Brazil had a cultural or strategic fit, such as Mozambique and Angola (Andrew de Simone, 2012).<sup>58</sup> In fact, the Brazilian president visited 25 different African countries during his 10 years in office, beginning in 2002 (BBC, 2010).<sup>59</sup> Brazil’s foreign minister under President Lula from 2003 to 2011, Celso Amorim, explained the theme of Brazil’s foreign policy during Lula’s Presidency: “It is the use of culture and civilisation, not threats. It is a belief in dialogue, not force ... that is Brazil’s great skill - to be friends with everyone” (Lustig, 2010).<sup>60</sup>

In November 2004, 12 years after the end of the civil war and in the midst of the commodities boom (Exhibit E) Mozambique announced that “Brazil’s Cia Vale do Rio

Doce (Vale), in a partnership with American Metals and Coal International (AMCI) bid US\$122 million to win a tender process to develop the Moatize coal deposit” (Mining Journal, 2008).<sup>61</sup> According to most sources, Vale had been the clear front-runner. Andrews (2012)<sup>62</sup> recounts, “I certainly recall speaking to someone who was working for one of the other majors at the time - and they said that they knew from the outset that they had very little chance of winning the tender”. Exhibit D shows the current proliferation of coal concessions in the Tete Province. Interestingly, the Brazilian geological survey carried out the initial geological testwork in the central concession area which the Brazilian-based Vale holds today.(Andrews, 2012).<sup>63</sup>

Despite the modest bid, it was clear from the outset that Vale was embarking on a hugely ambitious project. Mozambique had no steel industry to speak of, and no coal-fired power stations to treat the coking coal. Export was, and remains, the only viable market and this would depend on the available infrastructure. Vale would have to invest or physically build this infrastructure.

### **Mozambique’s rail infrastructure**

Tete is not connected by rail to Mozambique’s major port in Maputo (Exhibit C) and the connection from Tete to Mozambique’s second port, Beira (the so-called Sena line), was barely operational in 2002. In the interim, this was rehabilitated and by 2011, had a capacity of 6Mtpa, of which between 3Mtpa and 4Mtpa could be used for coal (Ryan, 2010; Gardiner, 2011).<sup>64,65</sup>

The Beira port itself has constraints. Before the 2011 upgrade to 6Mtpa, major investment was required to enable it to handle any significant export of coal, due to its small capacity and the fact that it can only handle small feeder ships. Yet, when Vale first announced its intention to mine, after the completion of a Feasibility Study in 2007, it envisaged a start-up capacity of 1.5Mtpa of coal in 2011 and an operating capacity of 11Mtpa of coal (Gardiner, 2011).<sup>66</sup>

As it turned out, Vale did export its first coal in 2011 - about 1Mt of coal (Campbell, 2011),<sup>67</sup> and notwithstanding the constraint imposed by infrastructure, announced in November 2011 that the Board had approved an expansion of the initial planned output of 11Mtpa to 22Mtpa, five times Mozambique’s nominal rail capacity at the time, for a product with no local market.

### The Nacala corridor

Faced with an asset which could never be utilised to its full extent and an environment becoming more and more competitive, Vale went about finding a solution to the infrastructure constraint in Northern Mozambique. In the interim, every piece of real estate which was likely or even unlikely to contain coking coal was hastily acquired by competitors (Exhibit D).

In August 2011, Rio Tinto announced the purchase, for \$4bn, of Riversdale Mining's concessions in Tete (London Commodity News, 2011)<sup>68</sup>; their intention to develop a mine at their Zambeze Project; as well as a joint venture with Indian-based Tata Steel for a 5Mtpa operation at their Benga Project, which together would produce 20Mtpa. Exhibit F illustrates that if all of the proposed operations in the Tete Province came to fruition, Mozambique could be exporting 100Mtpa of coal by 2020, requiring a staggering increase in rail and port-handling capacity of 2 000%.

In a bid to capture the dominant position in the export of coal from the Zambezi valley, intense negotiations between the Mozambican government and the major concession holders in the country started in 2007, over the right to build and operate the necessary infrastructure.

With the Beira port's long-term coal handling capacity restricted, Vale considered the best alternative to be a rail link through Malawi, and directly west to the coast at Nacala (Exhibit C). Nacala had the advantage of being a deep water port which could accommodate ships of any size (World Bank, 2010).<sup>69</sup> In December 2011, Vale signed a rail concession contract with the Malawian government allowing it to build and operate a railway across southern Malawi (All Africa, 2012).<sup>70</sup>

In July 2012, after years of negotiation, Vale announced the formation of a joint venture with Mozambique's publicly owned rail and ports company, Portos e Caminhos de Ferro de Mozambique (CFM), called the Northern Integrated Logistical Corridor (CLIN) (All Africa, 2012).<sup>71</sup> The CLIN holds the lease to a railway line to be built from Moatize to the northern Mozambique coast as well as the lease to operate a new dedicated coal terminal at Nacala port. The anticipated capital costs, including the section in Malawi, is \$4bn, but critically, the anticipated capacity is 40Mtpa, of which 30Mtpa will be dedicated to coal from Vale's operations in Moatize (All Africa, 2012).<sup>72</sup> According to Mozambique's current Deputy Justice Minister, Alberto Nkutumula, "the rest could be coal mined by other companies, or simply the transport of people and

goods" (All Africa, 2012).<sup>73</sup> Many industry sources have been sceptical as to how easy it would be for general cargo to be accommodated on a line which is dedicated for the export of mining products (Brandt, Gardiner, Stewardson).<sup>74,75,76</sup>

Vale had a few competitive advantages in these dealings. As de Simone (2012)<sup>77</sup> pointed out, "Vale is an experienced and successful logistics operator, in addition to being a sophisticated mining company". In Brazil, Vale operate some 10 000km of railway line (three times the total length of rail in Mozambique) and five ports (Khanna et al., 2010).<sup>78</sup> Vale had developed and honed these skills in Brazil, and continued during their early expansion into difficult locations. In addition there is the added communication advantage which the Portuguese-speaking Vale management had over their predominantly Anglophone competitors.

Many consider Vale's most important assets in the race to capture the dominant position in the export of coal from the Zambezi valley to have been their control of the best-developed part of the coal resource; and to be the first to have had a clear vision and to have spent real money around infrastructure. As analyst Ross Gardiner (2012)<sup>79</sup> put it, "Vale had a clean slate on which to develop their strategy. The most important thing was having first access to the resource. Perhaps they saw more in the resource than the other competitors...". Or, in the words of a retired executive from a competitor company (Anonymous, personal communication, September, 2012), "Vale had the guts to get in there and put the infrastructure in place".

### **Working in Tete**

There was more to developing Tete than just putting rail infrastructure in place. The Moatize project required a combination of skills and services which were not readily available in the relatively unsophisticated Mozambique.

As Andrews (2012)<sup>80</sup> explained, "Even as Vale shipped its first coal from the Tete Province in 2011, Tete itself didn't have a supermarket. You might be able to source a local accountant and use a local bank for transaction, but mining services are non-existent. Almost everything needed to build the operation was shipped in by road or on the Sena railway line". Skilled labour was also in short supply. "There's lots of labour - but there is almost a lost generation of people who have never worked - who don't know what it's like to go to work and come back the next day" (Andrews, 2012).<sup>81</sup> Many

of the skilled and educated Mozambicans had left the country for Zimbabwe or South Africa (Viljoen, 2012).<sup>82</sup>

Stewardson (2012)<sup>83</sup> claimed that Vale had imported a lot of skills: “There’s a lot of labour, particularly from the Philippines, and the managers to a large extent are Brazilian”. According to Ferreira (All Africa, 2012)<sup>84</sup> though, in 2011, 85% of Vale’s employees were Mozambican and Vale improved the mining skills of its 7 500 employees through training in both Brazil and Mozambique.

“There’s no doubt that Vale made Tete the town that it is”, emphasised Stewardson (2012),<sup>85</sup> “and potentially freed up Tete Province’s substantial coal reserves”. “It’s a classic case of a primary investor paving the way for the development of an industry” said de Simone (2012).<sup>86</sup> Despite the challenges, the Moatize project produced its first coal in August 2011 (Campbell, 2011),<sup>87</sup> eventually exporting close to 1Mt in its first year through Beira.

### **Economic climate change**

Vale’s rapid expansion in Mozambique had taken place largely during a period of expansion, both for Vale, and for Brazil (de Simone, 2012),<sup>88</sup> and during a heady time for commodity prices. Vale’s first year of production from the Moatize coal field however, was characterised by a dynamic political and economic environment. Mozambique had established an investor-friendly climate, with relatively modest requirements in terms of tax and royalties for foreign-owned companies, particularly for those in the extractive industry (Stewardson, 2012).<sup>89</sup>

That mining legislation was adopted in 2002, and according to the Mozambican Mineral Resources Minister, “...there are aspects of it that we need to improve” (Campbell, 2012).<sup>90</sup> For example, the 2002 legislation permitted a company to hold a mining license for a period of 15 years prior to mining (Republic of Mozambique, 2002).<sup>91</sup> Furthermore, the 2002 legislation required a minimum of five per cent of the local company to be owned by Mozambicans (de Simone, 2012).<sup>92</sup> In 2011, there had been suggestions from state officials that the government would seek to change both of these provisions. At the time of writing, August 2012, it was anticipated that a new proposed mining code would be submitted to Mozambique’s cabinet imminently.

Since 2008, there had been an increase in the number of international calls for a more equitable distribution of mining benefits to the country which hosts the mineral wealth (Solomon, 2012).<sup>93</sup> In neighbouring South Africa, an acrimonious debate had arisen between the ruling ANC, and its youth movement, the ANC Youth League on the future of the mining industry – and there had been vociferous calls for the nationalisation of South African mines. In Zimbabwe, established miner, Impala Platinum, had been forced to renegotiate the state's share of its Zimbabwean operating company, Zimplats (England & Hawkins, 2012).<sup>94</sup>

The situation extended well beyond Southern Africa or Africa. In Indonesia, the state sought to renegotiate what it described as “unfair mining contracts signed prior to the passage of the 2009 mining law” with the world largest copper producer, Freeport McMoran (Husna & Otto, 2012)<sup>95</sup>, this in an environment of reduced international iron ore and coking coal prices, relative to those experienced when the bulk of Vale's developments in Moatize took place.

Aside from the capital expenditure and employment created through Vale's projects in Mozambique (in 2011, Vale employed almost 7 500 Mozambicans), Vale recognised the importance of contributing to the development of Mozambique in general. The company had focussed its contribution to the country's economic development through local level initiatives, such as housing, development in agriculture, and the use of local suppliers and local skills rather than contributing to national development initiatives (de Simone, 2012).<sup>96</sup> It could be argued that financing large infrastructure projects such as the CLIN represented a change in this strategy, more focussed on national development initiatives.

In the early days of Vale's development in Mozambique, their stakeholder engagement was focussed with the ruling party, but there was now a broader set of stakeholders which the company had to engage with (de Simone, 2012).<sup>97</sup> Despite the apparent strength of Frelimo, with 2014 being an election year, the political opposition had become a growing voice. There were increasingly frequent accusations that the government was becoming too comfortable with business. The success of Vale's development in Tete would also mean that the average Mozambican would now see coal being exported from the country, rather than just investment being channelled into the country (Brandt, 2012).<sup>98</sup> It remained to be seen if the electorate would seek to capitalise on the apparent growth in the Mozambican economy by applying pressure

for a greater share of the profits of Mozambique's mineral wealth, and specifically those from the Zambezi valley.

### **Conclusion**

All of these factors needed to be weighed up in the mind of Murilo Ferreira as he pondered Vale's strategy in Mozambique. Vale finally had control over the fate of the Nacala corridor, and sufficient potential capacity for more than 130% of its planned production, but it remained to be seen how they would go about allocating the remaining capacity. They could use the capacity to further develop the Tete coalfields, thereby liberating economic activity in the region, but this would mean allowing competitor access to the corridor. Ferreira must also have wondered if the formal and informal networks, developed by Vale and by Brazil, could keep up with the changing political landscape in Mozambique; and how will this affect Vale's ability to manage all the complex linkages which are required to get the coal to the sea.

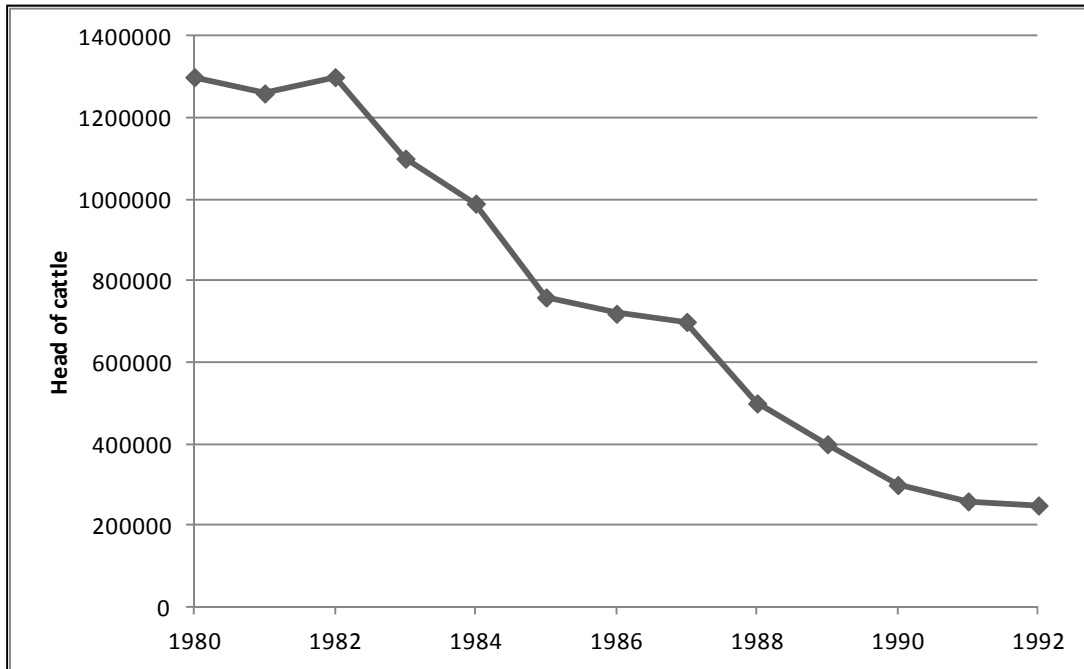
## Exhibits

### Exhibit A: Glossary

AMCI	American Metals and Coal International
ANC	African National Congress
CAMEC	Central African Mining and Exploration Company
CFM	Portos e Caminhos de Ferro de Mozambique
CLIN	Northern Integrated Logistical Corridor
Coke	A raw material in steel production
Coking coal	Coal used as a feedstock in the production of coke. Also called metallurgical coal
CVRD	Companhia Vale do Rio Doce
FPLM	Forças Populares de Libertação de Moçambique
Frelimo	Frente de Libertação de Moçambique
GDP per capita	A measure of the total output of a country that takes the gross domestic product (GDP) and divides it by the number of people in the country
Thermal coal	Coal used for the generation of heat in power stations
Mtpa	Million tonne per annum
Renamo	Resistência Nacional Moçambicana
SOE	State-owned enterprise



Exhibit B: Cattle loss during the Mozambique civil war (Source: Bruck, 1991)<sup>99</sup>



**Exhibit C: Major infrastructure of Mozambique and neighbouring countries**  
 (Compiled from public domain data)

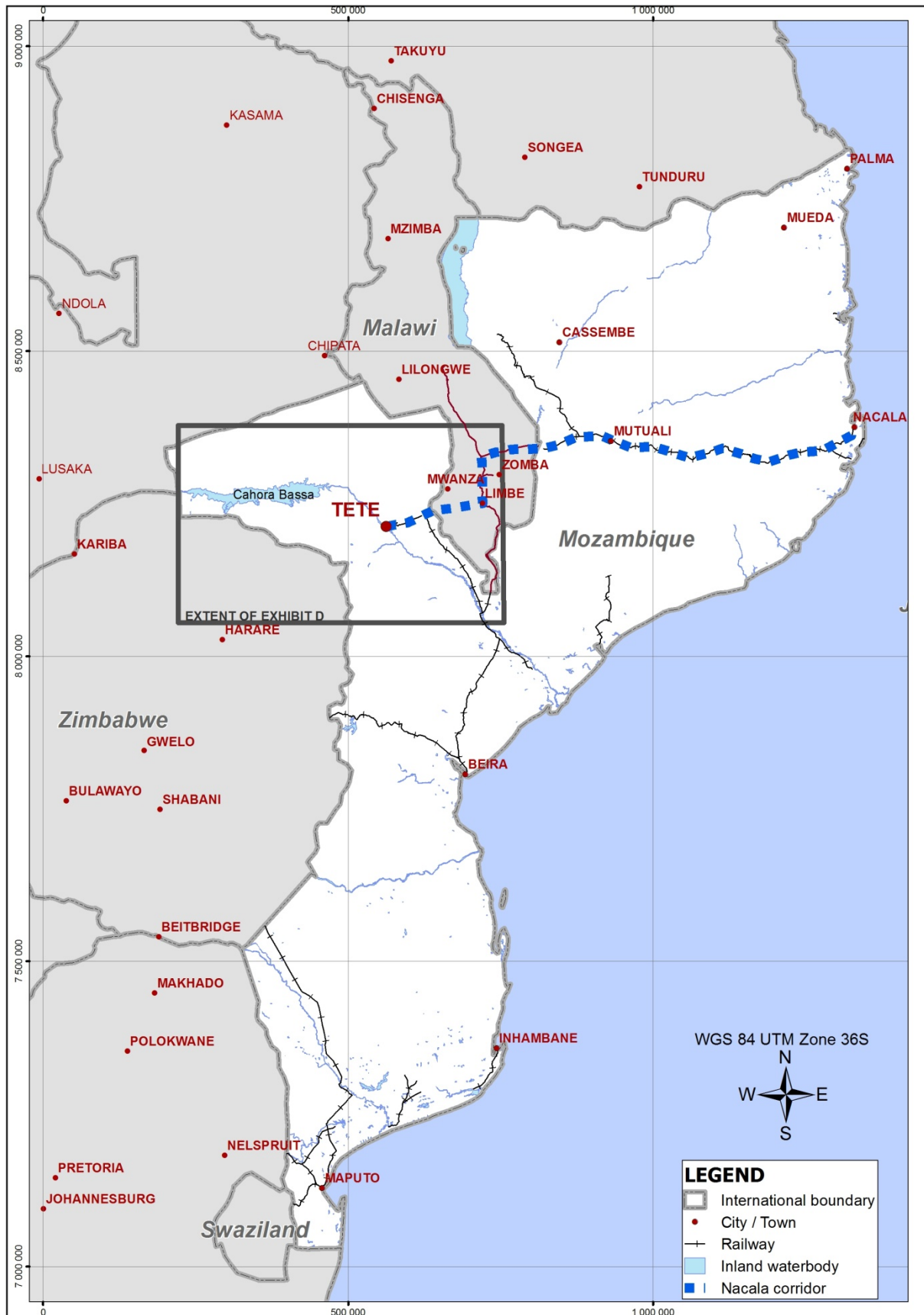


Exhibit D: Coal concession holders in the Tete Province of Mozambique (Source: Gardiner, 2012 – compiled from public domain information)<sup>100</sup>

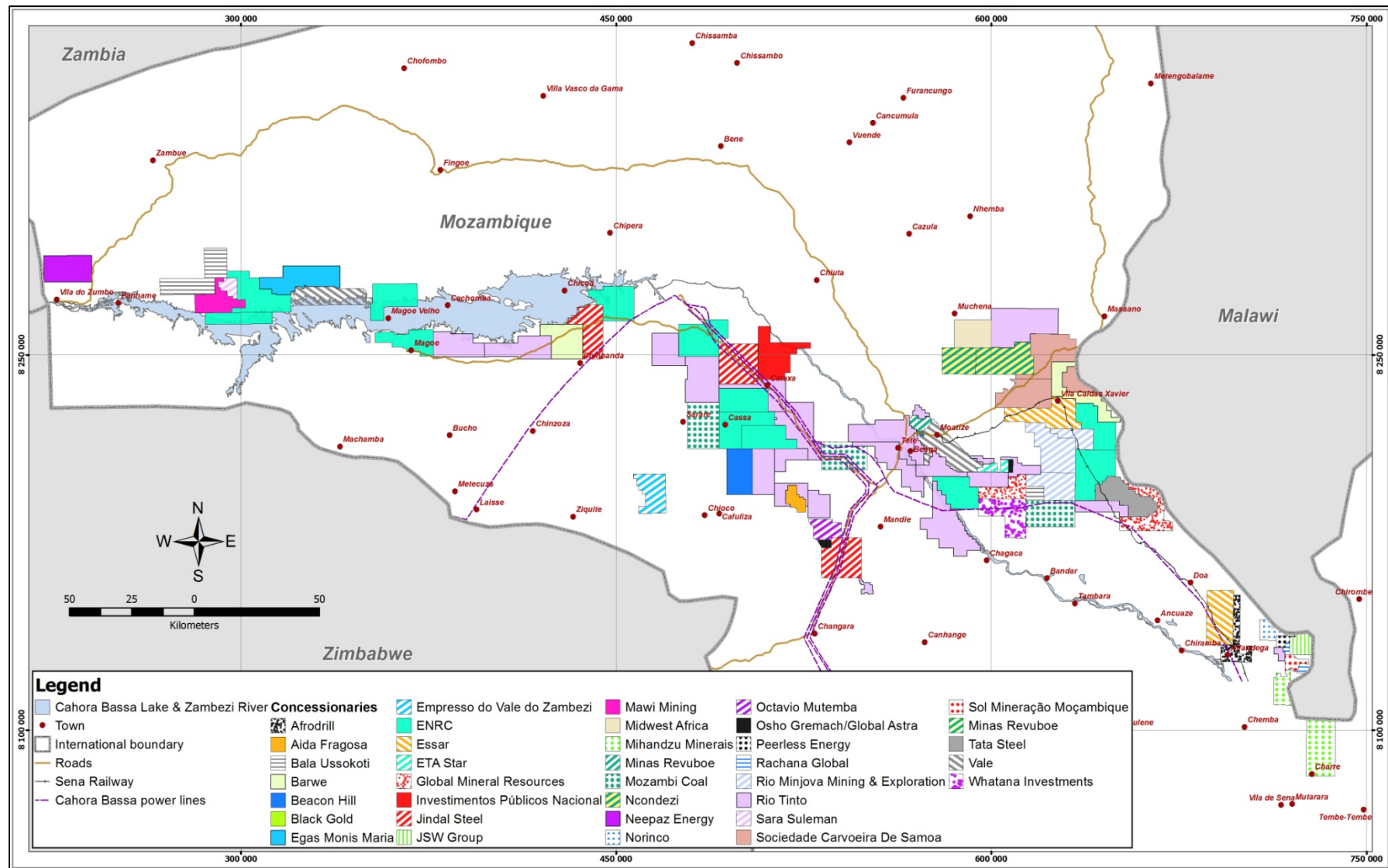
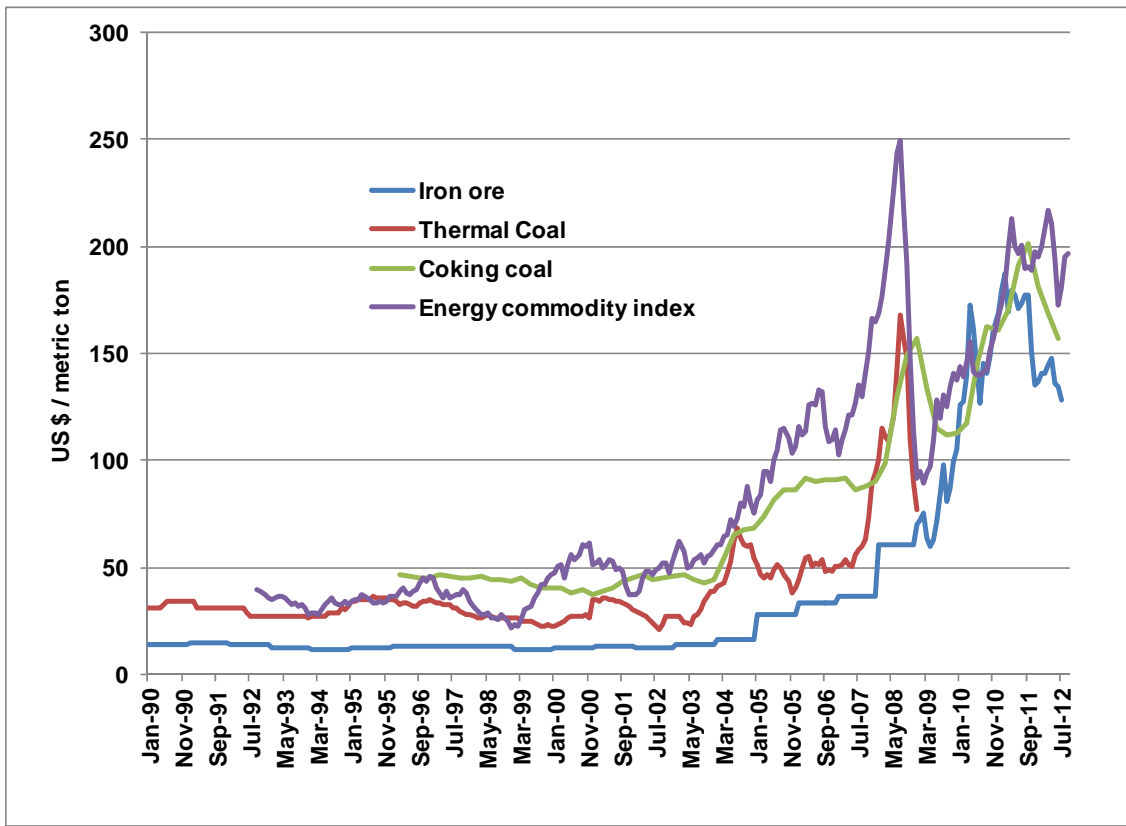
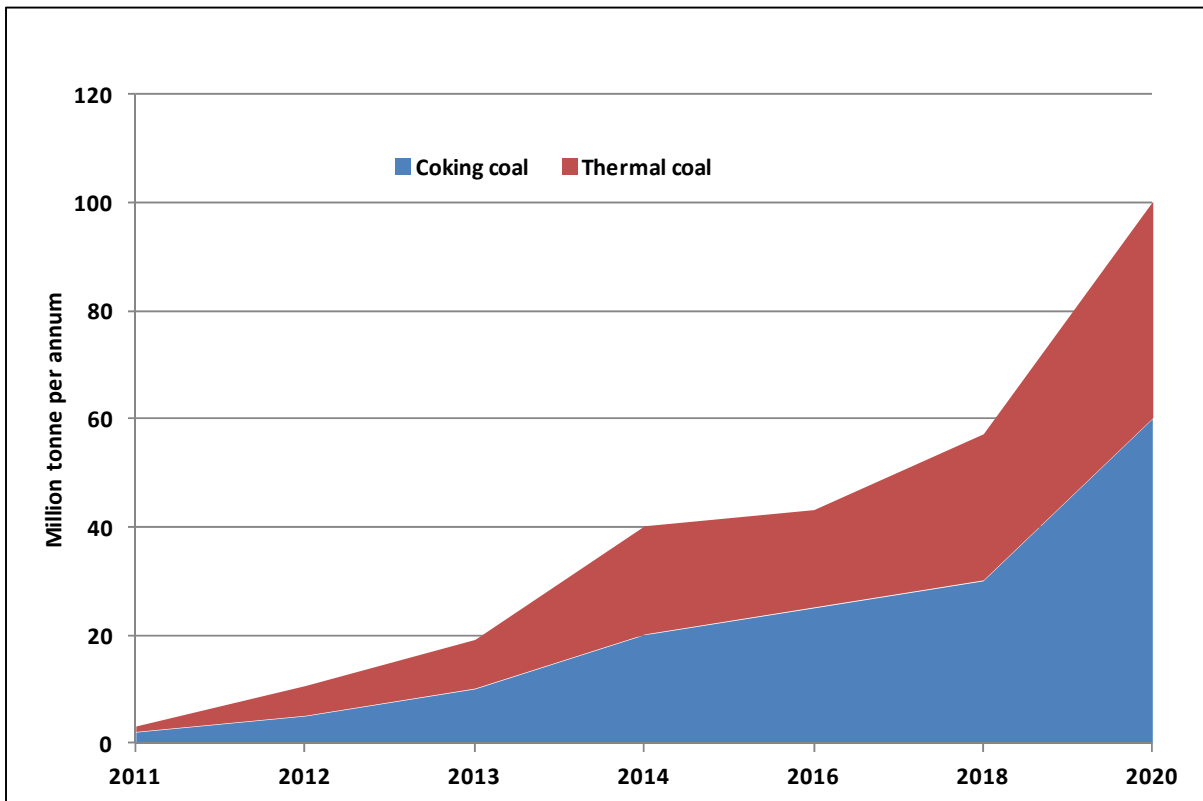


Exhibit E: Selected commodity prices between 1990 and 2012  
(Compiled from public domain data - nominal terms)



**Exhibit F: Mozambique's anticipated coal production capacity**  
(Source: Gardiner, 2012 – compiled from public domain information)<sup>101</sup>



**Exhibit C: Coal focussed capital projects proposed**

(Source: Gardiner, 2012 – compiled from public domain information)<sup>102</sup>

MAJOR PROJECTS	OWNER/OPERATOR (COUNTRY)	PROPOSED INVESTMENTS (USD)
<b>COAL MINES</b>		
Zambezi Coal	Riversdale (Australia)	2.0 billion
Moatize Coal	Vale (Brazil)	1.3 billion
Benga Coal	Riversdale (Australia) TATA Steel (India)	800 million
Cahora Bassa Coal	Jindal Steel and Power (India)	180 million
Ncondezi Coal	Ncondezi Coal Company (Mozambique)	52 million
Minas Moatize	Beacon Hill Resources (Australia)	-
Revuboe Coal	Talbot Group (Australia)	-
<b>POWER</b>		
Mphanda Nakuwa	Camargo Correa (Brazil) Energia Capital (Mozambique) EDM (Mozambique)	2.9 billion
CESUL Transmission	EDM (Mozambique)	2.5 billion
Benga Power	Riversdale (Australia)	1.3 billion
Cahora Bassa North Bank	EDM, CEZA (Mozambique)	800 million
<b>LOGISTICS</b>		
Shire-Zambezi Waterway	-	6.0 billion
Nacala Rail and Port	Vale (Brazil)	3.5 billion
Maputo Port Development	Maputo Port Development Company (Mozambique)	750 million
Sena Rail Line	MTC, CFM (Mozambique)	685 million
Nacala Road Corridor	Governments of Mozambique, Malawi and Zambia	262.84 million
New Zambezi River Bridge	Estradas do Zambeze (Portugal)	142.1 million
Port Of Beira	CFM (Mozambique)	-

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### 3 TEACHING NOTE

#### INSTITUTIONS AND STRATEGY IN DYNAMIC MARKETS: VALE IN MOZAMBIQUE

##### Case synopsis

The case focuses on the key decisions or development points faced by a Brazilian-based multinational mining company in their expansion in Africa, and particularly in Mozambique. The case provides the reader with the background which informs these decisions. This requires both an appreciation of Vale's corporate history and of the socio-political context in Mozambique, including the impact of the war between 1974 and 1992. It also identifies the importance of historical and cultural ties between Brazil and Mozambique.

The case links important political developments in Brazil with the development of Vale from a single-country, single-commodity mining company, to a semi-private diversified international mining house with significant and growing investments in Africa. It describes how Vale identified Mozambique as a potential source of a relatively rare energy commodity (coking coal) at a time when the company was making a concerted effort to expand its presence in the energy sector.

Some of the key decision points from Vale's entry in 2004, to the award of the mining rights in 2007 are examined, as are the opportunities and challenges presented to a multinational mining company in a country with a very poor institutional framework. Critically, the case demonstrates how Vale accepted the challenge of Mozambique's institutional deficiencies in infrastructure, product markets and skills; and then identifies how Vale turned this context into a competitive advantage by exploiting its cultural-political ties with Mozambique, and its experience as a developer and operator of infrastructure utilities.

Finally, the case identifies several constantly changing external environmental factors which have the potential to impact on a project with a long development timeline. These factors include volatile commodity prices, host and home country politics and policies, management structures, and resource nationalism. The challenge presented to the reader of the case is to evaluate how Vale has reacted to these challenges, to the complex institutional environment, and to consider what their strategy might be going forward.



The case thus demonstrates Vale's awareness of the importance of institutions, and supports Peng, Wang and Jiang's (2008)<sup>1</sup> concept of a "strategy tripod" , including the institution-based view, the resource-based view and the industry-based view of strategy. Furthermore, the research identifies the extent to which strategic choices available to businesses are determined by the institutional landscape of the host country.

In this analysis, the term "dynamic markets" is preferred to the somewhat less descriptive "emerging economies". Introduced by White (2012, p.11)<sup>2</sup>, dynamic markets are defined as markets which "exhibit exciting growth prospects, have undergone significant political, social and cultural change and show encouraging signs of innovation along with policy and institutional developments". However, as the theoretical paradigms on which the analysis is founded use the term emerging economies, the two terms are used interchangeably.

### **Keywords**

Dynamic markets, emerging markets, theory of institutions, company strategy, infrastructure, Mozambique, Vale.

### **Intended audience**

The case is intended for MBA students and corporate executive education course attendees.

### **Teaching objectives**

The objective of the Case Study and its associated Teaching Note is to provide the opportunity to discuss and understand several aspects of general management and the business environment by providing a multi-disciplinary study straddling corporate strategy, international business, political economy and institutional economics.

Within the sphere of strategy in international business, the case seeks to examine the relative importance of the institutional environment to the strategy of firms in emerging economies, when compared with the importance of internal resources and industry factors.

In the field of corporate strategy, students should obtain a better appreciation for the complex nature of institutions in dynamic markets, and through the example of Vale,

appreciate that these institutions represent both challenges, and opportunities to gain competitive advantage. The rapidly changing nature of the business environment in Mozambique is described in order to give students a better understanding of the importance of understanding context when applying general management practices in dynamic markets.

## **Assignment questions**

### Strategy in international business

Have the institutions in Mozambique acted as a background to Vale's unfolding strategy in Mozambique, or have they guided and influenced Vale's strategy? Do you consider Vale's approach to these institutions to be part of their competitive advantage? If not, what are Vale's competitive advantages in this context?

### Corporate strategy

What are the inherent "problems" in the institutional landscape in Mozambique? How should an organisation think about these "problems" in a dynamic market? How has Vale addressed and confronted them?

### Institutions and general management in dynamic markets

What challenges and opportunities do the highly contextual nature of business in Mozambique provide? How can these be juxtaposed with the macro-economic forces which shape the mining industry? How has Vale reacted to these challenges and what should their strategy be going forward?

## **Analysis**

### Introduction

In recent years, Vale has extended its operations beyond Brazil and into South America (Colombia and Paraguay), South-East Asia (Indonesia) and Africa (Zambia, Mozambique and Guinea) (Vale, 2012).<sup>3</sup> As such, Vale has grown and competed in numerous less developed and dynamic markets in the last decade. Informal discussions with senior officials at Vale revealed that the company has a particular sensitivity towards the institutional environment in these markets, when compared with other large mining companies. An official from Vale head office in Rio de Janeiro even indicated that not only do Vale consider an understanding of its institutional environment a critical element of their business, but in dynamic markets, they consider that understanding to be a potential source of competitive advantage.

Vale's experience in Mozambique represents a useful case study to test whether the perception of Vale's sensitivity towards the institutional environment, and Vale's assertion that institutional awareness can be a source of competitive advantage, is valid.

It is important to understand this because although the case methodology can be limited in its application outside of the case, if the institutional framework is much more than background to the competitive landscape, then any company expanding in emerging markets can learn from the lessons obtained through the case.

### Strategy in international business

Porter (1980)<sup>4</sup> proposes the industry-based view of strategy, which argues that factors within an industry, such as competition, determine strategy and performance. The alternative resource-based view of strategy put forward by Barney (1991)<sup>5</sup> argues that it is largely the characteristics or differences between firms, which determine strategy. These two theoretical frameworks are the most commonly used frameworks applied to understanding the approach of organisations to business strategy in developed economies.

North (1989)<sup>6</sup>, widely regarded as the father of institutional economics, introduced the concept of institutions that impact transaction costs, and looks at their importance to economic growth. He describes institutions as "a combination of rules, enforcements and norms of behavior". Scott (1995)<sup>7</sup> describes institutional theory as being interested in the influence of the systems surrounding organisations, on the behaviour of individuals and organisations. The importance of institutions has thus deep roots in both economics and sociology.

While the industry-based and resource-based views both take cognisance of the environment, the role of institutions within strategy research has become more significant. Hoskisson, Eden, Lau and Wright (2000)<sup>8</sup> assessed that institutional theory had become the pre-eminent theory in explaining the strategies employed by organisations in emerging economies, and argue that the reason for this is that the influence of government and society on organisation is more important in emerging economies than in developed economies.

Peng, Wang and Jiang (2008)<sup>9</sup> argue that a third view of strategy has emerged - the institution-based view. They propose that institutions are far more than background to

the firm or industry factors which typically drive strategy. They emphasise that the strategic choices available to businesses are largely determined by the institutional landscape of the host country.

In analysing this case, students can debate the relative merits of Peng's concept of an institution-based view of strategy, against the traditional resource-based and industry-based view. Table 1 presents some of the evidence for these three views that can be referenced from the case.

**Table 1: Evidence for the institution-, industry- and resource-based view of strategy**

Institution	Industry	Resource
Vale's strategy was linked to Brazil's foreign policy. Brazil considered Mozambique to be a place where it had influence.	Roger Agnelli changed Vale's customer-focus from its traditional customer-base in developed markets to an emerging customer-base in China and India.	Vale identified that Mozambique was one of the only remaining sources of coking coal.
Vale identified the lack of infrastructure as a potential competitive advantage rather than a barrier to the project's success.	Agnelli was a fierce advocate of Africa as a market, and as a source of raw materials.	Vale had demonstrated capabilities in running mining and logistics infrastructure which was important to winning the rail concession.
Vale appear to have used the support of Brazil, and their culture / language affinities with Mozambique to good effect in being awarded the tender.	Rivalry for access to limited rail infrastructure created a highly competitive environment within the local industry.	Vale negotiated access to the most important coal producing basin (the Moatize basin).
Vale's focus on infrastructure in Malawi and Mozambique, and the winning of the Nacala rail and port concession have placed them in a dominant competitive position.	Vale have the opportunity to make barriers of entry for their competitors by limiting competitive access to the Nacala rail.	-

Institution	Industry	Resource
The institutional damage caused by the civil war forced Vale to develop local skills, build housing and roads, develop the mining supply-chain, and develop the town of Tete itself.	-	-
Early stakeholder engagement focussed on the ruling party, but there is evidence that Vale is now engaging with a much wider set of stakeholders.	-	-

In their review of strategy in emerging markets, Wright, Filatotchev, Hoskisson and Peng (2005)<sup>10</sup> argue that institutional theory-based studies on firms from developed economies entering emerging economies has “barely scratched the surface of the impact of both formal and informal institutions on the strategies of foreign entrants”.

Meyer, Estrin, Bhaumik and Peng (2009)<sup>11</sup> identify that institutions in emerging markets help determine the entry strategies for resource-seeking companies. They identify that joint venture (JV) arrangements are more typical in institution-poor situations, whilst the JV is typically replaced by acquisition as a method of entry in institution-rich environments. However, Meyer et al. (2009)<sup>12</sup> still call for more research into what specific aspects of institutional framework can change company strategy.

There would appear to be some consensus around the fact that in emerging economies anyway, the institutional landscape plays a far greater role than simply background to the competition between firms, and in fact it can be a critical success factor. However there is limited evidence as to how these institutions actually influence strategy beyond the work of Meyer et al. (2009)<sup>13</sup> on the selection of entry strategies.

A critical question to debate is whether Vale, as a resource-seeking company, first selected Mozambique as one of the only remaining locations in the world where good quality coking coal could be obtained, and then paid attention to the institutions as a necessary tool in the course of business? Alternatively, did Vale perceive that through its political and cultural affinity with Mozambique, they could in some way reduce the

perceived risk in Mozambique, and hence obtain a competitive advantage over their rivals by being the first to go into Tete and by being the most prepared to make the capital investment required to resolve the infrastructure?

### Corporate strategy

Aligned with the research in international business on institutions, there is a stream of corporate strategy research which attempts to categorise complex institutional environment and identify how companies react to these environments. Khanna, Palepu and Sinha (2005)<sup>14</sup> propose that in emerging markets, companies are forced to compete in an environment which lacks many of the intermediary firms and regulatory systems which are characteristic of developed markets. They coin these deficiencies “institutional voids” and divide them into five contexts namely: political and social systems, openness, product markets, labour markets, and capital markets (Khanna et al., 2005).<sup>15</sup>

From the perspective of Vale, it is useful to use Khanna et al.’s framework to characterise the institutional voids which impact on their ability to do business in Mozambique (Khanna et al., 2005).<sup>16</sup>

Table 2 presents such an analysis, which could form the basis of class discussion.

**Table 2: Categorising Mozambique’s institutions using Khanna et al.’s framework**

Political and social systems	Openness	Product markets	Labour markets	Capital markets
A young, but relatively stable democracy.	Mistrust of foreign entrants, particularly in the 1990s.	Limited supplies of general goods and services.	Lack of skilled labour.	No capital market to speak of.
Complex mix of traditional and democratic leadership structures (not specifically described in the case).	Relatively investor-friendly ownership and royalty regime for extractive industries.	No mining supply or services companies.	Lack of skilled local management.	Capital needs to be raised internationally.

Political and social systems	Openness	Product markets	Labour markets	Capital markets
Corruption common in the 1990s, but improvements in the 2000s.	-	Highly constrained infrastructure to get products to market.	-	-
-	-	Limited bulk services such as water and electricity.	-	-

While the analysis presented in Table 2 is helpful in understanding the types of challenges faced by Vale, the next level of analysis is to consider whether this framework is complete and if it is applicable to the broad definition of dynamic markets.

It is proposed that Khanna et al.'s definition of "product market" is too broad for this analysis. They envisaged this section of the framework to include the ability of companies to access market and customer information; the ability to source goods and services; and the quality of logistics networks and infrastructure (Khanna et al., 2005).<sup>17</sup> They asked questions like, "Have global logistics companies set up local operations?" to determine if there were voids in the product market category (Khanna et al., 2005).<sup>18</sup>

The analysis of this case indicates that for resource-seeking companies, the nature of a country or region's physical infrastructure, such as railway, roads, and electrical power, should be a category of its own. The questions to be asked are much more basic than those envisaged by Khanna et al. and some examples of possible questions are provided in Table 3.

**Table 3: Questions in identifying physical infrastructure constraints in dynamic markets**

1. Do raw materials and components need specialised import infrastructure?
2. Is there sufficient electrical power to support operations?
3. Is the legislative framework in place to allow us to generate our own power?
4. Is there rail and port infrastructure to allow raw materials in and our product out?
5. Who owns the utilities – state or private?
6. Are there towns and amenities close to our operations in which staff can live?
7. Is there a reliable road network and will our operations be serviced by it?
8. Will suppliers of small goods and services able to utilise the road network, or will everything require specialised transport?
9. Is there sufficient water for our operations?
10. Is the legislative framework in place to allow us to source / dam sufficient water?

Khanna et al. (2005)<sup>19</sup> suggested that as a result of the fact that emerging markets lack maturity in the five contexts they identified, companies need to change how they operate in emerging markets. Three strategies for change are proposed: adapt, change the context, or stay away. Cantwell, Dunning and Lundan (2010)<sup>20</sup> proposed that the strategies used by firms to deal with complexity in the institutional environment fall into institutional avoidance, institutional adaptation, and institutional co-evolution.

In this case, rather than avoid the complex institutional environment in Mozambique, the number of companies which have obtained permits in Tete (Exhibit A) indicates that companies were willing to invest to find an alternative solution – in other words to adapt. Vale's approach was to adapt themselves, and to try and change the institutional environment.

It could be argued that Vale's primary adaptation to operating in a complex institutional environment was to be aware of the importance of institutions themselves. In this regard, there was an important link between Brazilian foreign policy and Vale's strategy, at least during the time of President Lula. The case indicates that not only did Vale's international expansion take place in a time of expansionary Brazilian foreign policy, but that Brazil, and President Lula in particular, focussed their political energies on countries which had cultural affinities with Brazil.

Another example of Vale's adaptation is the way they negotiated the Northern Integrated Logistical Corridor (CLIN) rail concession in which they become both the owner and operator of the Nacala rail corridor. As a result, it appears that by the end of



the case, Vale will be the first company to successfully unlock the Tete coalfields. Furthermore, as Vale can effectively dictate the terms of use of the Nacala corridor, they have a very strong competitive position in the region. As Andrew de Simone (2012)<sup>21</sup> indicates, it was Vale's experience in Brazil, where they own and operate rail and port infrastructure, that has been key to their ability to successfully conclude this agreement.

The Nacala negotiation represents both an adaptation and an ability to change the institutional environment, in that Vale did not necessarily intend to be an operator of railway lines in Mozambique, but the agreement itself represented a change in the way utilities are regulated in Mozambique and represented the first private concession.

A further example of the adaptation is Vale's plan to develop a modest thermal power station which will supply the requirements of the Moatize operation.

#### Institutions and general management in dynamic markets

At a political level, the case indicates that there have been changes in both Mozambican and Brazilian politics. Brazilian foreign policy appears to be less expansionary than in the 2000s, and the Brazilian president elected in 2011, Dilma Rousseff, does not appear to have the same will to forge common ground with Mozambique as her predecessor.

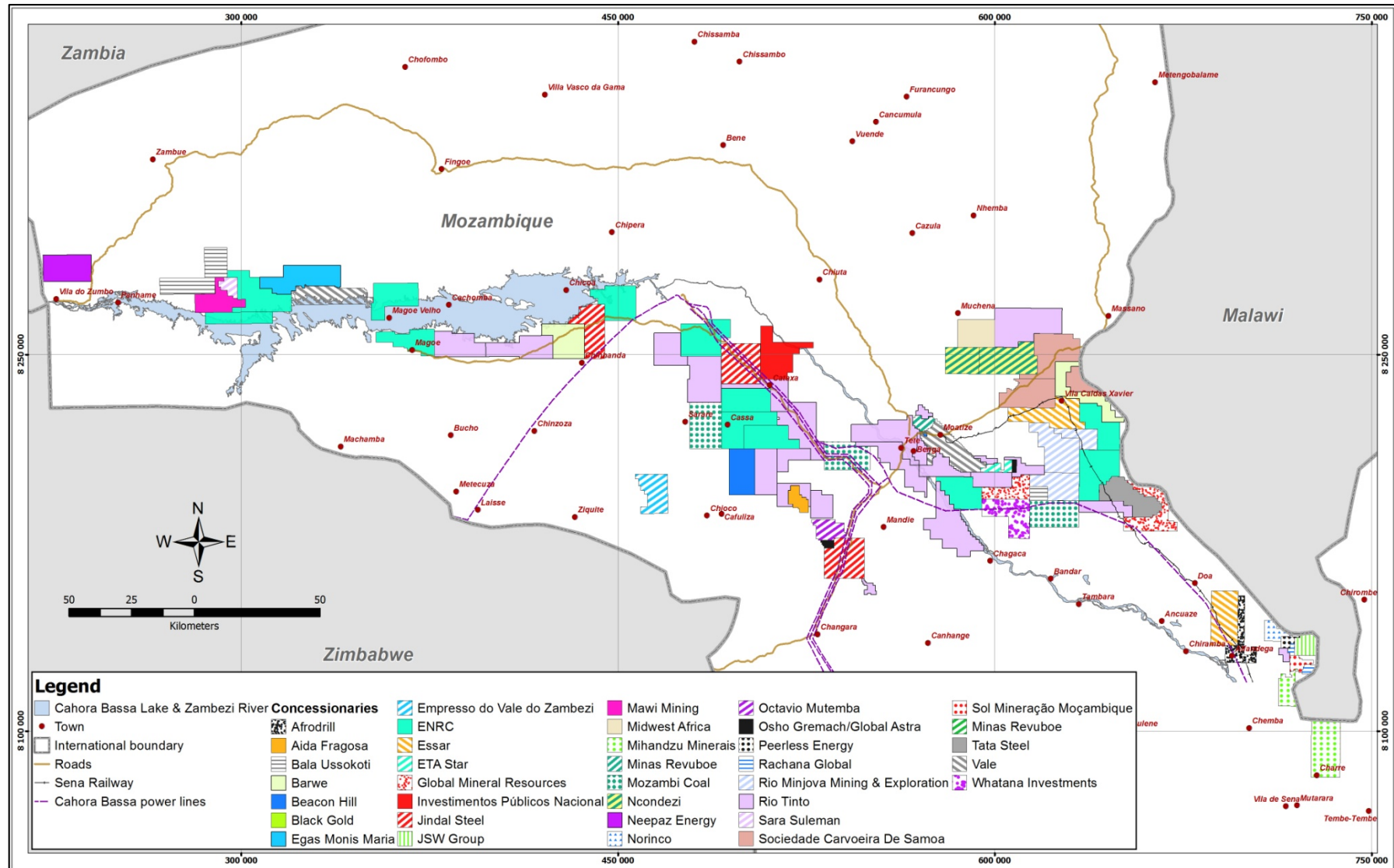
Mozambique is having a general election in 2014, and Vale has indicated that one of the things it is conscious of, is becoming more sensitive to the voice of the opposition and civil society in Mozambique (de Simone, 2012).<sup>22</sup> Furthermore, there are proposed changes to the mining legislation in Mozambique. There is some indication that the percentage of local ownership (currently 5%) will be changed to something possibly as high as 20%.

At a social level, although Vale emphasised the importance of their relationships with the local communities in Tete, there are indications that these relationships will require careful monitoring. Vale faced demonstrations from local communities during 2011. It should be noted that at present, the Tete coalfields are only generating investment in Mozambique, rather than generating dividends for its investors. When production ramps up and the local community see train after train of coal leaving for Nacala, this situation could become more complex.

There are two potential outcomes in terms of the competitive landscape. It is possible that as a result of the complexity of the logistics infrastructure, Vale could remain the only producer in the Tete region with a viable means of exporting its product. Alternatively, if the logistics corridors are further expanded, Vale's work in developing the skills and supply chain institutions within Tete could provide their competitors with an opportunity to leap-frog, or at least catch up rapidly, in terms of their own development.

Vale face a conundrum, alluded to in the last paragraph of the Case Study: "Should they open the outstanding potential rail capacity on the Nacala line to their competitors?" It would appear on the surface that the simple answer to this is, no. However, the Mozambican government and the local community, not to mention Vale's competitors, are all aware of the dominant position that the CLIN concession has placed Vale in. By not making the remaining capacity available, Vale could be seen to be damaging the development of Tete, and of sterilising its remaining coal resources.

Exhibit A: Coal concession holders in the Tete Province of Mozambique (Source: Gardiner, 2012 – compiled from public domain information)<sup>23</sup>



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## **4 RESEARCH METHODOLOGY**

### **4.1 Introduction**

The purpose of this chapter is to describe the methodology undertaken to carry out the research and analyse the results. It begins with a justification of the research design, including the approach and method, and a description of the sampling strategy. The research instrument, in this case an interview guide, is provided, along with a description of the process followed to undertake interviews, gather meta-data and analyse the results. The limitations of the research are also discussed.

### **4.2 Research design**

The Case Study was based on qualitative research. The qualitative approach was selected as the objective of the research was to gain a deeper understanding of a complex business issue, rather than to test a specific hypothesis.

Within the broad definition of qualitative research, the case study research methodology was followed. According to Saunders and Lewis (2012), the case study strategy is “particularly good at enabling the researcher to get a detailed understanding of the context” of the research question and can yield insights which other more descriptive strategies are not able to.

The selection of the case study research methodology was also informed by the requirement to write up the research in the form of a teaching case study. Although there is a significant difference between the objectives of a teaching case and case study research (Yin, 2003), the requirement to develop a complex and rich story for the teaching case lends itself to the same kind of context-driven research that the case study research methodology proposes.

Vale agreed to participate in the development of the case study and to provide access to information and facilitate interviews with key personnel. A copy of the letter sent to Andrew de Simone, Corporate Affairs advisor at Vale is included as Appendix A.

A consistency matrix which summarises the research design is provided in Table 7.

### 4.3 Scope

Research into the importance of institutions is part of what Peng, Wang and Jiang (2008) described as “the new institutionalism” which has developed in the social sciences since the 1980s. Within this broad theoretical framework, research into the institutional view of strategy has generally been undertaken in the field of international business, or in the field of corporate strategy. The Case Study and Teaching Note were written up with the intention of being used for either of those two subjects, or in the field of general management, specifically within dynamic markets.

### 4.4 Research questions

The selection of Vale as a case study was made in order to facilitate further research into the interaction between company strategy and the institutional environment in dynamic markets. The literature on the relationship between company strategy and institutions specifically called for research which found evidence, or lack thereof, of specific aspects of the institutional framework which could actually influence strategy (Meyer, Estrin, Bhaumik & Peng, 2009).

The research thus sought to understand the interaction between the organisations and institutions in dynamic markets, through the lens of a single organisation which has expanded into multiple dynamic markets in recent times.

The research questions were therefore to:

- Describe the institutional environment in the dynamic markets in which Vale operates, and assess how this fits into the framework provided by Khanna, Palepu and Sinha (2005);
- Investigate the strategies which Vale has adopted within the institutional context and seek evidence for aspects of the institutional environment which actually influence strategy;
- Assess whether the institutional framework in which Vale operates is indeed much more than just background to their competitive strategy, and if the institution-based view can be seen as being an equal leg of a strategy tripod, as proposed by Peng et al. (2008) in a resource-seeking firm.

#### 4.5 Universe / Population

The research was largely confined to Vale, its subsidiaries, JV partners and associates. It focussed on Vale's operations and projects in one dynamic market, Mozambique, but also drew lessons from their operations in other less developing economies such as Zambia, DRC and Guinea.

As described in Chapter 1 and in the Teaching Note, the term “dynamic markets”, introduced by White (2012), has been used interchangeably with “emerging economies” in this research.

Stakeholders who were identified as being able to provide insight into the interaction between organisations and institutions included:

- Vale's Head Office and Corporate Affairs departments in Brazil;
- Vale's operational units in Johannesburg, Mozambique and Zambia, which are responsible for the day-to-day management of the interface between the company and its institutional environment;
- Government stakeholders;
- Community stakeholders;
- Competitors; and
- Industry analysts.

#### 4.6 Unit of analysis

According to Yin (2003, p. 22), the unit of analysis has “plagued many investigators at the outset of a case study”. This is because the same topic, when analysed at different units of analysis, can result in very different case studies and findings.

The unit of analysis selected was Vale's coal operations in Mozambique. The Mozambique operations were selected from Vale's other international operations in an effort to align with the research questions and objectives. Mozambique was selected as the country of analysis because it provided a case where the institutional framework had been significantly impacted by the civil war but where significant investment from large companies was currently taking place. Mozambique was thus likely to have what Khanna et al. (2005) termed “institutional voids” and those companies which chose to invest there, would have had developed strategies to deal with them. The selection of



the operations in Mozambique represents a “critical case” (Saunders & Lewis, 2012), in which the topic of interest is most likely to occur.

In order to assess what specific aspects of the institutional framework can actually influence corporate strategy beyond entry strategy, Meyer et al. (2009) thought it was necessary to investigate companies which had developed strategies to deal with formal and informal institutions such as regulatory authorities and local community structures.

Vale was selected as the company of analysis for a number of reasons. Vale was reported to be investing \$3.3 billion in Africa in 2012 alone (Campbell, 2011), the majority of which was to be in Mozambique. Also, in order to address the third research question, it was necessary to identify a company which considered institutions important and it was observed during informal discussions with Vale representatives that the organisation appeared to be particularly sensitive to the institutional environment. Finally, Campbell (2011) further reported that Vale was building rail, port and fuel-production infrastructure to support their operations in Mozambique and overcome the lack of institutions in that country.

#### **4.7 Data collection**

Two phases of data collection took place. During an initial exploratory stage, the method was predominantly archival research and semi-structured interviews with subject experts. The aim of this phase was to obtain a high-level understanding of the interaction between Vale and the institutions in the dynamic markets in which it operates.

As the case was always intended to be written up for teaching purposes, a certain amount of detail was required in order to develop the context (the story) within which Vale’s expansion unfolded. According to Mitchell (2005), it is important for the case developer to understand the kind of information provided in the case, in order to allow the case reader to analyse the case and make a decision or resolve a problem. The sources for archival research and semi-structured interviews during the exploratory phase are provided Table 4.

For this phase, the sampling method, particularly for the secondary data, can be described as accidental (Welman & Kruger, 2001), in that it depended to a large extent on the availability and survival of historical material.

**Table 4: Sources of data for the exploratory phase of research**

Source	Description	Area of research
Publicly available secondary data.	Books, academic articles, press articles, previous case studies.	Background and context to Vale's expansion.
Vale-specific public information.	Annual reports.	Detail of capital expenditure and project development.
Mozambique-specific public information.	Mineral title and mining statutes.	Mozambique mineral legislation.
Andrew de Simone	Vale Corporate Affairs.	Company-specific strategy and operational information.
Paul Antaki	Vale Exploration – Southern Africa.	Vale's exploration activities in Southern Africa.

During the subsequent descriptive stage, in-depth semi-structured interviews were conducted with industry experts, in order to investigate and provide insight into the impact of the institutions in Mozambique, and the strategies which Vale has adopted in its expansion.

Information from sources outside of Vale, such as competitors, analysts and industry professionals, provided important triangulation points. The use of multiple sources of data to corroborate evidence is more important in case research than in other methods of research (Yin, 2003, pp. 96-97).

For this phase, the sample size was relatively small – in-depth interviews were conducted with six people. The sampling method for this phase was purposive, in that the sources of data were chosen utilising the judgement of the researcher and the guidance of the subject. This decision was in light of the fact that although it was possible to obtain a complete list of all of Vale's operations (a potential sample frame), in order to obtain information which was pertinent to the research question and

objectives, and in order to obtain the necessary triangulation of information, the actual sample frame included thousands of potential stakeholders, to which access was likely to be difficult or impossible. A complete list of the interviews conducted is provided in Table 5.

**Table 5: Sources of data for the descriptive phase of research**

Source	Position	Area of research
Andrew de Simone	Corporate Affairs – Vale. Information and access facilitator.	Head office perspective of strategies relating to institutional engagement.
Vale operations	Senior manager of Vale / ARM Joint Venture (Zambia) and Vale operations in Mozambique.	Operational / regional perspective of lessons learnt from development initiatives.
Ross Gardiner	Director of Homestead Mineral Resources.	Industry analysts.
Julio Brandt	Director of Odebrecht Africa.	Triangulation of perspectives on doing business in Mozambique; the importance of informal institutions; and Vale strategy in Mozambique.
Mark Stewardson Gavin Andrews	Geologists and mineral project advisors for The Mineral Corporation.	Extensive operational experience in Mozambique.
Unnamed, experienced industry executive	Personal view	Triangulation of perspective from an industry competitor.

#### 4.8 Research instrument

Yin (2003) proposed the use of a case study protocol, which includes a summary of case study questions. These case study questions were not so much the direct questions which would be asked of interviewees, but rather a re-enforcement of the information which needed to be collected by the researcher, if the case study was to be successful, and the most likely sources of the information.

Yin (2003) acknowledged that the case study questions may well serve as a prompt for the actual questions used in an interview, but emphasised that the case study researcher needed to be adaptable enough to recognise the opportunity presented when new or unexpected information arose.

The case study protocol developed for this research is provided in Table 6. As expected, the protocol provided a useful prompt for guiding discussions, but was more useful as a tool for ensuring that all of the areas of interest were covered. As such, the number of pre-scripted questions used for this research was limited.

**Table 6: Research instrument**

Research questions	Interview guide questions	Likely information source
What characterises the institutional environment in which Vale has expanded?	<ol style="list-style-type: none"> <li>1. In what way does operating in an emerging economy differ from a developed mining economy?</li> <li>2. Describe the important institutions which impact the ability to operate in each country. Are these institutions formal, such as regulatory bodies / ministries / SOEs; or informal, such as local communities, personal networks, culture and language?</li> </ol>	Vale operations; Government and community stakeholders.
Is the institutional framework in emerging markets indeed much more than just background?	<ol style="list-style-type: none"> <li>3. Are there cases where strategy is determined, limited, or restricted by the institutional environment?</li> <li>4. Describe the infrastructure / resources which Vale applies to managing the institutional environment.</li> <li>5. Describe the infrastructure / resources applied by Vale's competitors to managing the institutional environment.</li> </ol>	Government and community stakeholders; Corporate affairs.
What specific aspects of the institutional framework can actually influence company strategy?	<ol style="list-style-type: none"> <li>6. Once the institutional landscape is identified, which part of the landscape can cause a company to change strategy?</li> <li>7. Describe investments / projects to address or take advantage of the institutional landscape, such as rail, port and fuel infrastructure.</li> </ol>	Corporate affairs; Vale operations.

Research questions	Interview guide questions	Likely information source
What strategies have Vale adopted in dealing with the institutional environment?	<p>8. Has Vale adopted strategies which have given it a competitive advantage, or have they been simply about the 'license to operate'?</p> <p>9. Are there cases where Vale has been able to influence the institutional environment?</p> <p>10. Are there cases where Vale is unable / unwilling to operate due to the institutional environment?</p>	Industry analysts; Corporate affairs.

#### 4.9 Consistency matrix

A consistency matrix is a tool utilised in research to ensure that there is consistency between the research title, the research questions, the literature review, the research instrument, and the analysis of the actual data.

As this research report was written up in a different format to the conventional report, the consistency matrix was used to ensure consistency between the title, the introduction, the research instrument, the case study and the teaching note. The matrix is presented in Table 7.

**Table 7: Consistency matrix**

Introduction	Research instrument	Case study	Teaching note
What characterises the institutional environment in which Vale has expanded?	Khanna et al. (2005); Cantwell, Dunning & Lundan (2010).	Case study questions 1 – 2.	Teaching note Table 2
Is the institutional framework in emerging markets indeed much more than just background to the competitive environment?	Hoskisson, Eden, Lau & Wright (2000); Peng et al. (2008); Porter (1981); Barney (1991).	Case study questions 3 – 5.	Teaching note Table 1

Introduction	Research instrument	Case study	Teaching note
What specific aspects of the institutional framework can actually influence company strategy?	Meyer et al. (2009).	Case study question 6.	Not clearly identified by the research.
What strategies has Vale adopted in dealing with the institutional environment?	Khanna et al. (2005); Cantwell et al. (2010).	Case study questions 7 – 8.	Teaching note – corporate strategy discussion.

The use of a consistency matrix is similar to the approach recommended by Leenders, Maufette-Leenders and Erskine (2001) for maintaining consistency in writing teaching case studies.

#### 4.10 Analytical approach

In the initial exploratory phase, secondary data and the results of semi-structured interviews were synthesised into a MindManager™ framework (example in Appendix B) which included the following themes:

- historical information;
- contextual information;
- socio-political observations; and
- observations relating specifically to the research questions.

In both the exploratory and explanatory phase of data collection, informal discussions were recorded by taking hand-written notes, while semi-structured interviews were electronically recorded. The recorded interviews were transcribed by the researcher. The process of transcription was also used to fit the contents of the interview into the same MindManager™ framework.

The first outline of the case study story was written before the completion of the descriptive phase of data collection, as was the draft teaching note. As described by

Leenders et al. (2001), the process of writing a draft teaching note is very helpful in identifying if the subject of the case study is going to have relevance to the research questions, and whether the story told in the case study contains all of the relevant facts which the teaching note can refer to in order to illuminate the research questions.

The last interviews during the descriptive stage were used to “fill-in-the-gaps” in both the case study storyline, and in theoretical aspects of the teaching note which were not sufficiently covered in the case study.

#### **4.11 Research limitations**

According to Stake (1995, p. 6) the case study, by its nature, is a poor basis for generalisation, beyond the generalisations which pertain to the case subject itself. This is particularly true when using a single case, case study. As this case focussed on a single organisation and a single business unit within the organisation its applicability outside of the case subject may be limited. However, as suggested by Yin (2003), the chances of misrepresentation can be reduced by seeking a wide variety of data sources.

The research was also limited by time and accessibility, particularly access to representatives of Vale in Mozambique. While every attempt was made to visit Vale’s operations in Mozambique, this did not materialise.

## 4.12 References

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#### 4.13 Appendix A

Andrew De Simone  
Senior Advisor  
Vale  
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Rio de Janeiro – RJ, 20030-900  
Brazil

Dear Andrew

##### Consideration of assistance towards research project

As part of my studies towards an MBA at GIBS business school, Johannesburg, I am conducting research into the business strategies of companies entering emerging markets. In particular, the focus of my research is to develop an understanding of the extent to which a country's institutional infrastructure influences business strategy. In this regard, I am particularly interested in Vale, a company which has expanded extensively into emerging markets in recent times and I hereby request your assistance in completing the research.

The research will be written up in the form of a case study for teaching purposes, and forms part of a broader initiative within GIBS, co-ordinated by my supervisor Dr. Lyal White, to develop case studies which address business issues in emerging markets. Thus, in addition to being part of my own studies, the express purpose will be to contribute to GIBS' teaching material.

In the course of developing the case, I will seek to describe how Vale has dealt with the institutional framework in the emerging markets into which it has entered. I will then try and draw learning from these experiences, which could come from successful or unsuccessful initiatives. Given Vale's size, it may well be necessary to limit the scope to a particular region, commodity or even country, but this would be discussed with you.

The case will be built by obtaining multiple viewpoints, from within and outside the subject company by means of telephonic or in-person interviews, as well as the

collection of public domain information to support the analysis. The interviews would be conducted by myself, and would be relatively in-depth and un-structured, with the objective of allowing the understanding to emerge through listening, rather than having a set of formal questions. Each interviewee would be provided with a high-level guideline ahead of time.

The type of information which I will be seeking will be largely descriptive, rather than detailed personal or financial information. I may request access to some high-level financial data in order to support the analysis, but I suspect that this will be at the annual report level.

Ideally, once a scope has been agreed, I would like to interview a few (3-5) of the senior decision makers, involved in the business strategy concerned. For example, if the scope was coal in Mozambique, I may be an idea to interview the head of that commodity, the country manager and the responsible corporate affairs advisor. I would envisage two, one-hour interviews per person, a preliminary interview, and a follow-up interview.

The case needs to be completed by the end of September 2012, and thus ideally all the data needs to be collected by the end of July. Naturally, Vale would be able to review the case prior to its finalization, and, if approved by Vale, we may seek to publish the case in a reputable publication

I trust this letter clarifies the objectives and requirements of the research, and would appreciate it if you could consider my request both to use Vale as a subject and to have access, where possible, to the information described.

Yours sincerely



Stewart Nupen

cc: Dr. Lyal White (Supervisor)

4.14 Appendix B

