

## Chapter 2 THE CHALLENGES OF MANAGING NATURAL RESOURCE WEALTH

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Revenue from the exploitation of natural resources might seem like a blessing to a new nation like Timor-Leste. But, just like winning the lottery, there are challenges in managing an influx of revenue well. When natural resource revenue is poorly managed a state can fall victim to the ‘resource curse’. The quotes in Figure 2.1 illustrate the feelings of those who have seen how countries can be cursed by natural resource wealth. Chapter One provided an introduction to the thesis, explained its focus was on Timor-Leste, and that its natural resource wealth could enable it to develop sustainably. This chapter is the first of three that explore the fundamental problem of the thesis, how to manage natural resource revenue wisely. This chapter explains the challenges of managing natural resource wealth by reviewing the academic literature on the resource curse and explaining related concepts, such as institutions, social capital and sustainable development. The following two chapters explore Timor-Leste’s institutional landscape and the Government of Timor-Leste’s plans for managing petroleum revenue, providing a specific case with which to explore the challenges of managing natural resource wealth.

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‘It [oil] is the devil’s excrement. We are drowning in the devil’s excrement.’

(Juan Pablo Pérez Alfonso, founder OPEC)

‘We are part to blame [for our country’s impoverishment], but this is the curse of being born with a copper spoon in our mouths.’

(The President of Zambia, Kenneth Kaunda)

‘All in all, I wish we had discovered water [not oil]’

(The oil minister of Saudi Arabia, Sheik Ahmed Yamani)

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**Figure 2.1** Quotes from those who have seen countries cursed by natural resource wealth  
(Ross 1999)

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The description of the challenges of managing natural resource wealth is sometimes called the resource curse literature. A country is described as having the resource curse if it exploits its natural resources (e.g. forests, minerals or petroleum) and the consequent revenue does not contribute to economic growth. Rather the revenue is misused and a range of indicators (including economic growth) decline. A superficial review of the literature gives the impression the resource curse might be inevitable when a natural resource boom occurs. However, wealthy, industrialized countries such as Australia, Canada and the United States have managed to avoid

it, and some have argued that countries like Malaysia, Indonesia, Botswana, and Chile (e.g. Rosser 2007; Vincent 1997) have also managed their natural resource wealth well. Thus, the resource curse is by no means a *fait accompli* for less wealthy countries who choose to exploit their natural resources.

There are many challenges to managing natural resource wealth well. The literature has often broadly described these challenges as economic or institutional. This chapter begins with a brief explanation of the economic challenges of a natural resource boom. Although the focus of this thesis is on the institutional aspects of the resource curse, the institutional and economic aspects are often inter-related and, as has been noted, are often difficult to disentangle (Engerman and Sokoloff 2002; World Bank 2005c)<sup>3</sup>. Here, concepts (such as Dutch disease and the resource curse) developed by economists are explained briefly, and the framework for understanding the relationship between natural resource revenue and institutions begins to develop. The two sections that follow are dedicated to exploring the institutional challenges of natural resource wealth.

The literature on the institutional aspects of natural resource wealth management is relatively recent and still evolving. This chapter explores how natural resource wealth affects the quality of institutions. There appear three main institutional challenges; corruption, resource-related conflict and natural resource revenue waste. The chapter also discusses that relationship in reverse; how institutional quality affects the management of natural resource revenue. This aspect of the relationship between institutional quality and natural resource revenue has not been investigated at length in the literature. Recognition that the pre-condition of institutional quality may impact on the management of natural resource revenue is essential to a deeper understanding of how natural resource revenue might be better managed. The reasons that corruption, conflict and revenue waste exist may not be due to the presence of natural resource revenue.

Other factors that may affect institutional quality include social and human capital. Low levels of human capital in government institutions are likely to affect the quality of those institutions (e.g. the inability to manage finance may lead to revenue waste). Social capital is also a determinant of institutional quality. These aspects of institutional quality are incorporated into the framework for managing natural resource revenue, and a more holistic understanding of the reasons why a country may be cursed, resource cursed, or achieve sustainable development evolves.

A state can choose to manage its natural resource wealth well, thereby providing the climate for sustainable development, or natural resource wealth can be managed poorly (or not managed at

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<sup>3</sup> A report by the World Bank (2005c) explained: 'Economic and political explanations are difficult to disentangle. In the course of development, economic institutions are shaped by economic incentives and opportunities, and political dynamics respond to underlying economic forces' (World Bank 2005c :311).

all) and a whole range of indicators and institutions will decline, resulting in the resource curse. Managing natural resource wealth presents challenges that are a sub-set of a whole range of other challenges to be addressed in order to achieve sustainable development. But, if the natural resource-related challenges are considered on their own, we find the literature reveals a continuum whereby a state, depending on the choices it makes and how well it meets these natural resource wealth management challenges, either contributes to achieving sustainable development or, at the other end of the spectrum, is single-handedly cursed.

## 2.1 Natural resource revenue and the economy

The discussion of the impact of wealth on society goes back to, at least, the 14<sup>th</sup> century (Stevens 2003). A broad understanding of the effect of rents (from natural resources or otherwise) is relevant to this research but belongs to a much broader analysis of the economic literature, which is not the purpose here. However, to note that a rent is a return in excess of normal profit, and that in the case of natural resources, rents are high because the natural resource is 'free', other than the costs of capital and production provides a necessary departure point.

The specific effects of an influx of natural resource wealth on an economy have been explored in the academic literature since the 1950s and 60s. In the 1950s natural resources were viewed simply as abundant, easily exploitable and a major means of capital accumulation. Ginsburg's (1957) idea that a healthy resource endowment equated to an accelerator for economic growth and potential for improvements in health and literacy has since been questioned and described as 'conventional' (Auty 1993). In the 1970s a literature specific to the effects of rents on Middle-eastern states was generated, and is known as 'rentier-state' literature<sup>4</sup>. Mahdavy (1970) explains that 'rentier states are defined here as those countries that receive on a regular basis substantial amounts of external rent' (Mahdavy 1970: 428) and he uses Iran as an example of the patterns and problems that rentier states have encountered since the mid-1950s. Mahdavy's work, like earlier literature about rent, indicated the kinds of problems that would later be described under the heading of the resource curse literature<sup>5</sup>.

The oil crisis of the 1970s led Solow (1974) and Hartwick (1977) to explore inter-generational allocation of exhaustible resources, and Gregory (1976) used the term 'Gregory thesis' to describe how a mining boom can contribute to shrinking the agriculture and manufacturing

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<sup>4</sup> Ross (1999) provides a particularly insightful summary of the key authors of this literature.

<sup>5</sup> For example, Mahdavy explained some of the problems of Iran as a rentier state: 'the mass of the Iranian people are hardly touched by the so-called development programmes... Industrialization is proceeding at a slow pace providing little opportunity for employment... considerable disparity of income and welfare between the rural and urban populations... government expenditures and programmes become increasingly dependent on oil revenues, the consumption patterns of the people are also thoroughly geared to the utilization of imported commodities... the Iranian economy remains, as before, at the mercy of fluctuations in oil prices...' (Mahdavy 1970: 465-466)

sectors. The literature on the ‘Dutch disease’ appeared with its first description in *The Economist* (Anon. 1977) and has since been widely discussed (e.g. Corden and Neary 1982; Krugman 1987; Nankani 1979). The Dutch disease occurs when a rapid influx of resource rent comes from the export of natural resources, and results in high domestic absorption and appreciation of the domestic currency<sup>6</sup>, which then affects the non-mining sectors detrimentally<sup>7</sup>. This happened in the Netherlands, in the 1960s and 70s, when the Dutch exploited their North Sea natural gas, hence the name. In response to the strengthening exchange rate, non-mining sectors (such as agriculture and manufacturing) may shrink, become less export competitive and more dependent on import protection and subsidies to maintain their importance in the economy, thereby contributing to inefficiencies. These subsidies are provided, courtesy of the natural resource revenue<sup>8</sup>. When the resource rents decline, governments can find it difficult to continue to subsidise the non-mining industries because of the decline in tax revenue and the exchange rate appreciation.

Dutch disease can lead to a state becoming petroleum-dependent and a lack of industrial diversification can impede sustainable development. Research has shown that resource-poor countries tend to be more efficient and pursue policies that maximise social welfare (Auty 2000). This phenomenon (that a lack of industrial diversification is less productive) is not new. In 1576, the French political philosopher Jean Bodin said:

Men of a fat and fertile soil, are most commonly effeminate and cowards; whereas contrariwise a barren country make men temperate by necessity, and by consequence careful, vigilant, and industrious (quoted in Sachs and Warner 1995: 4).

Further exploration reveals that Dutch Disease is part of a complex system of problems that may result from an influx of natural resource wealth. Gelb (1988) identified four critical problems in managing the mineral sector and resource booms; reduced competitiveness of the lagging non-mining tradeables sector during the booms (Dutch disease), inadequate savings during booms, the establishment of unsustainable patterns of consumption and investment during booms, and tardy adjustment to post-boom downswing. These problems revolve around the uncertainty inherent in managing natural resource wealth.

The flow of wealth from natural resources to a state is not constant; the price of the resource changes, production output varies and resources are discovered and exhausted over time. Managing natural resource wealth well takes fluctuations into account so that when there is less natural resource wealth a state can rely on its savings, built up during a boom in natural resource wealth. On the other hand, if the additional revenue from a boom is not managed well this will

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<sup>6</sup> The Dutch Guilder rose in trade-weighted terms by 16.4% between 1971 and 1977 (Anon. 1977).

<sup>7</sup> This is not how Dutch disease was originally described in *The Economist* in 1977. Amongst other differences, *The Economist* article did not specifically mention the impact on non-mining sectors.

<sup>8</sup> Willett (2002) describes subsidies as ‘artificial impediments that handicap industries’ (Willett 2002 :412).

have a three-fold effect; no savings will accrue, whatever the additional revenue was spent on will be neglected when there is less revenue to spend (such as subsidies to the non-mining sectors described above) and it will be difficult to adjust to the lower income stream. These effects result in poor, or negative, economic growth. The economic effects of poor natural resource wealth management can be further exacerbated if a state borrows (e.g. finance from international financial institutions) to fund its unsustainable consumption and generates unmanageable debt.

Discussion of the phenomenon of resource-rich countries performing worse economically than resource-poor countries had occurred for almost 20 years before Auty (1993) first described these problems as the 'resource curse'. Auty conducted a detailed examination of the political economy of six countries and their macroeconomic responses to a series of external shocks<sup>9</sup>. Auty's rationale was to investigate the suggestion that 'not only may resource-rich countries fail to benefit from a favourable endowment, they may actually perform worse than less well-endowed countries' (Auty 1993 :1). This counter-intuitive outcome was what Auty described as the basis of the resource curse. Sachs and Warner's (1995) research supported Auty's findings and the standard view of that time<sup>10</sup>, that volatility and the Dutch disease lead to the resource curse. They showed, using standard cross-section growth regressions that economies with a high ratio of natural resources to Gross Domestic Product (GDP) tend to have low growth rates<sup>11</sup>.

The work of Auty, and Sachs and Warner, is indicative of most of the economic literature on the resource curse; which is about the statistical relationship between natural resources and economic growth. However, economic growth is one of a number of indicators that may determine progress towards sustainable development. A few authors (e.g. Nankani 1979; Ross 2001) show that lower levels of social development are also evident in some countries with large natural resource wealth. Nankani (1979) also showed that income inequality was higher in resource-rich countries.

Most recently, there have been many articles (e.g. Banks 2005; Davis and Tilton 2005; Gylfason 2001; Hausmann and Rigobon 2002; Manning 2004; Stevens 2003) that review the economic literature, discuss, analyse and even offer new interpretations or results in investigating the economic challenges of the resource curse. Their methods are varied, but always quantitative or statistical, yet they all come to the same general conclusion; there is a negative correlation between natural resources and economic growth. However, there are many countries (e.g.

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<sup>9</sup> Auty (1993) used three variables in his examination; government resolve, policy choice and external shocks.

<sup>10</sup> Sala-i-Martin and Subramanian (2003) regard Sachs and Warner as having a 'commonly held view' (Sala-i-Martin and Subramanian 2003 :5).

<sup>11</sup> The percentage of exports from natural resource wealth which defines a resource-rich state, which might be at risk of the resource curse, varies. Nankani (1979) describes a mineral economy as one which generates at least 40% of its export earnings from minerals, whilst Stevens (2005) identifies countries at risk of resource curse as those whose natural resource exports exceed 30%.

Australia, USA, Norway) whose experience contrasts with this finding, which suggests the resource curse is not purely an economic dilemma.

## 2.2 Natural resource revenue and institutional quality

The impact of natural resource revenue on an economy reveals only part of the problem of the resource curse. Recent research on the resource curse has focussed on how an influx of natural resource revenue may affect institutional quality. Natural resource revenue may strengthen or weaken the quality of an institution. Depending on the type of institution, the effects of natural resource revenue on institutional quality may contribute to the resource curse. These effects will be explored in this section.

North is the author of one of the most widely referenced books on institutions<sup>12</sup>. North (1990) describes institutions as ‘the rules of the game in a society or, more formally, the humanly devised constraints that shape human interaction’ (North 1990 :3). North places great emphasis on the role and impact of institutions:

In consequence they [institutions] structure incentives in human exchange, whether political, social or economic. Institutional change shapes the way societies evolve through time and hence is the key to understanding historical change. (North 1990 :3)

Institutions can be classed as formal and informal. Formal institutions are usually externally enforced, such as laws (e.g. property rights), treaties, conventions, rules (of engagement) and policies. Sometimes organisations (e.g. universities) are regarded as formal institutions however Dovers (2005) makes the following distinction<sup>13</sup>:

Organisations are manifestations of institutions, such as specific departments, associations, agencies, and so on. In some cases, an organisation may be persistent, recognisable and influential enough to be regarded as an institution, but generally organisations can be more quickly dissolved or radically changed whereas an institution is more durable. (Dovers 2005 :12)

Informal institutions are conventions or rules that constrain individual behaviour or ‘structure social interactions in a particular way’ (Knight 1992 :54). Examples of informal institutions are corruption or forming a queue. These kinds of rules imply there is a consistency of individual expectation. However, as informal institutions include social and cultural institutions, it follows that such expectations are bound within social and cultural constraints. Therefore they may not transcend specific community or state boundaries and the same may be said for some formal institutions.

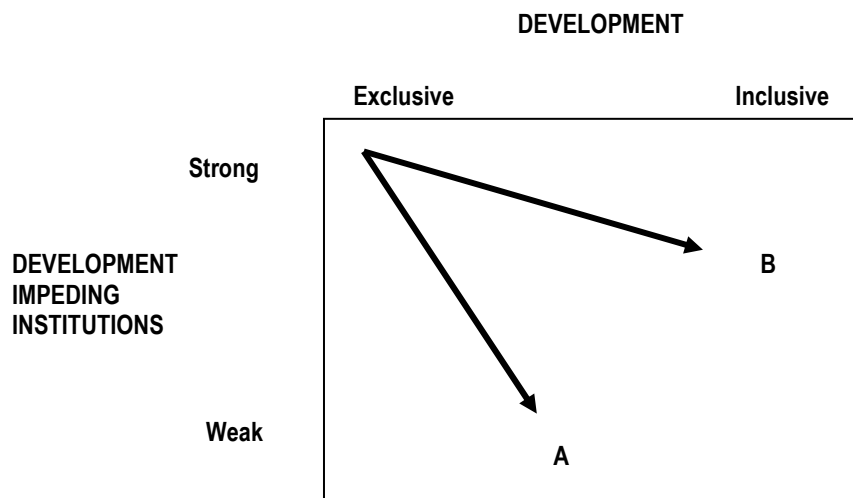
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<sup>12</sup> North’s (1990) book, *Institutions, Institutional Change, and Economic Performance*, has 425 citations on the *EconLit* database.

<sup>13</sup> North (1990) also makes a distinction saying organisations have a role as the agents of institutional change and argues that institutional change hinges on this distinction.

The quality of an institution can vary from weak, unpredictable and not able to withstand pressure, to strong, with the qualities of persistence, or robustness, and predictability. By their nature, institutions that are strong ‘reduce uncertainty by providing a structure to everyday life...[and] guide human interaction’ (North 1990 :3). Strong institutions result in compliance and conformity, which are qualities that are essential in productive institutions designed to achieve sustainable development. However, there are some institutions (e.g. corruption) that have negative effects. When institutions with negative effects are strong, it may be difficult to prevent the resource curse. This section illustrates that natural resource revenue may strengthen the very institutions that have negative effects on sustainable development.

Institutions that actively erode other institutions that enable sustainable development, are known as Development Impeding Institutions or DIIs (Grafton and Rowlands 1996). Figure 2.2 expresses Grafton and Rowlands’ vision of the relationship between the strength of DIIs and the quality of development. Lines A and B, in the figure, represent alternative development paths. Both paths demonstrate that a move towards inclusive development (in which most of society benefits) requires some weakening of DIIs.



**Figure 2.2** Development Impeding Institutions (Grafton and Rowlands 1996 :263)

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Institutions, both destructive and productive, can be weakened or strengthened. However, the time it takes to change an institution varies, depending on its strength. Matthews (1986) talks about an inertia that is inherent in some institutional change because such institutions have evolved, over time, to be strong:

None of these [institutions] would serve much purpose if they were continually changing.  
Institutional arrangements are about interpersonal relations... [When change occurs]

Previous arrangements have to be undone, possibly arrangements that were arrived at after long bargaining with many people. Trust has to be recreated. (Matthews 1986 :913)

Sometimes institutional change occurs at a glacial pace. Sometimes, change can come quickly, such as changing a contract or a law (although this generally follows a period of negotiation or lobbying). People are integral to the process of creating, changing, sustaining and dismantling institutions. People who benefit from an institution are likely to behave in ways that perpetuate that institution. 'Some people are always likely to lose from an institutional change and these vested interests are continuously being recreated as long as the institution remains in force' (Matthews 1986 :914). Institutions that sustain vested interests of people with power are likely to be strong. Strong institutions that serve a few self-interested individuals are likely to be informal and destructive. Thus, not all strong institutions will have a positive effect on sustainable development. On the contrary, it may be these kinds of institutions that cause the resource curse.

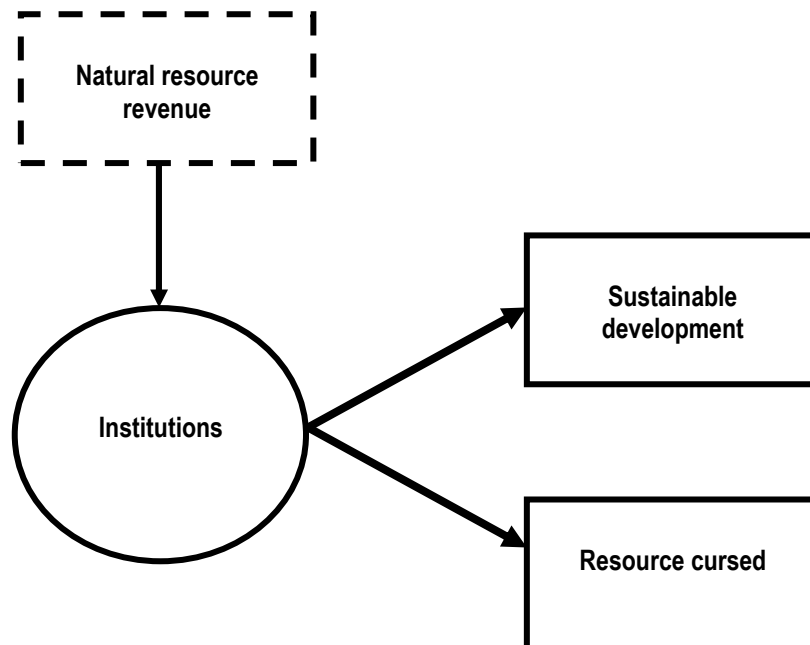
The institutional literature on the resource curse confirms that institutions in some resource-rich countries are weaker than institutions in countries without great natural resources wealth (e.g. Auty 1993; Mauro 1997; Mehlum et al. 2002; Robinson et al. 2002; Ross 2001; Sala-i-Martin and Subramanian 2003; Woolcock et al. 2001). From this literature, Woolcock, Pritchett et al. (2001) identified two groups of research, one coming from economic research on 'social' issues and the other, social research on 'economic' issues. Matthews (1986) remarked:

[In the last few decades] the economics of institutions has become one of the liveliest areas in our discipline. It has, moreover, brought us more closely in touch with a number of other disciplines within the social sciences. A body of thinking has evolved based on two propositions: (i) institutions do matter, (ii) the determinants of institutions are susceptible to analysis by the tools of economic theory. (Matthews 1986 :903)

The examination of the relationship between the resource curse and institutional quality has, to date, largely been based on an economic analysis of social issues, whilst this thesis falls into the other group, of social research on economic issues. Although the institutional challenges of managing natural resource revenue had previously been considered, it was Sala-i-Martin and Subramanian (2003) who suggested the impact of natural resource wealth on institutions is the sole reason for poor growth and the development of the resource curse, rather than Dutch disease or other economic factors. This may explain why some resource-rich countries avoid the resource curse. Today the institutional literature on the resource curse is more abundant than the economic literature. Woolcock et al. (2001) explained the value of incorporating 'social' issues:

The poor performance of countries with abundant natural resources can be explained using orthodox economic tools, but ... a more comprehensive picture emerges when social and political factors are also taken into consideration. (Woolcock et al. 2001 :76)

Ross (2003), Sala-i-Martin and Subramanian (2003), and Woolcock et al. (2001) have illuminated the economic analysis of the resource curse with their social and political insights, which reveal that an influx of natural resource revenue can influence formal and informal institutions, and lead to either sustainable development or the resource curse, or somewhere in between. This basic view of the impact of natural resource revenue on institutions is illustrated in Figure 2.3. This figure forms the basis of a framework for a more detailed understanding of the relationship between natural resource revenue and institutions. This framework will develop as this chapter progresses. However, the ways in which natural resource revenue impacts on institutional quality will be explored in detail first.




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**Figure 2.3** A basic view of the impact of natural resource revenue on institutions

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The institutional literature on the resource curse can be divided into three themes; rent-seeking and corruption, resource-related conflict, and natural resource revenue waste. These themes are not absolutes as not all countries face the same challenges in managing their natural resource wealth. The way in which a state responds to each of these challenges, and how successful it is in managing each challenge, will determine whether they are closer to establishing a climate for sustainable development or being resource cursed.

### 2.2.1 Rent-seeking and corruption

Rent-seeking is when an individual or a group searches for ways in which they might benefit by manipulating the institutional environment to their own advantage, as opposed to participating in established and legitimate means of creating wealth. Rent-seeking may negatively affect those who would otherwise benefit from normal means of wealth production by detracting from the value that would otherwise be attributed to them. Similarly to the discussion about rent in section 2.1, rent-seeking is not a phenomenon that is specific to natural resources. Krueger (1974) coined the term ‘rent-seeking’ with no specific regard to natural resource revenue. Also of relevance, Bhagwati (1982) developed the concept of directly unproductive profit-seeking (DUP) activities:

[DUPs are] ways of making a profit (i.e. income) by undertaking activities which are directly unproductive; that is, they yield pecuniary returns but, do not produce goods or services that enter a utility function directly or indirectly via increased production or availability to the economy of goods that enter a utility function. (Bhagwati 1982 :989)

Bhagwati (1982) gives examples of DUPs as ‘lobbying for protection, competing for a share of industrial or import licenses, inducing legislatures to enact monopolistic barriers to domestic entry, utilizing resources to evade “price” or “command” governmental regulations, etc.’ (Bhagwati 1982 :988). There is some cross-over between the concepts of DUPs, rent-seeking and corruption<sup>14</sup>, but their commonality is that they all have the potential to negatively affect institutional quality and sustainable development. Rent-seeking is closely related to corruption in the sense that corruption also diverts returns from those who would otherwise benefit from normal means of production. However, where corruption is generally illegal<sup>15</sup>, rent-seeking may be a legitimate, legal activity performed (perhaps even encouraged) by a state, sometimes even benefitting the greater good (in which case it would not be regarded as a DUP).

Today the literature that links rent-seeking, corruption and natural resources is now common (e.g. Bannon and Collier 2003; Mauro 1997; Mehlum et al. 2002; Robbins 2000; Robinson et al. 2002; Woolcock et al. 2001; World Bank 2003a). Tornell and Lane (1999) established that resource-rich economies are more subject to rent-seeking and corruption than resource-poor economies. Natural resource wealth provides incentives for rent-seeking behaviour and corruption that generate an environment which perpetuates these institutions. Resource-rich countries that have few or no other industries give educated and talented individuals few legitimate opportunities for personal wealth creation. The result is that they may be tempted to

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<sup>14</sup> The *Oxford English Dictionary* defines corruption as the ‘perversion or destruction of integrity in the discharge of public duties by bribery or favour; the use or existence of corrupt practices, *esp.* in a state, public corporation, etc.’.

<sup>15</sup> Corruption has a cultural context and there are occasions where a person from one country, or culture, may view a transaction as corrupt whilst someone from another country, or culture, might see the same transaction as simply the way business is done, and therefore not illegal. A strict definition of corruption is, therefore, one which relates to its cultural context.

participate in institutions that benefit themselves over others. In such an environment individuals may be lured to participate because rent-seeking and corruption appear more beneficial to the individual compared to production by normal means (made difficult because productive institutions have been eroded or weakened). The outcome of these activities is a state where wealth is diverted to the hands of a few and the divide between rich and poor widens<sup>16</sup>. This divide is further exacerbated by the fact that some resource industries are not labour intensive (i.e. not many jobs are created by these industries).

As discussed earlier, strong institutions can have negative effects (and erode other institutions) and corruption is a good example of such a destructive institution. Robbins noted that 'Corruption is an institution, not the absence of one' (Robbins 2000 :439)<sup>17</sup>. Corruption is an informal institution. Rent-seeking and corruption are institutions that can erode or destroy other productive institutions (such as transparency and accountability); they are destructive institutions. For example, constant fighting over resource rents may result in political instability and shorter political timeframes (e.g. as in Bougainville, Papua New Guinea). In such an environment, the quality of democratic decision-making is reduced and the democratic institutions of government begin to decline (such as the long-established formal conventions around government purchasing which may be worn down by the destructive rent-seeking behaviour that contrasts with them).

As these destructive institutions solidify and sustain the rich, the divide between rich and poor increases and life becomes more difficult for the poor and for those trying to develop or maintain democratic institutions. Some of the literature explores this phenomenon and suggests that a wider diffusion of wealth is more conducive to democratic institutions (Woolcock et al. 2001). As the game of rent-seeking is played out, participation in democratic, legal and political institutions becomes more like hard work and less appealing, whilst corruption becomes more appealing. Thus, the institutions of rent-seeking and corruption are self-perpetuating and worse, rent-seekers may exert influence to ensure the economy remains natural resource-dependent and retard attempts to diversify the economy (so that they can continue to extract rents). The further they destroy the legitimate productive institutions the more rent-seekers are likely to benefit. In addition, rent-seekers may create institutions to justify and sustain their rent-seeking. For example, a corrupt government may put in place legislation that legitimises rent-seeking in

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<sup>16</sup> Collier (2001) reported that between 1965 and 2000 Nigeria received around US\$350 billion (at 1995 prices) in revenue. Yet during this time the overall per capita income of its citizens did not improve. The work of Sala-i-Martin and Subramanian (2003) also showed that Nigeria's natural resource wealth did not benefit everyone. In Nigeria, in 1970, the top two percent and the bottom 17 percent of the population earned the same total income. In 2000, the top two percent earned the same total income as the bottom 55 percent.

<sup>17</sup> Robbins (2000) is intimating here that corruption is sometimes regarded simply as an eroding force rather than an institution. Corruption is regarded as an institution for the purposes of this research, not so that it has status, but so that it can be distinguished from other institutions as informal and destructive within the framework which evolves.

some way, or at an informal level, pay-backs may become part of the fabric of doing business<sup>18</sup>. Once the rent-seeking environment is established and the divide between rich and poor is further widened, re-building or creating those necessary formal and productive institutions becomes more difficult<sup>19</sup>.

A lack of transparency can be beneficial in perpetuating these institutions. Where institutions are weak and total resource revenue wealth is not publicly known, it is easier for those in power to take money from the public for their own personal gain, bribes or other illegitimate uses. Nigeria provides an unfortunate example of a country cursed by its natural resource wealth, largely because of corruption<sup>20</sup>. In 2005 Nigeria was ranked 154<sup>th</sup> of 159 countries included in Transparency International's Corruption Perception Index (Transparency International 2005)<sup>21</sup>. The institutions of transparency and accountability can retard the opposing forces of destructive institutions, such as rent-seeking and corruption.

## 2.2.2 Resource-related conflict

Natural resource wealth can be the cause of conflict and there are numerous examples of long and bloody civil conflict over resources (e.g. oil and the Biafran war in Nigeria or the Panguna Copper mine in Bougainville, Papua New Guinea<sup>22</sup>). Natural resource wealth is often linked to violence and conflict (e.g. Bannon and Collier 2003; Collier and Hoeffler 2002; Mkandawire 2002; Ross 2001; Sala-i-Martin and Subramanian 2003). Collier and Hoeffler (in Sala-i-Martin and Subramanian 2003) showed that a country which has no natural resources faces a probability of civil conflict of 0.5 percent, whereas a country with natural resources-to-GDP share of 26 percent faces a probability of conflict of 23 percent. Bannon and Collier (in Banks 2004) also found that a country with primary commodity exports of 5 per cent of GDP had a risk of civil war in the next five years of 6 percent, whereas a country with primary commodity exports of around 25 percent of GDP had a 30 percent risk of civil war in the next five years.

The reasons for conflict over natural resources are varied. One source of natural resource-related conflict is establishing who owns the rights to the resources. If natural resources are shared across groups, or property rights are not well defined, resulting frustration can lead to violence and conflict. Conflict over property rights may be entwined with longer-term property claims (unrelated to natural resources), but the natural resources provide a further incentive for conflict,

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<sup>18</sup> In Nigeria, 'Large windfall oil profits corrupted Nigeria's institutions and changed its politics, which came to be shaped by the incessant fight over resource revenues' (World Bank 2005c :310).

<sup>19</sup> 'Poorer countries lack the resources to police corruption effectively, and poverty itself breeds a greater willingness to go around the rules' (Krugman and Obstfeld 2000 :683).

<sup>20</sup> For a more detailed explanation of natural-resource related corruption in Nigeria read Sala-i-Martin and Subramanian (2003).

<sup>21</sup> For the purposes of comparison it is noted that Australia ranked 9th (Timor-Leste was not ranked in that year).

<sup>22</sup> For further detail about the Panguna mine in Bougainville and the resource curse see Brown (2005).

often to the extent of demanding a separate state and causing civil war (e.g. West Papua in Indonesia, or Sudan).

Migration arising from natural resource-related employment can also be a cause of conflict due to social disintegration. Banks (2005) talks about migration caused by resource industries changing the social landscape and disrupting community cohesion<sup>23</sup>. Vincent (1997) agrees the process is socially disruptive, but it might be inevitable and in fact economically efficient when resource-extractive industries are the only viable ones in a region. Banks (2004) mentions that economic migrants are often held responsible for social pathologies such as drinking, gambling and prostitution. Prostitution may also lead to an increase in sexually transmitted diseases. Grievances over problems such as these could provide further incentive for conflict. Migration may also occur as a result of the destruction of the environment and violations of human rights that are sometimes perpetrated by governments or companies that exploit natural resources. In order to flee from persecution or when livelihoods (generated by environmental resources) have been destroyed, migration may follow.

Just as corruption is self-perpetuating, conflict is too. More conflict leads to further instability and uncertainty which then affects political time frames (which is another example of a strong destructive institution eroding a democratic institution). Conflict can also escalate due to natural resource wealth because the revenue can be used to purchase weapons. Resolving natural resource-related conflict is difficult and complex not only because of the instability but also because the challenges of natural resource-related conflict are country, and sometimes even community-specific. Banks (2005) points out that most of the literature about natural resources and conflict uses African countries as examples, and the solutions are not always applicable in the Asia-Pacific region. Banks (2004) specifies the Melanesian case and argues that this poses a unique natural resource dilemma because of the importance of identity and social relationships being inextricably linked to land and natural resources. The literature suggests there are no generic solutions and that the causes of natural resource-related conflict are unique to each case.

There is, however, a factor that is common to most natural resource-related conflict. Conflict often follows from the exploitation of natural resources on land, rather than offshore. For this reason, the resource curse literature, which has regard to conflict over natural resources, could be said to have a terrestrial exploitation bias. Wars are often fought between countries over access to natural resources that might be located off-shore however the context of this discussion is the resource curse literature, so international conflict will not be discussed here. In any case, the literature does not appear to distinguish between countries whose resources are exploited on-shore and those whose are exploited off-shore. In the latter scenario, communities would be less likely to fight over ownership of the resources and they would be more likely to

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<sup>23</sup> 'The impact of this migration is perhaps the most devastating of all the effects of large-scale mining in Melanesia, largely because of its effects on the core pillar of Melanesian identity: social relationships' (Banks 2004 :7).

be regarded as communal or state assets. Thus, the problem of conflict over resources may be less likely to occur if the resources are located offshore. Unfortunately, there appears to be no literature that explores this distinction.

### **2.2.3 Natural resource revenue waste**

Much natural resource revenue is wasted simply because the quality of formal institutions and mechanisms to manage the revenue are weak. Spending an influx of natural resource wealth is tempting, particularly when the amount is above annual budget expenditure requirements. When there is extra liquidity, it would appear legitimate to spend the extra revenue, and there may be pressure to do so, yet rash decisions and poor expenditure may not achieve long-term goals (e.g. saving for future generations when the natural resource is exhausted) let alone sustainable development. In some respects, having an influx of natural resource wealth is similar to an individual winning the lottery; the revenue is seen as a bonus and thereby wasted because it is spent without regard for the future.

At the heart of the challenge of managing natural resource wealth well is planning, and the human capital to execute those plans. At the core of planning is projecting the amount of natural resource income and how it will be allocated. Auty (1993) remarked ‘The estimation of permanent income is exactly what the Governments of mineral economies have been unable to perform well’ (Auty 1993 :25). The flow of natural resource income is, by its nature, difficult to predict because there are many variables (e.g. market price, production plans, exploitation of fields, and the amount of resources) which are all subject to change, and these changes are often exogenous. Frequently too much optimism surrounds the estimates of natural resource income and a situation arises where a state spends a windfall on the assumption that further revenue will be forthcoming, and when estimates are not met expenditure can not be sustained.

There are many references to the need to extract and expend natural resources and the income they generate in a sustainable manner. Solow’s (1974) definition of intergenerational equity (per capita consumption remains constant over time) has been used by Hartwick (1977) to generate a rule that has regard to investment of the rents from exhaustible resources for the purpose of intergenerational equity. The meaning of sustainable development within the context of this research will be explained later in this chapter so here it is simply noted that wasted natural resource revenue affects not only current generations, but may indeed have a greater impact on future generations<sup>24</sup>. Managing natural resource wealth well requires consideration of the variable nature of the flow of natural resource income. That is, when there are peaks in natural

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<sup>24</sup> This is the case in Nauru where the natural resource revenue boom of the 1970s was mismanaged and Nauruans today are much worse off.

resource income, revenue should be saved (or used to generate further income) for the times when there will be troughs in natural resource income (i.e. saving for future generations).

Part of the reason for poor planning is because of public pressure to spend and politicians responding to this pressure because of short political time-frames. Unfortunately, projects are often undertaken because of their immediate income-generation potential rather than any long-term benefit (Auty 2000). Often the amount spent on projects is larger than the additional revenue provided by the natural resource income. This problem was highlighted when Dutch Disease was first discussed; The Netherlands had run up a large budget deficit because gas revenues on their own were not enough to finance the increase in government spending (Anon. 1977).

Another reason natural resource revenue is wasted is that, in some cases, there is little, or no, institutional capacity or human capital to manage finance. Or, the institutions may have the capacity, but they may not be designed to manage the scale of wealth. For example, an administration designed to run a government based on a budget of \$100 million could not be expected to execute a budget of \$500 million the following year. A lack of human capital may also be blamed for poor expenditure decisions. With an influx in revenue there is the temptation to invest in physical capital and infrastructure, but states often over-invest to the point where projects provide little economic return (sometimes called 'white elephant projects'<sup>25</sup>). An example is the temptation to establish a resource-based industry (such as a national oil company) when the economy is not ready or does not have the human or trade potential to do so effectively. Such projects may not bring economic return if the domestic capacity does not exist and, particularly if such projects are subsidised, they may not be internationally competitive in the long term.

Another temptation is to increase spending on budget items in response to pressure from the public. One example is when public pressure calls for extra civil service positions, perhaps because of high unemployment. If no real need exists and positions are created this can result in an unproductive civil service. This is a politically appealing way to distribute rents (Auty 2000) as is increasing transfer payments such as pensions, and unemployment payments (Anon. 1977). Another appealing way to spend natural resource revenue is on the purchase of arms, and this is often reported in the literature (e.g. Mkandawire 2002; Ross 2001, 2003). This problem is, of course, inter-related with the challenge of managing resource-related conflict and the waste of natural resource revenue provides the community with yet another grievance that could cause

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<sup>25</sup> Sala-i-Martin and Subramanian (2003) talk about Nigeria's over-investment in physical capital resulting in poor productivity. In Nigeria, state institutions made poor decisions about what to spend petroleum revenue on. The revenue was spent but, there was nothing to show for it. As an example, the 'famous' Ajakouta steel complex was built in the 1970s but, until the time of writing (33 years later) had not produced a ton of steel.

further conflict. The potential for conflict (whatever the reason for it) would be limited if the Government did not fuel the conflict by purchasing arms.

The other way in which natural resource revenue leads to waste is because there is little incentive for a country with an abundance of natural resource wealth to gather taxes:

When government must finance its activities through general taxation, it must interact and negotiate with taxpayers, giving citizens greater opportunities for holding their leaders accountable. But, having funds available from natural resources, especially when production involves a concentrated few, enables government leaders and others with de facto control to pursue their own agenda. (World Bank 2003a :151)

This has a two-fold impact; the Government's accountability and responsiveness to its citizens is weakened, and less revenue is generated. Generating less revenue from other industries means the Government becomes even more dependent on natural resource revenue and therefore more vulnerable to volatility in natural resource income.

Stevens' (2005) review of how countries have avoided the resource curse suggests that planning, expenditure and human capital are central to the solution. Botswana is often used as an example of a country that has managed its natural resource wealth well and Stevens says Botswana instilled fiscal discipline and adhered to its development plan to develop physical and social infrastructure, which included spending much on social services. Stevens (2005) also posits that highly competent senior bureaucrats (who form groups) are also a factor common to countries that have successfully avoided the resource curse (in Chile they are called 'the Chicago Boys', in Indonesia they are 'the Berkeley Mafia' and in Malaysia they are 'the Backroom Boys').

Capacity or human capital (the skills and knowledge of workers which contributes to productivity) is a factor that several authors (e.g. Gylfason 2001; Manning 2004) have identified as influencing economic growth. Human capital is required to manage natural resource wealth well and Manning (2004) argues that low levels of human capital can have a negative effect on the management of natural resource revenue resulting in a lower rate of (or decline in) economic growth. Manning suggests that this factor may be more detrimental than natural resource wealth itself:

Low levels of human capital in resource-rich countries serve as a transmission mechanism that creates the resource curse. Thus, low levels of human capital directly hinder economic growth in resource-rich countries, not the actual natural resource endowment. (Manning 2004 :76)

This can be explained further by considering the difference between giving \$500 to someone saving for their first family car and giving \$500 to someone who has a drug habit. The car buyer is likely to manage the influx of wealth well because they have the systems in place for managing their wealth and the interests of others (as well as their own) in mind, whereas the

drug user is likely to spend the \$500 immediately, without consideration of the long term effects of that decision. Similarly, civil servants who are experienced and educated are more likely to manage natural resource wealth well. Woolcock (2001) described the kind of institutional and human capital that is needed to manage natural resource wealth well:

Coherent, credible, and competent public institutions that are simultaneously actively engaged with the day-to-day affairs of their constituents... skilled employees who can relate to their colleagues, yet are also openly accountable for their actions, able to make timely responses to crises and opportunities alike, and are in touch with the ongoing concerns of those they feign to serve. (Woolcock et al. 2001 :80)

So far this chapter has explained the three themes of the institutional resource curse literature; rent-seeking and corruption, resource-related conflict and natural resource revenue waste. Natural resource revenue can have a deleterious effect on achieving sustainable development because of the way it affects institutional quality. However, there are other factors that determine institutional quality (and sustainable development for that matter). Natural resource revenue is managed by institutions, therefore, there must be an iterative relationship between institutions and natural resource revenue. That is, whilst natural resource revenue impacts on institutional quality, at the same time it must be that institutional quality determines how well natural resource revenue is managed.

### **2.3 Institutional quality affects management of natural resource revenue**

Section 2.1 explained that natural resource wealth may affect economic growth and sustainable development. Section 2.2 then explained that research on the resource curse suggests the problem with natural resource wealth may in fact be its impact on institutional quality, which, in turn, affects economic growth and sustainable development. However, there are many other variables in determining economic growth and sustainable development. Woolcock, Pritchett et. al. (2001) noted some other growth-reducing factors: ‘...isolationist trade policies, deficient public services, unfavourable geography, political instability, lack of financial depth, high aid dependence, and low social capital’ (Woolcock et al. 2001 :79). If a country has natural resource wealth and experiences corruption, conflict or revenue waste it does not necessarily follow that it is ‘resource-cursed’ because the poor institutional quality that leads to growth reduction may be for other reasons. The exploration of the distinction between a ‘curse’ (which bears all the hallmarks of a natural resource curse but, is not a corollary of natural resource wealth) and a ‘resource curse’ is an area of theory that has been given less attention in the resource curse literature.

Where institutions are already weak the effect of natural resource wealth on their quality might be to improve or to have negligible effect on them. Where institutions are strong they may actually prevent the resource curse. The World Bank's research supports this finding:

The importance of institutions has emerged as a key aspect of the debate. In the context of a viable social contract, based on widely agreed formal and informal rules for the allocation of resources and the settlement of grievances, institutional arrangements can be sufficient to restrain opportunistic behaviour and the violent expression of grievance. (World Bank 2003a :148)

If productive institutions are weak and destructive institutions are strong, the reasons for this institutional environment must be clearly identified, so that institutional effects resulting from an influx of natural resource wealth are distinguished from institutional effects resulting from other factors. Further, we need to understand what lies at the heart of strengthening productive institutions and weakening destructive institutions.

### **2.3.1 Distinguishing natural resource wealth-related challenges**

Distinguishing whether factors that lead to economic stagnation or institutional decline are the result of natural resource wealth, or other factors, is difficult. A country may be cursed by corruption, conflict or poor revenue management, but these are not intrinsic to natural resource wealth. Indonesia, for example, experiences corruption and conflict, but is considered, by some, one of the countries that has avoided the resource curse (e.g. Rosser 2007). Stevens (2005) mentions this difficulty, of determining the source of a countries' problems being natural resource-related or not, but this difficulty is not addressed thoroughly in the literature. This section will explore a range of challenges that may also contribute to economic decline in resource-rich economies or render them more vulnerable to the resource curse.

A country with high levels of poverty may be retarded in its attempts to stimulate economic growth because poverty relates to low levels of education. Poverty and low literacy rates would be another cause of limited capacity within the civil service. Increased rates of poverty in a population may also be the cause of civil conflict (Ross 2001) and if a government is simultaneously poor and can not afford to pay its civil servants well, relative to the private sector, this may be a cause of corruption<sup>26</sup>.

To complicate matters further, aid (or donations) can have effects similar to an influx of natural resource wealth. Poor countries are likely to be those that receive aid and where those countries also exploit natural resources, in some cases, it would be difficult to discern whether the weakening of institutions resulted from the aid contributions or the natural resource wealth (or

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<sup>26</sup> 'Low wages in the civil service relative to wages in the private sector are a source of low-level corruption. When civil service pay is too low, civil servants may be obliged to use their positions to collect bribes as a way of making ends meet, particularly when the expected cost of being caught is low' (Mauro 1997 :5).

the poverty). There is increasingly more research about the similarities between the effects of aid and natural resource wealth (Moss and Subramanian 2005; World Bank 2003a)<sup>27</sup>. Both are sources of revenue that provide proportionally large amounts of revenue in return for little effort and both lead to economic difficulties (affecting the exchange rate, problems with absorption, etc.) and institutional decline (corruption, poor financial management and waste, etc.) ultimately benefiting the rich more than the poor. There are a couple of pertinent differences between aid and natural resource wealth though. Aid is more often spent within transparent frameworks because of donor requirements (with the strength of the donors' institutions supporting the expenditure rather than a state's). Further, aid can be directed, somewhat, by external and potentially independent actors who may be able to exert some influence over the way in which that revenue is managed<sup>28</sup>. Moss and Subramanian (2005) note:

The role of strong public institutions in providing the framework for long run development is well-established. Economists and donor agencies have all come to recognize that institutional development is a key determinant of development success... Donors have been increasingly selective in skewing aid toward countries thought to have institutional environments best able to utilize new funds. (Moss and Subramanian 2005 :3)

Conflict is another challenge that may contribute to economic decline, but may not be natural resource related. Mkandawire (2002) said 'While the focus on raw materials in some of Africa's major wars has usefully drawn attention to the need to cut off the access of rebel movements to these "conflict" resources... they are not the cause of the wars' (Mkandawire 2002 :207). Conflict may arise for many reasons, which may not be related to natural resources. Thus, the battle for control of resource rents must be distinguished from ethnic or religious tensions, for example. As discussed previously, conflict can impact on the strength of institutions and given some 'institutions are known to exhibit stubborn persistence' (Sala-i-Martin and Subramanian 2003 :18) it follows that institutional inadequacies may arise from past conflicts. So states that are attempting to rebuild their institutions (post-conflict states) are automatically vulnerable, regardless of their potential natural resource wealth. Similarly, states that have been released from colonial ties, particularly where the coloniser neglected to invest in the local institutions, will be struggling to develop their institutions and will be vulnerable.

Distinguishing non-natural resource related grievances from rent-seeking is a theme that has only recently developed in the literature. Whilst some (Berdal and Malone 2000; Collier and Hoeffler 2000) make a distinction between greed and grievance, Hausmann and Rigobon (2002) point out that greed is not specific to resource-rich economies. Thus, the term 'rent-seeking' will

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<sup>27</sup> Subramanian has written on the effects of both aid and natural resource wealth with essentially the same findings.

<sup>28</sup> Actors involved in donating to natural resource projects are increasingly being asked to consider 'should donors contribute to natural resource projects where institutions are known to be weak?' This question has been given particular currency in recent times because of the failure of the Chad pipeline. A discussion has centred on whether donors have a duty of care in deciding whether to invest in proposed natural resource exploitation (see Horta n.d.).

be used instead of greed. Regardless of the terminology used, Collier and Hoeffler say that conflict may arise for reasons which are not related to seeking natural resource rents and these instances should be distinguished from those which are resource-related. Banks (2005) gives examples from Melanesia where conflict has arisen from communities' grievances with resource operators and these grievances are not about access to money. Banks adds that in the case of Bougainville 'no amount of money would satisfy their grievances' (Banks 2005 :187). Another example of resource-related grievances may be conflict arising over who has control over decision-making.

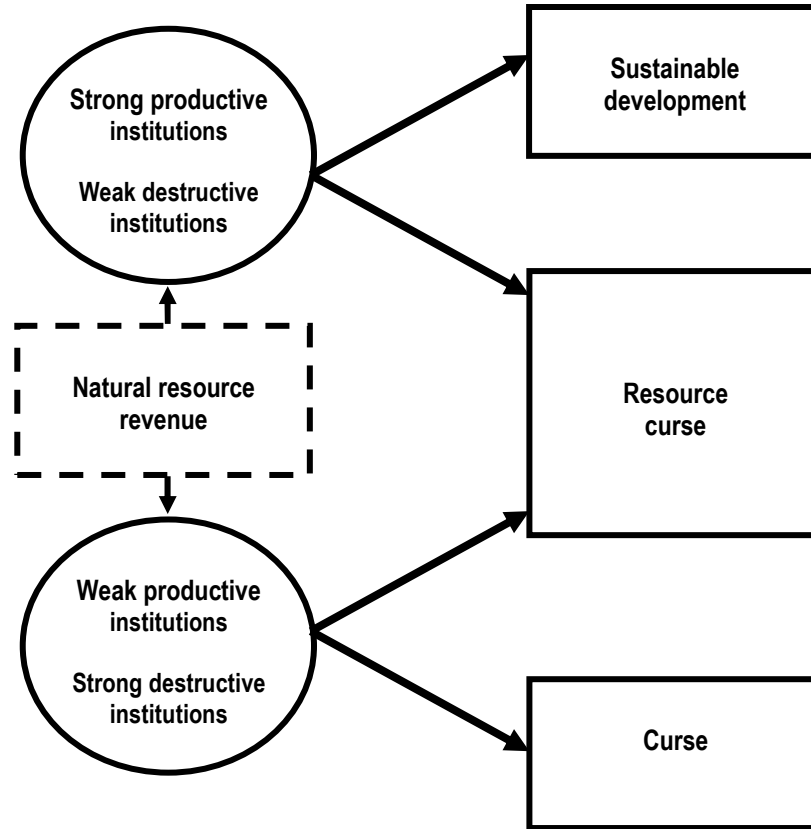
As a result of the discussion so far in this section, the simplistic nature of the way in which the relationship between natural resource revenue and institutions has been viewed in the past can be understood. This traditional view (which was depicted in Figure 2.3 on page 19) assumes institutions were stable and effective when an influx of natural resource revenue occurred, and had the potential to divert a state to become resource cursed. As the discussion has illustrated, institutions are not necessarily stable or effective when the natural resource revenue impacts. Figure 2.4 accounts for the condition of institutions prior to an influx of natural resource revenue. This new framework is cognisant that a country may be 'cursed' irrespective of its natural resource wealth.

If a country has strong productive institutions and weak destructive institutions it is more likely to already be on the path to sustainable development. In this scenario, an influx of natural resource revenue may divert a state to be resource cursed (the traditional view). However, if a state is already cursed, and its productive institutions are weak and its destructive institutions are strong, then it is unlikely that natural resource revenue will enable sustainable development. Rather, a state will either continue to be cursed, or if the natural resource revenue inhibits the productive institutions, and strengthens the destructive institutions further, then it may be resource cursed. Natural resource revenue may be able to change a state from being cursed, or resource cursed, to one that enables sustainable development, but it would need to address the other mitigating factors that caused the institutions to be cursed initially.

Sala-i-Martin and Subramanian (2003) suggest that getting the management of natural resource wealth right could contribute to improving institutional quality, and the World Bank (2003) suggests that a state can take advantage of resource rents to promote inclusiveness in access to assets and encourage social cohesion and institutional development. However, it is hard to imagine natural resource revenue, alone, being the 'manna' from heaven that resolves a state's institutional deficiencies.

The pre-existing quality of institutions is important to an understanding of how natural resource revenue impacts on a state. This leads to the question of what other factors may contribute to institutional quality. The discussion, so far, has indicated that human capacity or human capital

is one of the key factors contributing to institutional quality. Social capital is another factor contributing to institutional quality.



**Figure 2.4** The impact of natural resource revenue when institutional conditions are considered

### 2.3.2 Social capital and institutional quality

The final contributor to institutional quality that will be explored in this chapter is social capital. If institutional quality is the key to managing natural resource wealth well, then what makes institutions strong or robust must be understood. The literature on social capital is relevant to this exploration of the challenges of natural resource wealth yet there are few authors who give anything more than a cursory mention of social capital in exploring the resource curse despite the obvious relevance to the phenomena explored in section 2.2.

‘Social capital’, according to Putnam (1993; 1995)<sup>29</sup> who is most synonymous with the relevant literature, constitutes three features of social organisation that facilitate coordination and

<sup>29</sup> Putnam declares that Coleman (1988) deserves primary credit for developing the social capital theoretical framework.

cooperation for mutual benefit (social networks such as voluntary associations, moral obligations or norms, and shared values such as trust). Although many refer to social capital in the way Putnam exposes it, there are a variety of definitions<sup>30</sup>. Others (e.g. Bourdieu 1980; Coleman 1988; Fukuyama 2001) may explain it differently, and from different disciplines (sociology, economics or political science)<sup>31</sup>. However, this thesis is not about social capital so its precise definition is not as important as its inherent relevance and connection with our understanding of institutional quality. Hence, reviewed here are the concepts of social capital relevant to managing natural resource revenue well<sup>32</sup>.

The crucial point is that our understanding of social capital has close connection with our understanding of institutions, and informal institutions in particular. Knowles (2005) explores this connection and identifies social capital as a concept similar to what North (1990) defined as an informal institution and suggested, therefore, that social capital was part of an institutions continuum. This is reflected in the World Bank's (2003) perception of social capital and institutions illustrated in Figure 2.5. Some authors (e.g. Harper 2001; Stanley 2005; World Bank 2003a)<sup>33</sup> have called social capital the 'glue' that enables cooperation. Social capital might also be understood as a will or desire to participate in informal institutions, such as networks, norms, and conventions (like standing in a queue) or traditions, because of trust, shared values or expectations. Social capital is regarded as the 'stuff' that enables participation (in both formal and informal institutions) and in that sense it can be seen as a pre-condition for participation, and therefore a necessity for generating productive institutional strength and managing natural resource wealth well.

Social capital requires those participating to have faith or confidence in something (perhaps an institution) or someone. Reserves of social capital are built up as a result of repeated interactions. Knowles (2005) notes that social capital can be eroded quickly and Putnam (1995) notes social capital takes a long time to build. When reserves of social capital are drawn on and the result or outcome is negative (e.g. you trust your brother to mind your wallet and he spends your money) the stocks of social capital are depleted and there may be less will to participate in the future. Similarly, positive outcomes generate greater stocks of social capital, resulting in increased participation. Informal institutions (such as networks, norms and conventions),

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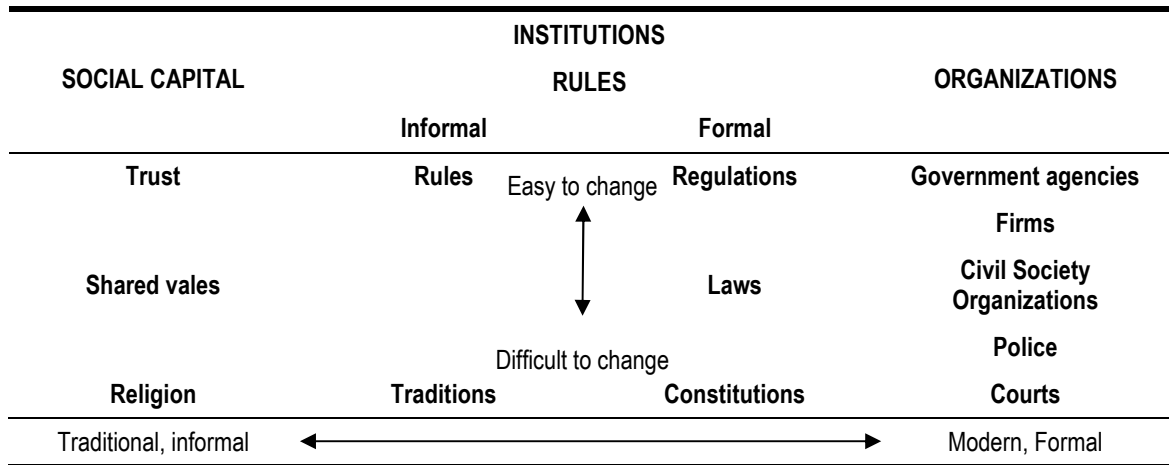
<sup>30</sup> Siisiainen (2000) explains the difference between Putnam and Bourdieu's perception of social capital.

<sup>31</sup> Fukuyama (2001) describes social capital as 'an instantiated informal norm that promotes co-operation between two or more individuals. In the economic sphere it reduces transaction costs and in the political sphere it promotes the kind of associational life which is necessary for the success of limited government and modern democracy' (Fukuyama 2001 :7).

<sup>32</sup> Reviews of the social capital literature are undertaken by Harper (2001) and Stanley (2005).

<sup>33</sup> The Website of the World Bank (n.d.-b) defines social capital as 'the institutions, relationships, and norms that shape the quality and quantity of a society's social interactions... not just the sum of the institutions which underpin a society, it is the glue that holds them together'.

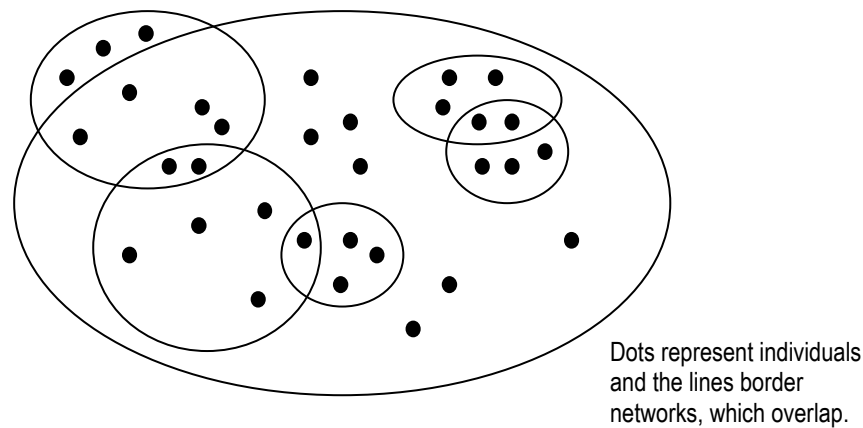
however, can not be eroded so quickly. The norm of forming a queue and corruption are examples of informal institutions that might be difficult to erode.



**Figure 2.5 Social norms, rules and organizations for coordinating human behaviour (World Bank 2003a :38)**

Figure 2.5 indicates that trust is a form of social capital, but there are varying views on the relationship between trust and social capital in the literature. Depending on which view you support, trust can be a form of, or an outcome of social capital. Regardless, the literature suggests there are different types or levels of trust. Putnam (1993) and Offe and Fuchs (2002) refer to thick and thin trust; thick trust is the trust you have in those you interact with regularly (more intimate social networks) and thin trust is the trust in those that you do not know or know less well, sometimes called generalised trust (such as in other community members). Fukuyama (2001) talks about the concept of ‘radius of trust’ and the idea that individuals inhabit different networks of trust, some radii being larger or smaller than the group itself. Fukuyama’s (2001) networks of trust are presented in Figure 2.6. Fukuyama describes how (what shall be described as) an ‘imbalance of trust’ can have negative consequences:

In many Latin American societies, a narrow radius of trust produces a two-tier moral system, with good behaviour reserved for family and personal friends, and a decidedly lower standard of behaviour in the public sphere. This serves as a cultural foundation for corruption, which is often regarded as a legitimate way of looking after one’s family (Fukuyama 2001 :12).



**Figure 2.6** Networks of trust (Fukuyama 2001 :9)

Offe and Fuchs (2002) observe that trust is the ‘absence of fear or suspicion concerning the likely behaviour of others’ (Offe and Fuchs 2002 :191). Thus, very thick trust within a group where there is little or no thin trust in outsiders can cause problems, as can the loss of opportunity for interaction with members outside a group and the benefits that interaction can bring (information, communication and economic development, etc.). Fukuyama (2001) explains the effect of this phenomenon:

At best, this [lack of social capital] prevents the group from receiving beneficial influences from the outside environment; at worst, it may actively breed distrust, intolerance, or even hatred for and violence towards outsiders (Fukuyama 2001 :14).

The different types of social capital have also been classified to denote a kind of proximity (Harper 2001; Knowles 2005). ‘Bonding’ social capital refers to that which occurs in close (homogenous) groups, such as families or members of religious organisations. ‘Bridging’ social capital is that amongst distant friends, colleagues and some associations. The concept of ‘linking’ social capital applies where individuals or groups have a hierarchical relationship to each other, such as interactions between an individual and a state. Figure 2.7 combines the concepts of radii of trust (borrowed from Fukuyama) and the different types of social capital from the perspective of an individual’s interactions both within groups and with other individuals or groups. Depending on an individual’s context the groups, or other individuals, would be placed at different lengths (from the individual) and at different levels of social capital. So each individual’s version of this figure would reflect their cultural and social difference. Some individuals may feel less connected to family than members of their local sporting club for example. Trust and relationships are essential to the strength of institutions, whether they are productive or destructive, and thus individuals and their interactions with institutions are important. As Matthews (1986) was quoted earlier in this chapter, institutions are about inter-personal relationships. Thus the individual is the focus of Figure 2.7.

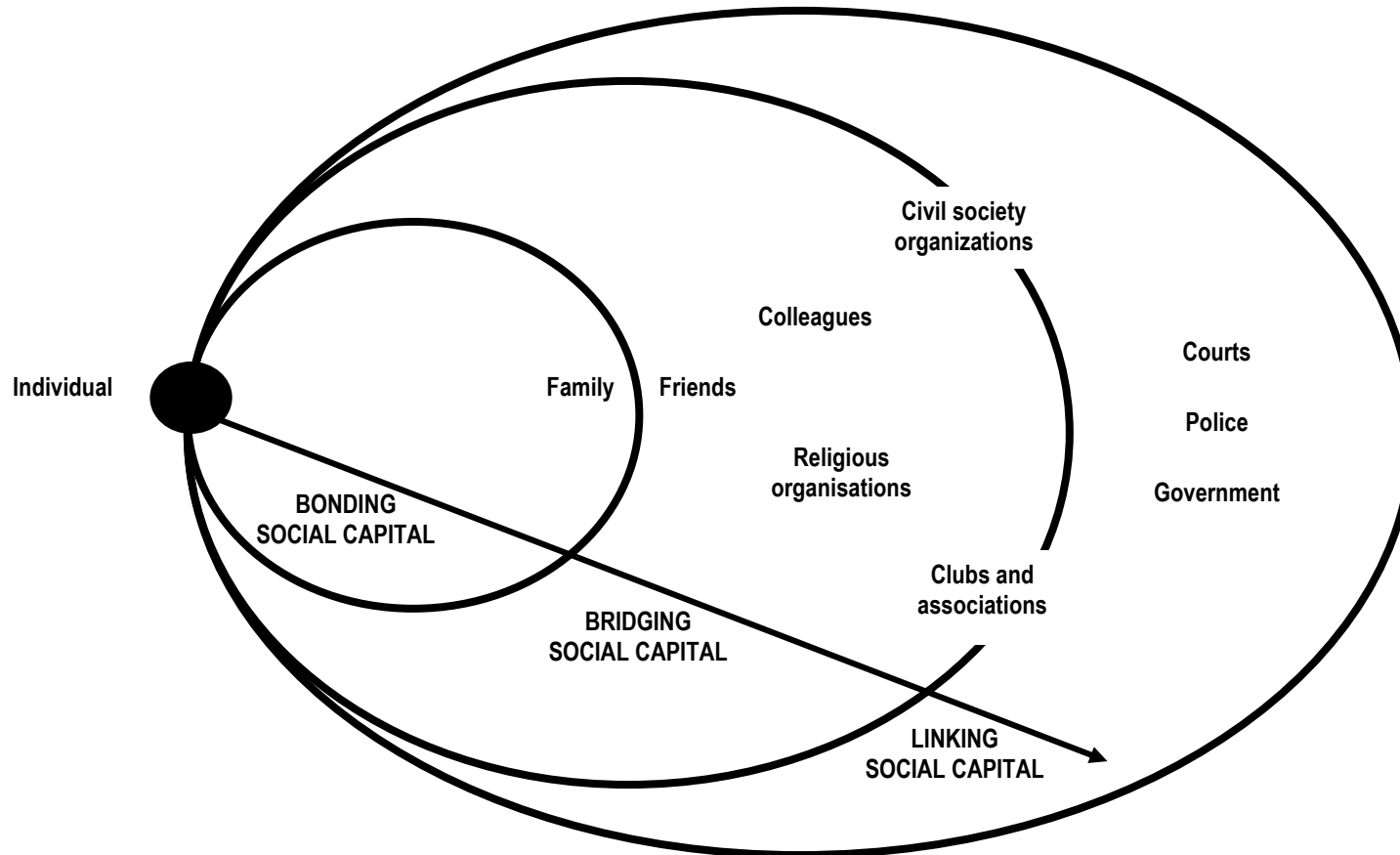


Figure 2.7 Forms of social capital depicted within radii of trust

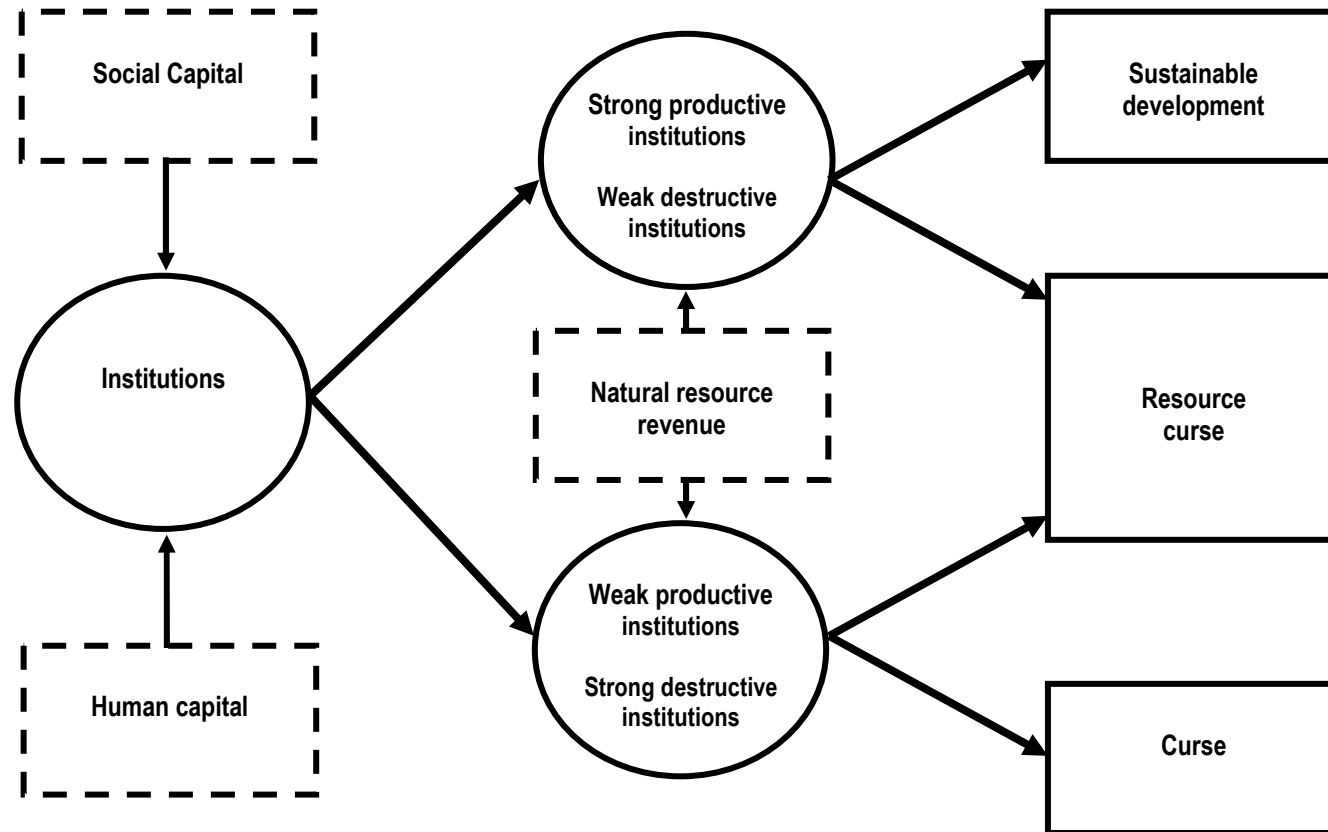


Figure 2.8 A framework for understanding the relationship between natural resource revenue and institutions

The discussion, so far in this chapter, has highlighted ways in which peoples' interactions are crucial to the success of managing natural resource revenue well. Given that human capital is also crucial, it is necessary to include both these aspects into the framework. Figure 2.8 (on the preceding page) illustrates the framework for understanding the relationship between natural resource revenue and institutions when social and human capital are incorporated. This is the framework on which the analysis used in this thesis is based. The figure illustrates that social and human capital, which shall sometimes be referred to as 'the two caps', are important to understanding in what circumstances natural resource revenue can enable sustainable development. When the capacity of individuals is minimal and the social capital between civil society and government is lacking, productive institutions, such as transparency and accountability might be weak. This section closes with a discussion about participation, which will provide insight into a practical application of the framework.

### **2.3.3 Participation and managing natural resource revenue**

Participation is an indicator of social and human capital (the 'two caps'), and also a measure of the strength or weakness of an institution. If an institution exists, an individual will participate if they have trust in the institution, and if they have the capacity to do so. This is an important aspect of managing natural resource revenue. If individuals participate in the productive institutions that are established to manage natural resource revenue, the institutions will be strengthened. If social capital, or trust, in those productive institutions is lacking, the institutions will have less successful outcomes.

In theory, a democracy provides opportunities for individuals to participate, to have access to information, and allows differing viewpoints to be heard. A corollary and a benefit of a democracy is that individuals, through opportunities for repeated interaction, have the opportunity to judge information and make decisions of their own volition. One of the most crucial relationships in a democracy is that between individuals and a state. But, this relationship requires social and human capital to enable participation. The 'two caps' are important in managing natural resource wealth well because, although a state establishes the productive institutions that determine the way in which revenue is saved and spent, it is the role of non-state actors to participate in those institutions. An individual can only participate in those institutions if they trust the State and the institution, and they have the capacity to participate.

When a state develops 'good' relationships with its constituents through establishing mechanisms that encourage participation, and individuals respond by participating actively, this augurs well for the wise management of natural resource wealth. An example of an institution that encourages participation is consultation. Where consultation is sincere it provides a valuable opportunity for a state and individuals to cooperate and generate decisions (or policies, laws, etc.) that reflect a range of interests larger than those of the public servants. A productive

consultation indicates the existence of social and human capital. However, Pratchett (1999) explains there is a relationship between public participation and representative democracy, and if the objective of undertaking a consultation is to enhance or supplement democracy then it must be both representative and responsive. A sincere consultation is therefore one that attempts to be both representative and responsive. Regular definitions of, and mechanisms for, consultation tend to focus on representation (rather than response). The World Bank and others have adopted the following definition of public consultation:

The process of engaging affected people and other interested parties in open dialogue through which a range of views and concerns can be expressed in order to inform decision-making and help build consensus. To be meaningful, consultation should be carried out in a locally appropriate manner, for example with information in local languages distributed in advance. (World Bank n.d.-a)

The aim of consultation is generally to ensure that a wide range of views (including minority opinions) is considered, and that the outcome reflects consideration of those views. However, sometimes, as in circumstances where the issue is technical, and individuals do not have the capacity to participate in a way that contributes to the outcome, the primary benefit of consultation is that it provides an opportunity for individuals to learn about the issue. If a state is cognisant of the lack of human capital it may not expect participation to deliver contributions to decision-making. However, the opportunity for repeated interaction and cooperation between individuals and a state, which consultation offers, can create stronger institutions.

Similarly, social and human capital are essential to the success of institutional mechanisms to ensure transparency and accountability. A state can establish mechanisms of transparency, but if the outcomes are not seen, or not understood, then they can not be actively observed, and a state can not be held to account. Unfortunately, in poor countries, literacy and low standards of education result in a lack of human capital, which can mean that there are few individuals that have the capacity to hold the Government to account. The mechanisms of transparency and accountability are weakened further if the observers do not have faith in, or trust, the mechanisms, or the State. These are not reasons to avoid establishing institutions of transparency and accountability. On the contrary, institutions of transparency and accountability can enhance social and human capital. Dovers (2005) writes:

Transparency and accountability are prime antidotes to the emerging problem in modern systems of government of declining trust in public institutions. In a policy domain requiring long-term collaboration between government and non-government players such as sustainability, cynicism, erosion of trust, or even uncertainty as to why policy and management outcomes have not been satisfactory, represent serious risks. Where there will be instances where secrecy or confidentiality may be warranted to protect privacy or commercial interests, this should be the exception rather than the norm... Participation,

transparency and accountability are linked, and all are determinants of policy success and failure. (Dovers 2005 :158)

Transparency and accountability require participation, but they also rely on some forms of social capital. A lack of trust in the State can be exacerbated by an imbalance of different types of social capital. In section 2.3.2, a distinction was made between bonding (between an individual and family members) and linking social capital (between an individual and the State). If stocks of bonding social capital are large, family members may distrust outsiders (resulting in poor stocks of linking social capital). Such close ties between a public servant and his family and friends within the context of weak institutions (indicating a lack of linking social capital) may result in nepotism (e.g. appointing family members to state positions or winning tenders) or corruption (as the individual's priority is to look after those close to him rather than the public he was appointed to serve). When there is a lack of linking social capital, state institutions are likely to be weak. When productive institutions are weak, strong destructive institutions (e.g. corruption) are likely to thrive. Putting in place productive institutional mechanisms is just the first step to ensure wise natural resource revenue management. The greater challenge is to ensure that social and human capital that supports those productive institutions is developed.

## **2.4 The sustainable development context**

The final section of this chapter provides an understanding of sustainable development within the context of this research. Sustainable development has many definitions and natural resource management (or environment) is given varying status amongst them. Thus, it is necessary to specify the realms of what themes will be explored within this thesis. This research assumes that sustainable development is the goal of any state, in this case Timor-Leste. This immediately distinguishes this research from that which uses economic growth as its reference point. Often, particularly in the economic literature, institutional quality is regarded in terms of its effect on economic growth, however this presents a limited view of the world and does not reflect the wider goals of sustainable development.

The most commonly held understanding of sustainable development comes from the World Commission on Environment and Development. Sustainable development is defined in 'the Brundtland Report' as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (World Commission on Environment and Development 1987 :87). The report explains that sustainable development contains within it two key concepts:

The concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs. (World Commission on Environment and Development 1987 :87)

By implication, sustainability is about the finite nature of the earth's resources and the question of when and how much natural capital is depleted. Economic approaches suggest that natural capital can be substituted by human capital thereby 'maintaining' capital as a whole and achieving sustainable development (sometimes called 'weak' sustainability):

Mainstream economists consider that sustainable development based upon the exploitation of finite mineral resources is feasible, despite the apparent contradiction, provided there are practical substitutes for the depleting natural asset. The critical assumption is that sustainability does not require that the natural resource be passed on to future generations. After all, the natural resource may be rendered worthless by the discovery of superior resources elsewhere or technological substitutes. Rather, sustainability requires that the capacity to sustain the income stream from the mineral asset needs to be passed on to future generations. This calls for the income generating capacity of the depleted mineral to be replaced with alternative wealth-generating assets (for example, factories or an educated workforce) (Auty 2003 :9).

An alternative (perhaps less practical) view is that any reduction in natural capital that can not be regenerated means sustainable development can not be achieved. This research is about petroleum revenue which means that it is taken as given that natural resources will be exploited, and therefore the concept of sustainable development used in this thesis is aligned with the former (i.e. natural capital is substitutable) rather than the latter (i.e. any reduction in natural capital is not sustainable development).

Dovers (2005) points out that the term 'sustainability' has many and varied definitions, but as it is a 'higher order social goal' (like democracy, equity, public health or justice) it does not require a definition to make progress towards its achievement:

Higher order social goals such as democracy or justice are still being argued about and pursued, centuries after they emerged, even though in modern societies they have far more substantial institutional and policy underpinnings than the goal of sustainability has. (Dovers 2005 :9)

Thus, if action can proceed without agreement of a rigid definition, then the goal of sustainable development can be approached (as opposed to remaining in a static or degrading state). This research is limited to exploring management of petroleum revenue in Timor-Leste. Thus, there are two principles or themes of sustainable development that are more relevant. First, sustainable development requires that both the needs of current and future generations are considered. The concept of needs is particularly pertinent to this research because 'needs' (as opposed to wants) are clearly better satisfied in the developed world than in countries, such as Timor-Leste, where food, shelter and protection from conflict are not satisfied. In this sense, as a state, Timor-Leste has a different balance to other countries when it comes to servicing this generation versus future generations' needs. Thus, questions of how much of the natural resource stock to exploit, and when, require a different approach and the World Commission on

Environment and Development definition (above) acknowledges this difference by referring to 'the world's poor'. Thus, sustainable development, in this research, is about the sustainable development of Timor-Leste, the State, and does not consider the global, or specifically environmental, dimensions of sustainable development. In this sense it is appropriate to ask the East Timorese what their needs are, and this is where the value of the research lies.

The second theme of relevance to this research is that information is crucial to sustainable development, and as a corollary, relationships are also crucial. Thus, the link between the themes of transparency and participation (highlighted earlier) and the goal of sustainable development is apparent. Even more important, if information is not known or available, is the need to act conservatively. That is, in terms of satisfying future generations' needs, without confirmation of (or at least some kind of information about) the future availability of stocks of natural or other capital, it is necessary to judge whether current stocks should be depleted (without reducing the amount of stocks available for future generations).

In summary, and in terms of Timor-Leste's sustainable development, it is necessary to exploit petroleum resources to generate revenue to establish and maintain the state of Timor-Leste but, as this chapter has shown, the management of petroleum revenue has its challenges and even if revenue does not disappear as a result of corruption or conflict, it is crucial that the way in which it is managed has regard to both current and future generations. The needs of current generations of East Timorese are not being met at this time, but at the same time the natural resources available are finite and the stocks are not enormous. Either some natural resources must be conserved, or some must be converted to financial capital so that future generations may benefit and their needs are also met. Unfortunately, determinations of the wealth of current natural capital, the value of its wealth upon exploitation and its potential wealth in the future are inexact, and by their nature unknown. Thus, an element of conservatism in planning and managing Timor-Leste's petroleum revenue is warranted.

This chapter has outlined the challenges of managing natural resource wealth. Natural resource wealth may contribute to sustainable development or to a resource cursed state depending on how well that wealth is managed. A state may be 'cursed' (that is, it may face the challenges of conflict, corruption and financial mismanagement and experience a decline in economic growth and other indicators) regardless of how well its natural resource wealth is managed. There are paths that lead to sustainable development and there are paths that lead to a state being cursed (by natural resource wealth or otherwise).

The literature on the resource curse has evolved from being economically focussed to that which explores the issue from an institutional (sometimes called social) perspective. Avoiding the resource curse is not simply an economic challenge. Institutional quality is perhaps more crucial in determining whether a state can avoid the resource curse, both because natural resource revenue affects the quality of institutions and because the quality of institutions affects how well

natural resource revenue is managed. Stocks of social and human capital, the 'two caps', are essential to establishing strong institutions, and building understanding and relationships between individuals, or civil society, and the State. The State is at the core of the solution to managing natural resource wealth well, and enabling sustainable development, but civil society also has a role to play.