La'o Hamutuk
Timor-Leste Institute for Development Monitoring and Analysis
Rua dos Martires da Patria, Bebora, Dili, Timor-Leste
Tel: +670 332 1040 Email: info@laohamutuk.org Website: www.laohamutuk.org

Can the Petroleum Fund Exorcise the Resource Curse from Timor-Leste?

By Charles Scheiner*

June 2015

Introduction

Oil and gas comprised 76.4% of Timor-Leste's gross domestic product (GDP) in 2013 (RDTL GDS 2015) and provided more than 93% of state revenues in 2014.[1] Most of the money from selling off non-renewable petroleum wealth has been saved in the Petroleum Fund — a sovereign wealth fund containing $17 billion. People expect the Fund to finance state activities after the oil and gas fields are exhausted, which could happen within five years, but the Fund may be empty by 2025. Timor-Leste has about a decade to use its finite oil resources to underpin long-term prosperity and development.

This article gives an overview of the consequences of Timor-Leste's reliance on its limited oil and gas reserves, focusing on its impacts on economics and decision-making. It explores how effectively Timor-Leste's Petroleum Fund, established in 2005 with extensive guidance from international agencies, can prevent or ameliorate some of the most serious consequences of the resource curse — the negative impacts of non-renewable resource wealth on citizens of most countries which depend on exporting petroleum and mineral wealth.

I draw on research and analysis by the Timor-Leste Institute for Development Monitoring and Analysis, also known as *La'o Hamutuk*, an independent Timorese civil society organisation founded in 2000 to support the country's political and economic sovereignty, from the perspective of social and economic justice. It analyses reports and proposals from government, international agencies and other sources, compares them with observations and other data, and uses its findings to enhance public and leaders' understanding of the context and likely consequences of policy options. In addition to using published documents, *La'o Hamutuk* consults with officials, experts, practitioners, and researchers. It also advocates for policies and programs that will equitably benefit Timor-Leste citizens both now and in the future.

Published statistics and international comparisons involving Timor-Leste are often inaccurate or inconsistent, frequently confusing total GDP with non-oil GDP, even though it is four times larger *(La'o Hamutuk* 2014b; cf. RDTL GDS 2013, 2014a and 2015d). This makes it challenging to understand

---

* The author is a researcher at *La'o Hamutuk*. An abridged, earlier version of this paper was published by Australian National University as SSGM In Brief 2014/29, and another version is published in Ingram, Kent and McWilliam, 'A new era: Timor-Leste after the UN' ANU press, 2015.

[1] During 2014, Timor-Leste received $1,817 million from oil and gas revenues and $502 million from investing the Petroleum Fund, including unrealised stock price changes (CBTL 2015). Non-oil state income totalled $184 million, of which a significant portion was paid by the state to itself (RDTL MoF 2014; 2015a). Oil revenues dropped 49% from 2012 to 2014, and therefore comprise a smaller percentage of the shrinking total of state revenues (*La'o Hamutuk* 2015c).

whether contradictions and retroactive revisions come from improved data or methodology, political motivation, or agencies' reluctance to differ with the government.[2]

Oil swamps the economy

Timor-Leste relies on its petroleum exports more than every nation except South Sudan, Libya, and, perhaps, Equatorial Guinea. However, this dependency is not due to vast oil and gas reserves or high production rates, but because the non-petroleum economy, which scarcely existed when independence was restored in 2002, is still very small.

Although 23.6% of Timor-Leste's $5.6 billion GDP has been categorised as 'non-oil', about half of this is generated by state spending for public administration, procurement, and infrastructure construction. Since oil money provides the lion's share of state revenues, this will evaporate when the wells dry up. The private sector and consumer-driven portions of the economy — agriculture, manufacturing, and local commerce for businesses and individuals — average less than $2 per citizen per day, although most citizens make do with far less than the average.

Table 1. Gross Domestic Product in 2013[3]

	(million USD)	
Total GDP	**$5,596**	
GDP from Petroleum Sector	$4,276	76%
Non-oil GDP	$1,319	24%
Of which: Productive GDP (agriculture and manufacturing)	$265	5%

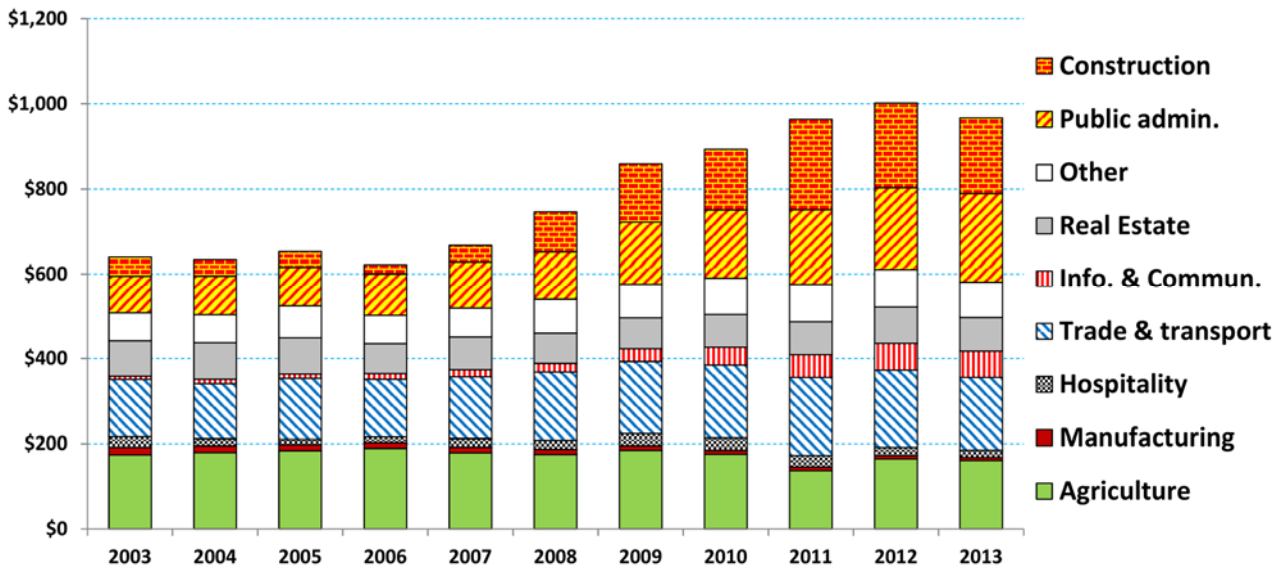
Source: RDTL GDS 2015d.

Government officials have been proud that the non-oil GDP is growing at 'double-digit rates' (RDTL Prime Minister 1-Apr-2014, 3; *La'o Hamutuk* 2014b; Global Insight 2014, 6), but virtually all of this growth represented rising state spending. When state spending slowed in 2013, non-oil GDP growth virtually stopped. The productive parts of the economy — agriculture and manufacturing — are only 4.7% of total GDP. After adjusting for global inflation and population, these sectors shrank by 13% from 2007 to 2013 (RDTL GDS 2015d). By comparison, public administration and construction (largely paid for with public money) increased 90% and 347% during the same six years (RDTL GDS 2015d).

[2] For example, in December 2013 the IMF estimated that Timor-Leste's total GDP increased by 5.7% between 2011 and 2012 (IMF 2013). Eight months later, however, Timor-Leste Government statistics stated that it had *declined* by 10.4% (RDTL GDS 2014a), and in June 2015, the Government reported that the 2012 GDP increased by 5.5% over 2011 (RDTL GDS 2015d). During 2014, UNDP and the World Bank also published misleading or incorrect data on Timor-Leste (UNDP 2014; 2014a), and the government prevented the IMF from publishing its annual Article IV report on the country because of disagreement over the report's content.

[3] Total GDP per capita declined 16.7% in 2013 (RDTL GDS 2015d) because oil production and revenues began to drop. As non-oil GDP was essentially unchanged in 2013, the percentage of total GDP from petroleum is declining.

Figure 1. Sectoral contributions to Timor-Leste's 'non-oil' GDP per capita in 2013



Source RDTL GDS 2015d.

Nevertheless, state agencies and the small middle and upper classes have money to spend, and the absence of convenient local products leads them to purchase goods and services from overseas, as shown in Table 2.

Table 2. Balance of external trade, 2013

	(million USD)	
Goods (excluding petroleum sector)	**-$497**	
Imports	$519	96%
Exports	$22	4%
Services	**-$1,458**	
Imports	$1,536	95%
Exports	$78	5%
Total trade deficit	**$1,955**	

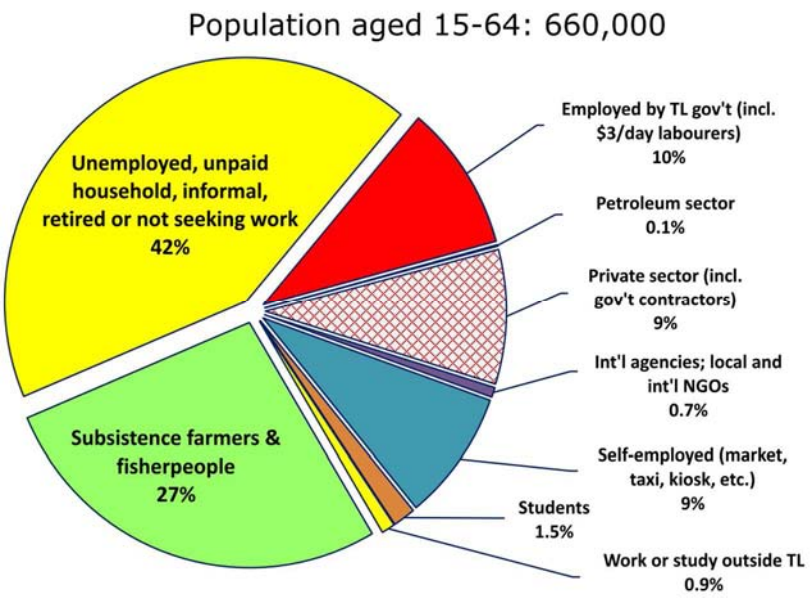
Sources: RDTL GDS 2015d

Unfortunately, trade is less diverse and more import-heavy than the numbers show. Most of the exported non-oil goods are coffee, whose value fluctuates with the weather and the global market. More than half of exported services are 'travel' — tickets on foreign airlines sold in Timor-Leste.

Prioritising short-term purchases over sustainable national development results in extreme import dependency. About half of state spending immediately goes abroad, and individuals make little effort to spend in the local economy. Chickens are imported from Brazil, rice from Vietnam, eggs and beer from Singapore, fruit juice from Cyprus, onions from Holland, garlic from China, milk from Australia, and so on. In 2014, more than $116 million went to Indonesian suppliers for a variety of goods including water, candles, cigarettes, instant noodles, sugary drinks, and canned fish. Although a few agencies advocate 'local content', almost nobody weighs economic sovereignty when deciding what to buy. Current and pending free-trade policies make it even harder to cultivate local production. As oil and gas revenues tail off, there will be little cash to pay to foreign suppliers, and imports will become unaffordable. Without local food production, people will starve.

Counting people rather than dollars tells a different story. Timor-Leste is an agricultural country, and most households live mainly by subsistence farming.

Figure 2. What do Timorese people do for work?



Sources: RDTL MF 2015a; RDTL GDS 2013b; 2015b; 2015c; La'o Hamutuk research and estimates.

The formal economy, both public and private, employs less than a third of the working-age population. Only 9% of the working-age population works for companies, and less than one-fiftieth of those jobs are in the petroleum industry. As the International Monetary Fund explains, *'The oil and gas sector is the mainstay of the economy … However … the sector directly accounts for virtually no on-shore employment. Its economic impact is entirely via government spending'* (IMF 2013).[4] During 2013, total private sector employment declined because of reduced government spending on infrastructure, although the number of working-age people increased by about 18,000 (RDTL GDS 2015b; 2015c).

Oil fuels the state machinery

As Table 3 shows, more than 90% of Timor-Leste's government revenues are from oil.

Table 3. Sources of income in the 2015 General State Budget

	(million US$)	
Projected revenues (including those deposited into the Petroleum Fund)	**$2,461**	
Revenue from oil and gas exports[5]	$1,374	56%
Return on Petroleum Fund investments	$916	37%
Non-petroleum (domestic) revenue sources	$170	7%
Budgeted sources for financing state expenditures	**$1,570**	
Withdrawn from the Petroleum Fund during 2015	$1,327	85%
New loans (to be repaid mostly with petroleum money, if it still exists)	$70	4%
Non-petroleum (domestic) revenues	$170	11%

Source: RDTL MoF 2015.

About $25 million of the $170m in 'domestic revenues' will come from taxes paid by the state to itself (such as import taxes paid by companies working on state-financed projects). Another $19 million will be the gross receipts of the highly subsidised public electricity system, which recovers only 20% of its operational costs from users and uses oil income to cover its operating deficit and capital outlays.

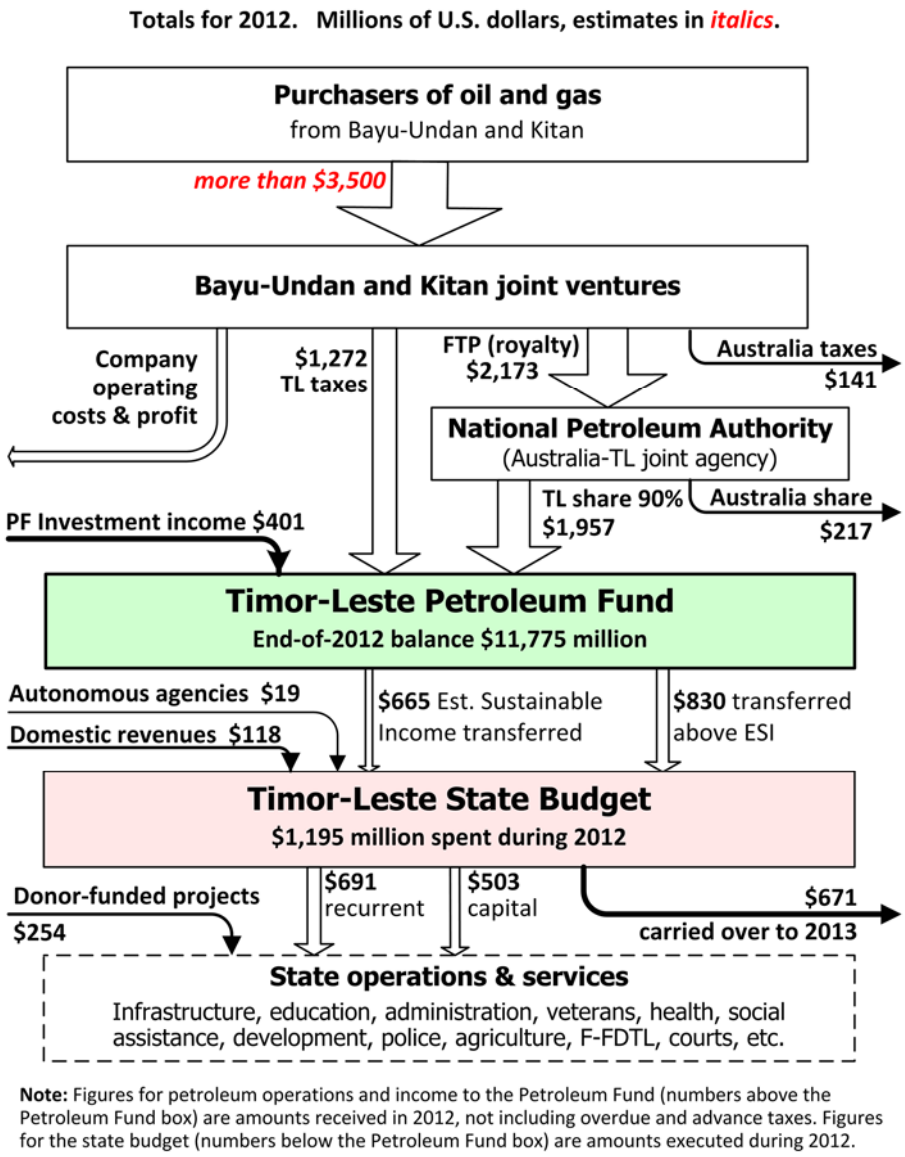
Policies neglect other domestic revenues: a 2008 'tax reform' slashed import, wage, and business taxes in hopes that this would encourage foreign investment and reduce prices to consumers. As a result, Timor-Leste has the third-lowest total tax rate in the world — one-quarter of the global average (World Bank/PwC 2014).

[4] In February 2015, the *Business Activities Survey of 2013* (GDS 2015b) reported that the number of private sector jobs had dropped 4.1% since the previous year, which was confirmed by the Labour Force Survey (GDS 2015c). Women workers disproportionately lost their jobs.

[5] This projection is too high. World prices for Brent crude oil fell by more than 50% between mid-2014 (when the 2015 Budget was prepared) and the beginning of 2015. La'o Hamutuk (2015, 2015b) suggested that this should be incorporated in the revision of the 2015 Budget but the Ministry decided not to. Nevertheless, the 2016 budget will incorporate these developments (RDTL MoF 2015b).

The sovereign wealth fund saves petroleum revenues

Figure 3. Timor-Leste's Petroleum Revenue Streams



Note: Figures for petroleum operations and income to the Petroleum Fund (numbers above the Petroleum Fund box) are amounts received in 2012, not including overdue and advance taxes. Figures for the state budget (numbers below the Petroleum Fund box) are amounts executed during 2012.

Sources: CBTL 2015; RDTL MoF 2013; 2014; Santos 2014; ANP 2015.

Almost all of Timor-Leste's oil and gas income is deposited into the Petroleum Fund, which serves as a buffer between this income and annual expenditure. This allows the state Budget to respond to public needs, rather than oil price and production fluctuations. Forty per cent of the Fund is invested in the global stock market, with the balance in bonds, mostly from the US Government. Returns from these investments are redeposited into the Petroleum Fund. When the Fund was being created in 2004–2005, designers intended that these earnings would replace oil revenues after the fields run dry (CBTL 2015; *La'o Hamutuk* 2013).

Every year, the Ministry of Finance calculates an estimated sustainable income (ESI) benchmark, equal to three per cent of the current Petroleum Fund balance added to the net present value of expected future revenues from oil and gas fields with approved development plans.[6] The ESI informs the decision of how much to withdraw from the Petroleum Fund each year to finance the state Budget, although it was exceeded every year from 2008 to 2012, and again from 2014 onwards (RDTL MoF 2014b).

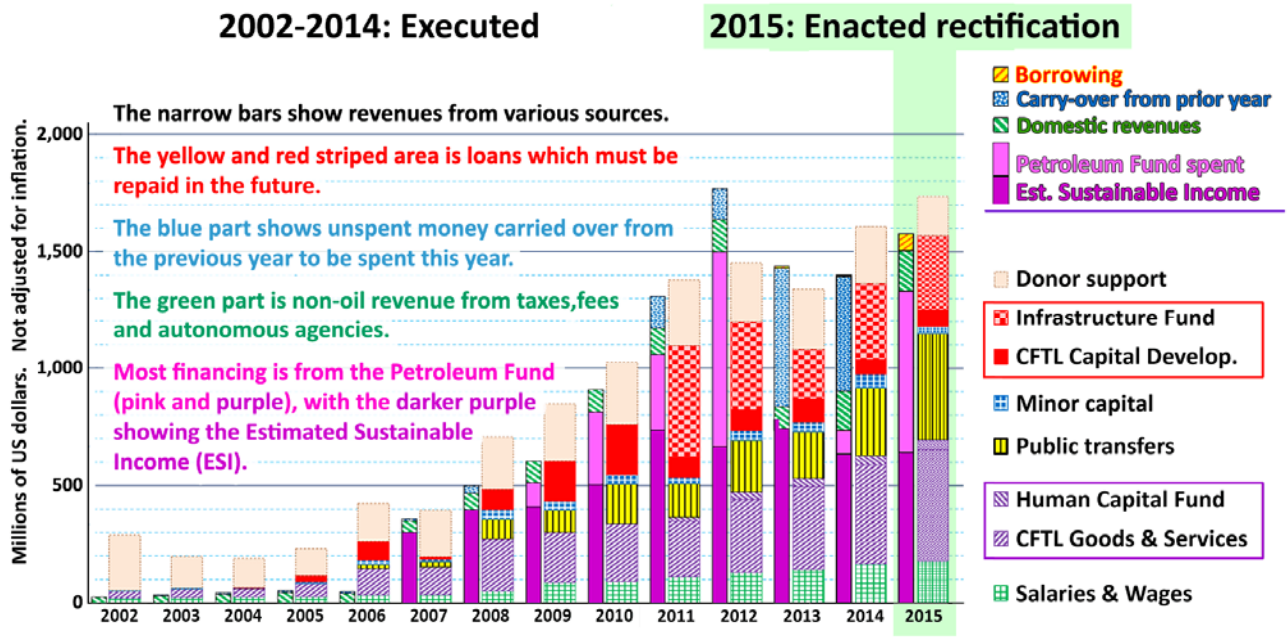
The ESI does not reflect population growth. It was designed to spend more per person now than later, investing in Timor-Leste's future and being supplemented by other revenues over time. If future oil revenues and investment returns follow ESI's prudent projections, the ESI would be the same amount every year, regardless of population, local inflation (which has exceeded global rates), improved state services, or growing expectations. Unfortunately, overspending ESI has lowered the balance in the Petroleum Fund, reducing its future investment earnings. In fact, the Fund's goal of using return from

[6] At present, these are the Bayu-Undan and Kitan fields in the Joint Petroleum Development Area, from which Australia takes 10% of the revenue. The Greater Sunrise project has no approved development plan, so it is not part of the ESI.

investments to finance state activities for decades after the oil and gas are gone is unlikely to be achieved, due to transfers above ESI, rapid budget escalation, revision of the Petroleum Fund Law, less prudent price projections, and lower oil production and income.

Figure 4 shows how much money Timor-Leste's state Budget has received and spent since the restoration of independence in 2002. The narrow bars show actual revenues through 2014 and budgeted revenues during 2015. The lowest two segments (solid pink and purple) represent withdrawals from the Petroleum Fund, while the upper segment (stippled blue) is the balance carried over from excess withdrawals from the Fund in prior years. However, the blue (carryover) and yellow/red (borrowing, which started in 2014) segments also mainly come from the Fund in the past and the future.

Figure 4. State Revenues and Expenditures



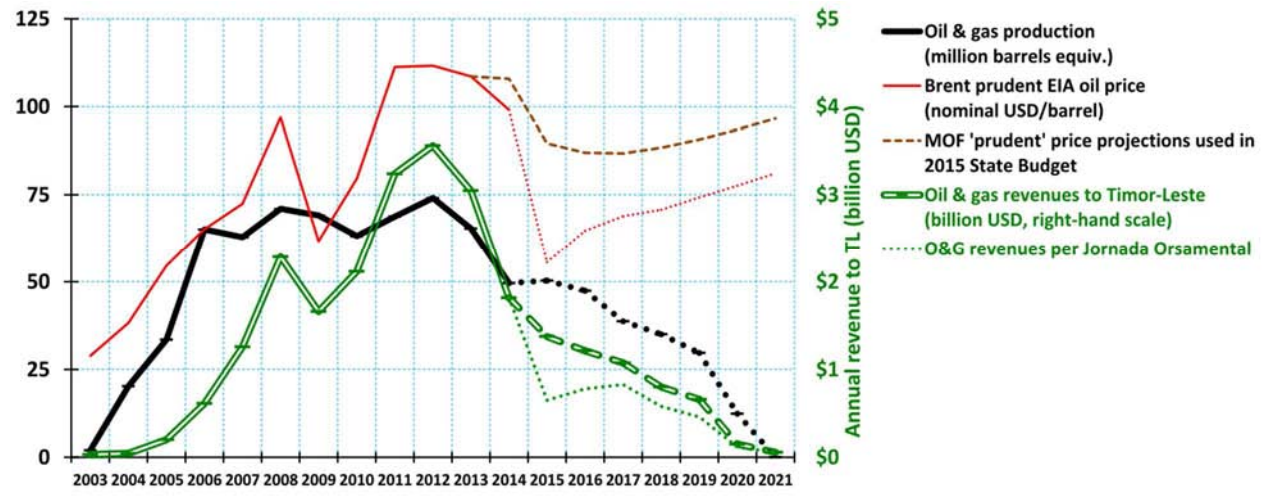
Sources: RDTL MoF 2013b; 2014a; 2015a; and state budget books for prior years.

Large oil revenues began in 2006; they have been declining since 2012. They pay for virtually all state expenditures, which grew more than 25% per year from 2008 to 2012 — faster than every nation except Zimbabwe.

The principal source of income is the Bayu-Undan oil and gas field, operated by US oil giant ConocoPhillips. In 2013, the company downgraded its estimate of future revenues to Timor-Leste by 49%, with production to end four years earlier than previously estimated (RDTL MoF 2014a). The Government responded by withdrawing less than the parliamentary limit (which had been set at ESI) from the Petroleum Fund for the first time ever, and financed its operations with the cash balance transferred from the Fund in prior years.[7] During 2014, oil revenues to Timor-Leste dropped 42%, primarily because production fell 24% as the fields near the end of their profitable lives.

[7] The 2013 budget authorised $787 million to be withdrawn from the Petroleum Fund, equal to the Estimated Sustainable Income, but the Timor-Leste Government withdrew only $730 million because much more had been withdrawn during 2012 than the government could spend (*La'o Hamutuk* 2013a). Nevertheless, 2013 ended with $634 million in the Treasury account — more than triple the cushion the government says it needs. During 2014, the Treasury again paid for increased spending. However, the balance had been drawn down to $181 million by year end, leaving little to be rolled over into 2015.

Figure 5. Oil and gas income peaked in 2012 and continues to fall



Sources: US EIA 2015; RDTL MoF 2015; 2015a; 2015b; ANP 2015; La'o Hamutuk 2015c.

Figure 5 shows how oil and gas revenues to Timor-Leste (double green line) reflect global prices (red thin line) and local production (thick black line). After 2014, the graph shows price projections used by the Ministry of Finance for the 2015 budget (dashed brown line), and more recent U.S. government projections (dotted red line). As a result of the price drop, future revenues may be less than the dotted green line, as it does not incorporate likely decreases in production.

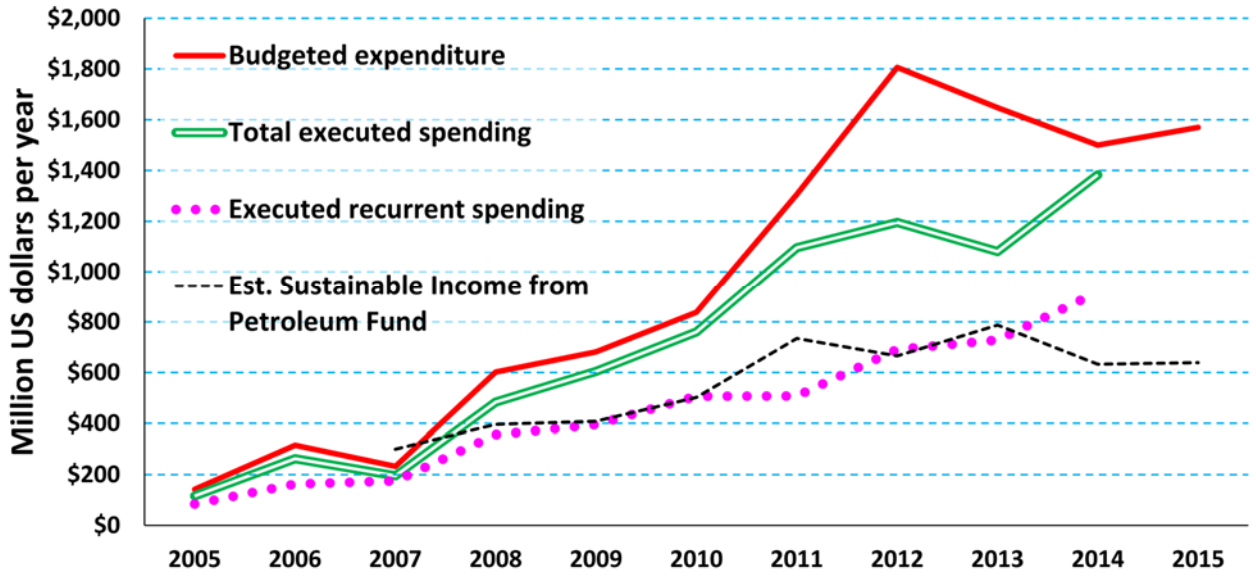
The 2014 budget allowed withdrawal of up to $903 million from the Petroleum Fund — well above the $632 million ESI, which *La'o Hamutuk* and parliament's Committee on Public Finances had agreed was unnecessary (*La'o Hamutuk* 2013b; RDTL National Parliament 2013). By the end of the year, $732 million had been withdrawn — $100 million more than ESI. The 2015 budget limits Petroleum Fund withdrawals to $1,327, and it is likely to be used because the carried-over balance that had supplemented lower transfers during 2013–14 no longer exists. The government transferred $140 million from the Petroleum Fund in January and February 2015 — the first time a transfer has ever been done during the first two months of a fiscal year.

Spending grows quickly, but not always wisely

State expenditures are shown as the wider bars in Figure 4, with the tan upper segment representing donor contributions, which are not included in the state Budget. The next two (red) segments represent physical infrastructure. Infrastructure construction absorbed half of state expenditures while the electricity system was being built in 2011, and it still absorbs more than a third of the Budget. Although spending on large projects has slowed due to delays, it will resurge if projects on the drawing board — including Dili airport, Tibar Port, the Oecusse Special Economic Zone, and the Tasi Mane petroleum infrastructure project —are built.

Spending on recurrent costs (salaries, goods, services, public grants) continues to increase about 20% per year, even though total appropriations went down after 2012.

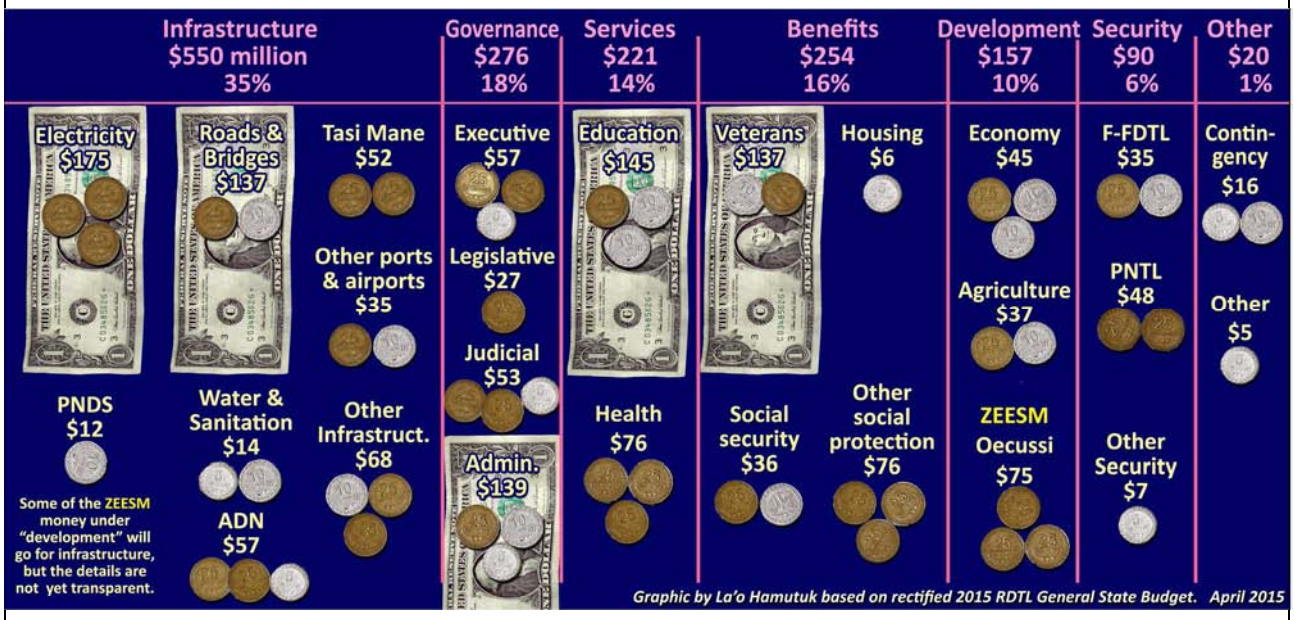
Figure 6. Budgeted, executed and recurrent spending year-by-year



Sources: RDTL MoF 2014; 2015a.

Timor-Leste continues to under-invest in health and education, spending merely 14% of its budget on these human resources, compared with more than 30% in well-managed developing countries (UNDP 2011). Most children born during the post-1999 'baby boom' are not getting adequate nutrition or education, which will have severe, long-term consequences for the nation's future.

Figure 7. Allocation of the revised 2015 State Budget ($1,570 million)



Source: RDTL MoF 2015a.

Agriculture, which sustains most Timorese households, receives only two per cent of 2015 state spending (*La'o Hamutuk* 2014).

The resource curse has many faces

Timor-Leste's economy and politics are typical of the resource curse (Neves 2013) — a set of conditions, choices, and consequences that almost always makes citizens of extractive-export-dependent countries worse off than people in countries with little oil or mineral wealth. In general, the

resource curse results from easy access to non-renewable wealth, which is seen as a windfall that can be freely spent on short-term desires rather than strategic longer term development. Since there are few taxpayers demanding that their money be used wisely, corruption, conflict, and opacity often occur, although Timor-Leste has taken some steps to avert them. At the end of the day, when all the mineral wealth has been converted to cash and spent, the opportunity to develop a sustainable, self-sufficient economy may also have been squandered.

The resource curse is not magic or metaphysical. It occurs in almost every impoverished nation whose economy is dominated by exporting non-renewable resources, including Nigeria, Ecuador, the USSR, Libya, Gabon, Iraq, Congo, Equatorial Guinea, Papua New Guinea, and Nauru. Oil and gas exporters are the most vulnerable, due to the volatility of the international market, avarice of the petroleum industry, and the industrialised world's addiction to petroleum. With most wealth deriving from extractives and state spending, rent-seeking — working to get a piece of this money, rather than to produce something — becomes dominant. Although one form of this is corruption, most resource-curse-driven behaviour is legal and accepted, albeit more fundamental and widespread.

Available wealth attracts shady characters

A cash-rich government with limited experience and safeguards is a tempting target for scammers, tax-evaders, thieves and opportunists from all over the world, as shown by these examples (*LH* 2012b).

In 2009, Singaporean Datuk Edward Ong promised to build the Pelican Paradise luxury resort just west of Dili. Ong then asked the Minister of Finance to deposit $1.2 billion from Timor-Leste's Petroleum Fund in a blocked bank account controlled by Asian Champ Investment, Ltd, promising to pay 7.5% interest and to return the money in one year. His proposal was taken seriously, and the Minister travelled to London with the President of Timor-Leste's Petroleum Fund Investment Advisory Board (IAB) for further discussions. In the end, prudence prevailed, and Timor-Leste declined to give the apparently fictional company a billion dollars. The IAB noted that 'worldwide there have been a number of reported cases where institutional investors have fallen prey to fraudulent schemes under arrangements involving apparently secure deposits in "blocked accounts" at reputable banks, higher than market interest rates, a rapid decision-making process, and little if any documentation concerning the parties making the offer' (RDTL IAB 2009*; LH* 2010). Although Ong and Pelican Paradise were invisible after the attempted scam was exposed, they re-surfaced in 2015.

On 19 June 2014, U.S. Federal agents arrested Nigerian-born U.S. lawyer Bobby Boye, who worked in Timor-Leste from 2010-2013 advising the Ministry of Finance on petroleum tax collection (*La'o Hamutuk* 2014f). U.S. prosecutors charged Boye with wire fraud, alleging that he created a fake company Opus & Best and used his influence to have the Timor-Leste government pay O&B $3.5 million. In April 2015, Boye pled guilty and could be sentenced to four to twenty years in prison. However, many suspect that others were involved in his crimes, either through conspiracy or negligence. It is clear that both the Norwegian aid program which initially hired him and the Ministry of Finance which extended his employment and awarded contracts to O&B failed to exercise due diligence (*La'o Hamutuk* 2014e), as Boye has a long record of criminal and financial malfeasance (*Aftenposten* 2014, *La'o Hamutuk* 2014j).

Timor-Leste's state owned petroleum company, TimorGAP, has spent tens of millions of dollars and signed contracts for billions during its three years of operation, but it has not generated any income. In August 2014, *La'o Hamutuk* suggested that the Court of Appeals audit their finances, as Parliament and the public know very little about the obligations they have incurred on behalf of the state (*La'o Hamutuk* 2014h).

Timor-Leste protected itself against one consequence of the resource curse by using an international currency; the US dollar safeguards against runaway inflation and 'Dutch disease'.[8] However, inflation in Timor-Leste has been higher than in our trading partners, due to the lack of local productive capacity and the supply of money exceeding the supply of imports.

[8] 'Dutch disease' results when mineral rents cause a large inflow of foreign currency, distorting foreign exchange rates and making exports less competitive. By not printing its own money, Timor-Leste has reduced this damaging impact.

Furthermore, the international oil market is priced in US dollars, so when a rising dollar makes oil and commodity prices fall, state revenues also drop. During 2014, the US dollar rose and oil prices fell, lowering inflation but sharply reducing state revenues and the value of Petroleum Fund investments in other currencies (*La'o Hamutuk* 2015; 2015b).

Some structural elements of the resource curse are nearly impossible to control, such as the ruthlessness and amorality of huge international oil companies, global and local environmental damage, invasions and civil wars, and the capital-intensive, high-skill nature of the petroleum industry. Others, however, can be overcome, although it is rare to find political leaders in any country with the far-sightedness, wisdom, and courage to make the best decisions for their people's future.

Timor-Leste's history and geography make the resource curse more severe than it would be from petroleum dependency alone, including these factors:

- **Extreme poverty and underdevelopment:** Portugal did little to develop economic production or human resources, while Indonesia destroyed infrastructure and discouraged individual initiative or self-reliance. Only a small fraction of Timor-Leste's 1.2 million people have had access to good education, entrepreneurial skills, or managerial experience.
- **Emergence from foreign rule:** Until 2002, leaders and citizens never lived under democratic self-government by rule of law. Administrative and legal structures must be built from scratch, overcoming the bad habits civil servants learned while working in and/or resisting inefficient, illegal, and corrupt Indonesian and Portuguese administrations. Citizens and leaders alike are learning how to effectively participate in a peaceful, transparent, accountable, stable, society, where government with citizen participation serves the public interest (*La'o Hamutuk* 2015a).
- **Recovery from prolonged war:** Many people are traumatised. Repeated unpredictable, uncontrollable interruptions to people's lives has taught them not to plan for or invest in the future. Leaders who excelled at struggling against foreign occupation lack the skills for peacetime democratic, consultative governance. Around the world, struggles over oil and minerals often lead to war and conflict, but Timor-Leste hopes that that phase of its history is over.
- **Self-interested neighbours:** Although both Australia and Indonesia claim to support the new nation, their thirst for oil and insistence on impunity belie their good will. Australia continues to occupy about 40% of the oil and gas reserves that should belong to Timor-Leste under current international law (*La'o Hamutuk* 2014a).

This toxic combination makes it almost impossible to develop a sustainable, equitable economy. PowerPoint presentations substitute for plans; the *Strategic Development Plan* (RDTL 2011) is an enticing, impossible dream. In search of showy, quick solutions, planning neglects the unglamorous but essential tasks of alleviating poverty, replacing imports, and working toward food sovereignty.

The cash-flush government has hardly any taxpayer-voters demanding financial accountability. The elite and some constituencies believe that they are entitled to a disproportionate share of public resources — a pattern set by rewarding heroes of the liberation struggle and 'buying peace' to neutralise potentially troublesome groups or political opponents. Instead of the give-and-take that constrains state spending in 'normal' countries, the whims of politicians and promises of salesmen are using up Timor-Leste's finite oil wealth. The appointment of Dr Rui Maria Araujo as Prime Minister in February 2015 prompted optimism that this may change, but Xanana Gusmão continues in a major role, with responsibility for planning, investment, infrastructure, procurement and other key sectors.

Multi-billion-dollar, multi-year infrastructure projects such as the Tasi Mane south coast petroleum infrastructure project and the Special Economic and Social Market Zone in Oecusse are initiated without realistic estimates of their total cost, competitive advantage or economic viability (*La'o Hamutuk* 2013d; 2014g; 2015b; 2015e). Adding to the risk, loans from foreign institutions (sometimes disguised as Public–Private Partnerships) incur hundreds of millions of dollars in debt, which will have to be repaid after the oil and gas are gone (*La'o Hamutuk* 2013c; 2014d).

When a decision-maker has access to money, it seems like the solution to every problem. It's easier to buy a scholarship than to build a quality university — the budget for overseas scholarships is far higher than the appropriation for the National University, which educates four times as many students (RDTL MoF 2014a; 2015). Similarly, the state pays for a few well-connected people to fly to overseas hospitals, but most citizens cannot access decent health care. Roads and bridges in the capital used by VIP visitors are repaved frequently, with vendors and markets moved out of sight, while rural communities struggle with impassable tracks and rivers. Airport and highway construction could consume a billion dollars, yet very few Timorese will ever fly or own a car. Hundreds of millions more may pay to construct a container port that can handle an eight-fold increase in imports, but without oil money, how will Timor-Leste pay for the imports or guarantee the investor's expected return?

More ominous, petroleum dominates planning, diverting attention from sustainable, equitable, realisable development paths. Because oil is where the action is today, the most persuasive, creative, and ambitious people choose to work in petroleum regulatory agencies, oil corporations and TIMOR GAP (the state-owned oil company). They persuade budgeters to award millions of dollars for concept studies, preliminary designs and promotional presentations. When the resulting proposals are compared with those for agriculture, tourism, or import-substituting manufacturing, the playing field is tilted.

Similarly, the best and brightest university students major in petroleum engineering, similar to the rent-seeking that led many in the West to become stockbrokers and lawyers during the bubble before the 2007 financial crisis (Stiglitz 2014, ch. 2), but few jobs exist for inexperienced graduates in the capital-intensive petroleum industry (*Rigzone* 2015). As a result, less glamorous but more necessary fields like civil engineering, education, business development, management, water supply, sanitation, nutrition, and health care are deprived of both financial and human resources (Neves 2014).

This petro-state doesn't have much petrol

If Timor-Leste's oil reserves were as large as Brunei's or Saudi Arabia's, these problems could be drowned in dollars. Unfortunately, geology has not been that generous to this new nation. Even if the Greater Sunrise field is developed with an LNG plant in Timor-Leste and Australia takes only half of the upstream revenues, total expected oil and gas revenues are not even enough to support one (current) dollar per person per day of public spending over the next four decades. This would be less than one-third of the 2015 state budget, which pays for a level of services that nobody would consider adequate over the long term. If the balance in the Petroleum Fund goes up and the stock market booms, additional revenue from investments could help a little, but recent patterns make this improbable (Scheiner 2014; *La'o Hamutuk* 2015d).

Oil revenues peaked in 2012, and Timor-Leste has already received more than three-fourths of the expected income from its only two producing oil and gas fields. Kitan production will end in 2016 and Bayu-Undan by 2020 (RDTL MoF 2015; *La'o Hamutuk* 2014c; 2015c). By comparison, Australia is richer in petroleum than Timor-Leste, with larger future potential. Indonesian reserves are smaller for its population, but they are being pumped more slowly than Timor-Leste's.

Table 4: Oil and gas reserves in nearby countries

	Timor-Leste		Australia		Indonesia	Brunei
	50% Sunrise	no Sunrise	50% Sunrise	no Sunrise		
Known oil and gas reserves per person	605 barrels	170 barrels	1,170 barrels	1,150 barrels	83 barrels	6,440 barrels
Likelihood of additional discoveries	Low (small area, explored for decades)		High (further offshore)		Moderate (large area)	Moderate (deeper water)
How long reserves will last at 2014 production rates	16 years	4.3 years	51 years	50 years	27 years	23 years

Sources: La'o Hamutuk estimates and ANP 2014 for Timor-Leste; BP 2015 for other countries

Timor-Leste's petroleum officials have faith that Timor-Leste has large undiscovered oil and gas deposits, and that the companies' projections are too pessimistic (*Timor Post* 2014).[9] During the discussion of a preliminary version of this paper in November 2013, Autoridade Nacional do Petróleo's (ANP) (National Petroleum Authority) President Gualdino da Silva said '[Timor-Leste] is a proven petroliferous zone. It is also a new frontier; we need more production, we need more discoveries. How could one believe in a conclusion based only on the two production fields? The country is still in an early stage, in its infancy, of researching and discovering more oil and gas. It is too early to reach that conclusion' (ANU 2013). After oil prices crashed in 2014, ANP's director of exploration continued to promote a new bidding round: 'We have 85 percent open acreage offshore in [Timor-Leste's undisputed area] and we still [have] more than 65 percent open acreage in the Joint Petroleum Development Area. We haven't any onshore blocks [that have been offered for exploration] … This is [a] very new frontier' (*Rigzone* 2015). The director's comment ignores industry-wide retrenchment and the fact that oil companies already explored or declined all open offshore acreage during more profitable times.

Although anything is possible, the country's small and constrained land and sea area, geological structures, and 120-year history of oil exploration make significant additional reserves unlikely. The first Sunrise test well was drilled in 1974, Kitan is the only commercial field discovered since the flurry of exploration after the 1991 Timor Gap Treaty, and more than a dozen test wells have been drilled since the Indonesian occupation ended in 1999, with Kitan the only commercially viable discovery. During Timor-Leste's most recent offshore licensing rounds in 2006, no company which had previously explored the area submitted a bid. Since then, about 90% of the contract areas awarded in 2006 turned out be commercially unviable, and the contract holders have relinquished them (*La'o Hamutuk* 2014i). The next bidding round, which could take place in 2015, has been repeatedly delayed since 2010.

There isn't much time

Timor-Leste does not have enough oil and gas to sustain the country for very long. If the non-oil economy hasn't developed when the last well runs dry in five years, many more people will join the growing majority struggling to live under the poverty line. When state revenues can no longer cover expenses, Timor-Leste will fall into austerity, with drastic implications for the state and its citizens.

Combined with good planning, Timor-Leste's Petroleum Fund could help support sustainability. Although documents and officials often refer to inter-generational equity, suggestions for more serious efforts to develop alternatives to petroleum (UNDP 2011; Scheiner 2011; *La'o Hamutuk* 2012; *Petroleum Economist* 2013) were rebuffed (RDTL Spokesperson 10-May-2011; 21-Mar-2013) until recently (RDTL MoF 2011; 2013c; 2014b). Nevertheless, Timor-Leste's government continues to boast about its strong, growing, inclusive economy (Global Insight 2014; *Straits Times* 2014), although it is unclear whether policy-makers believe their own advertising. After ANU published a two-page summary of this paper (Scheiner 2014a), the Ministry of Finance responded with an eight-page Briefing Note (RDTL MoF 2014c), narrowly redefining the resource curse and ignoring the main points in the paper.

However, others are beginning to understand the urgency. After years of echoing the government's petroleum-dominated priorities, the World Bank highlighted the need for non-petroleum economic development in its 2013–17 Country Partnership Strategy (World Bank 2013). When President Taur Matan Ruak promulgated the 2014 state budget, he wrote to Parliament:

> Once again, I am concerned about the excessive dependency of government revenue on the Petroleum Fund. I am absolutely convinced that it is urgent to correct this situation. … I believe that it is necessary to adopt active policies to diversify economic development ... (RDTL President 3-Feb-2014).

[9] In 2007, Timor-Leste tried to continue oil production from the Elang-Kakatua field after ConocoPhillips decided it was no longer worth operating. They were unable to attract another company.

Minutes after being sworn into office in February 2015, Prime Minister Dr Rui Araújo hedged his bets:

> [W]e know that these petroleum reserves are not renewable and, in the worst case scenario, may even run out in the years to come. While on the one hand we are fortunate to still have untapped resources, on the other hand we are one of the countries with the greatest petroleum dependency in the world. As such, we must invest in a responsible and sustainable manner. (RDTL Prime Minister 16-Feb-2015).

La'o Hamutuk and others in civil society have encouraged a sustainable course for more than a decade (*La'o Hamutuk* 2002; 2005a; 2015; Scheiner 2011; 2013; FONGTIL 2013; 2014). In 2012, we began to estimate Timor-Leste's future state revenues and expenditures based on current trends, external factors, and anticipated policy choices (*La'o Hamutuk* 2012; 2012a). The spreadsheet model is online as part of an ongoing effort to encourage evidence-based decision-making (Scheiner 2014; *La'o Hamutuk* 2015d; 2015f).

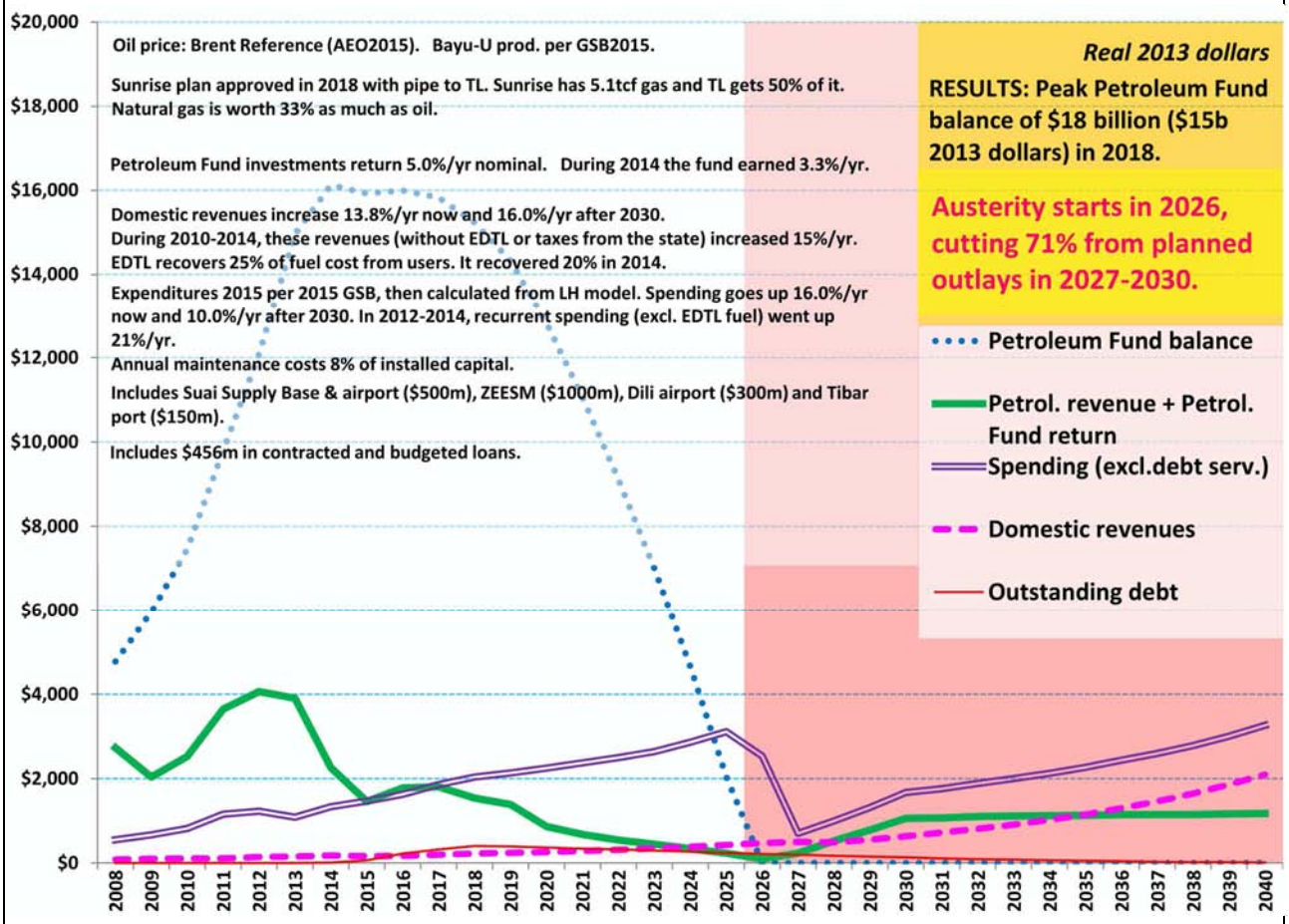
The model uses an engineering approach, based on causality and Timor-Leste's history, rather than correlations with other countries. It does not try to simulate the macro economy and therefore does not estimate GDP, inflation, poverty, or trade. Rather, it projects how much the state will receive and spend, based on oil and gas receipts, investment returns, domestic revenues, and policy decisions about recurrent spending, megaprojects, borrowing, Sunrise development, and other factors.

The model uses data and estimates from a variety of sources, including state budgets and executed expenditures (RDTL MoF 2013; 2013a; 2013b; 2014; 2014a; 2015a), population projections (RDTL GDS 2013b), oil price projections (US EIA 2015), and *La'o Hamutuk's* calculations of oil and gas production and debt repayments based on information from oil companies and lenders.[10] Detailed descriptions of the model's outputs and suggestions of what should be cut after Timor-Leste runs out of money are beyond the scope of this paper.

Figure 8 shows the model's baseline scenario, which is based on 'best-guess', mid-2015 assumptions of what is likely to happen, and is too optimistic for prudent planning. It uses higher oil prices than the Ministry of Finance uses to calculate the ESI and assumes a better return on Petroleum Fund investments than they earned in 2012–14. It also assumes that much less will be spent to build the Oecusse Special Zone and the Tasi Mane Project than is currently being discussed (*La'o Hamutuk* 2015).

[10] At the time of writing in June 2015, long-term oil price predictions are tentative, and Timor-Leste's plans and budgets are being reviewed. Updates will be at http://www.laohamutuk.org/econ/model/13PFSustainability.htm.

Figure 8. Base Case scenario from Sustainability Model



Source: La'o Hamutuk 2015f.

With these rosy assumptions, spending exceeds oil and interest income in 2017, and the Petroleum Fund begins to shrink. By 2026, before today's infants finish secondary school, the Fund will be used up, and state spending will have to be slashed by more than two-thirds from desired levels, as shown by the red shaded background.

This scenario assumes that the Greater Sunrise project goes ahead soon with an LNG plant in Beaçu, so that austerity cuts are 'only' 71%. If the companies prevail and they build a floating LNG plant, austerity will be 75% — a little harsher.

In February 2015, Sunrise operator Woodside Petroleum announced that it will 'shelve' the Sunrise project. CEO Peter Coleman told reporters 'We have exhausted all activities … it's very difficult [for us] to spend any material amount of money [on Sunrise]. We don't know what the regulatory regime is, [and] we don't know what the fiscal regime is' (*West Australian* 2015). If the Sunrise project remains stalled, the model shows that Timor-Leste will have to cut expenditures 87% after 2025, closing even more schools, clinics, offices and police stations.

Changes in other assumptions can bring on bankruptcy and austerity up to three years earlier or seven years later. However, without a dramatic redirection of policy approaches, Timor-Leste's petroleum reserves and petroleum wealth will not be able to finance the state for longer than 15 years, even if the country's wishes for Sunrise development, investment returns, and global oil market prices are granted.

Although reducing expenditure and increasing non-oil revenue could delay austerity for a few years, it is inevitable that escalating budgets, increasing population, and greater expectations will exhaust the country's finite petroleum wealth in less than a generation. This can only be ameliorated with a rapid,

radical shift of direction toward increasing food production, reducing imports, cutting wasteful spending, and cancelling unprofitable megaprojects.

Timor-Leste must fortify its strongest resource — its people — by investing in education, nutrition, health care and rural water and sanitation. It must develop agriculture, the sector which employs most of its workers, to meet basic necessities and reduce the need for imports. Timorese people of all economic classes, genders, regions and generations will have to work together to defeat the resource curse by creating an equitable, sustainable economy.

The Timorese people proved their unity and persistence through their difficult, long struggle to achieve political sovereignty over the Indonesian occupation. Achieving economic sovereignty by overcoming the petroleum occupation may be even more difficult. It will require diverse approaches, building on Timor-Leste's strengths and prioritising medium- and long-term sustainability.

Timor-Leste has about ten years before the only ship that can take the nation away from poverty — its remaining petroleum wealth — will have sailed. If the nation has not built a solid foundation for its non-petroleum economy, the Petroleum Fund safeguards will have failed to avert the resource curse. Sadly, the Petroleum Fund may have been only a delusion of economic security that enabled Timor-Leste's officials, advisors, and donors to delay difficult decisions and avoid challenging tasks.

References

Many documents are referenced on both *La'o Hamutuk* and RDTL Government websites, as the government sites don't always work. All were accessed between December 2013 and June 2015.

Aftenposten [*Evening Post*] 23-Aug-2014. 'Finansdepartementet sendte svindler for å hjelpe Øst-Timor' [Finance department sends swindler to aid Timor-Leste]. http://www.aftenposten.no/okonomi/Finansdepartementet-sendte-svindler-for-a-hjelpe-Ost-Timor-7677639.html; English version at http://www.aftenposten.no/okonomi/Convicted-embezzler-money-launderer-hired-by-Norways-government-7679817.html

ANP (Autoridade Nacional do Petróleo; National Petroleum Authority) 2015. JPDA production data. http://www.anp-tl.org/webs/anptlweb.nsf/pgLafaekReport

ANU (Australia National University) 2013. 'Trends in economic development'. Podcast from Timor-Leste Update conference, 28-Nov-2013, Canberra. http://ips.cap.anu.edu.au/news-events/podcasts/series/2013-timor-leste-update-podcast-series

Barma, N.H. 2014. *The Rentier State at Work: Comparative Experiences of the Resource Curse in East Asia and the Pacific*. Asia & the Pacific Policy Studies 1:257-272. Canberra: Wiley Publishing. http://onlinelibrary.wiley.com/enhanced/doi/10.1002/app5.26

BP 2015. Statistical Review of World Energy 2015. http://www.bp.com/en/global/corporate/about-bp/energy-economics/statistical-review-of-world-energy.html

CBTL (Central Bank of Timor-Leste) 2014. Balance of Payments 2006–2013. Dili: CBTL. http://bancocentral.tl/Download/Publications/BoP/Excel/BOP%202006-2013.xlsx

CBTL 2015. Petroleum Fund quarterly and monthly reports. Dili: CBTL. http://www.bancocentral.tl/PF/Reports.asp

FONGTIL (Forum ONG Timor-Leste) 2013. Civil Society Statement on the Economic Sector to Timor-Leste and Development Partners Meeting, 19 June, Dili. http://www.laohamutuk.org/econ/13TLDPM/FongtilTLDPMEcon19Jun2013en.pdf

FONGTIL 2014. Civil Society Statement on the Economic Sector to Timor-Leste and Development Partners Meeting, 25 July. http://www.laohamutuk.org/econ/14TLDPM/14TLDPMEconEn.htm

Global Insight 2014. Timor-Leste advertising insert in *Japan Times*, 2 May. http://info.japantimes.co.jp/international-reports/pdf/20140502-GI-TIMOR-LESTE.pdf or http://www.laohamutuk.org/misc/promotion/TLPromoJapanTimes2May2014.pdf

IMF (International Monetary Fund) 2013. Democratic Republic of Timor-Leste: Staff Report for the 2013 Article IV Consultation. Washington; IMF. http://www.imf.org/external/pubs/cat/longres.aspx?sk=41079.0 or http://www.laohamutuk.org/econ/IMF/IMFArtIVTL2013ReportDec2013.pdf

IMF 22-Oct-2014. IMF Executive Board Concludes 2014 Article IV Consultation with Timor-Leste. Press release. http://www.imf.org/external/np/sec/pr/2014/pr14478.htm or http://www.laohamutuk.org/econ/IMF/IMFPR14478ExecBdArt4TL22Oct2014.htm

La'o Hamutuk 2002. With Money, Oil Also Brings Problems. *La'o Hamutuk Bulletin* 3(5) July. http://www.laohamutuk.org/Bulletin/2002/Jul/lhv3n5en.pdf

La'o Hamutuk 2005. Public Consultation and Enactment of Timor-Leste Petroleum Fund Act. http://www.laohamutuk.org/Oil/PetFund/Act/05FundActConsult.htm

La'o Hamutuk 2005a. Timor-Leste Will Be One of the Most Oil-Dependent Countries in the World. *La'o Hamutuk Bulletin* 6(4) November. http://www.laohamutuk.org/Bulletin/2005/Nov/LHBv6n4en.pdf

La'o Hamutuk 2010. Trying to Scam a Billion from the Petroleum Fund. http://www.laohamutuk.org/Oil/PetFund/ACI/10AsianChampInvestment.htm

La'o Hamutuk 2012. Timor-Leste is going for broke. http://laohamutuk.blogspot.com/2012/03/timor-leste-is-going-for-broke.html

La'o Hamutuk 2012a. How Timor-Leste Got Ten Billion Dollars … and How Quickly We Will Spend It All. http://laohamutuk.blogspot.com/2012/05/how-timor-leste-got-ten-billion-dollars.html

La'o Hamutuk 2012b. Ten billion dollars is a tempting target. http://laohamutuk.blogspot.com/2012/07/ten-billion-dollars-is-tempting-target.html

La'o Hamutuk 2013. [Operation of] Timor-Leste Petroleum Fund. http://www.laohamutuk.org/Oil/PetFund/05PFIndex.htm

La'o Hamutuk 2013a. 2013 General State Budget. http://www.laohamutuk.org/econ/OGE13/12OGE13.htm

La'o Hamutuk 2013b. Letter to Parliament on the 2014 General State Budget, 8 November 2013, 3. http://www.laohamutuk.org/econ/OGE14/LHKartaOGE14PN8Nov2013en.pdf

La'o Hamutuk 2013c. Timor-Leste is Going into Debt. http://www.laohamutuk.org/econ/debt/12Borrowing.htm

La'o Hamutuk 2013d. South Coast Petroleum Infrastructure Project. http://www.laohamutuk.org/Oil/TasiMane/11TasiMane.htm

La'o Hamutuk 2014. 2014 General State Budget. http://www.laohamutuk.org/econ/OGE14/13OGE14.htm

La'o Hamutuk 2014a. Information about the Treaty between Australia and Timor-Leste on Certain Maritime Arrangements in the Timor Sea. http://www.laohamutuk.org/Oil/Boundary/CMATSindex.htm

La'o Hamutuk 2014b. The Double Digit Disappears. http://laohamutuk.blogspot.com/2014/04/the-double-digit-disappears.html

La'o Hamutuk 2014c. Oil Production Inevitably Declines. http://laohamutuk.blogspot.com/2014/03/oil-production-inevitably-declines.html

La'o Hamutuk 2014d. Public-Private Partnerships to Build Grandiose Infrastructure Projects. http://www.laohamutuk.org/econ/PPP/PPPIndex.htm

La'o Hamutuk 2014e. Timor-Leste Has Been Robbed! http://laohamutuk.blogspot.com/2014/06/timor-leste-has-been-robbed.html

La'o Hamutuk 2014f. Making the Oil Companies Pay What They Owe. http://www.laohamutuk.org/Oil/tax/10BackTaxes.htm

La'o Hamutuk 2014g. Special Economic Zone in Oecusse. http://www.laohamutuk.org/econ/Oecussi/ZEESMIndex.htm

La'o Hamutuk 2014h. La'o Hamutuk Asks the RDTL Court of Appeals Please audit TimorGAP [Open letter to the Court of Appeals]. http://www.laohamutuk.org/Oil/TimorGAP/14LHTRTimorGAPaudit5Aug14.htm

La'o Hamutuk 2014i. Petroleum Production Sharing Contracts. http://www.laohamutuk.org/Oil/PSCs/10PSCs.htm

La'o Hamutuk 2014j. Bobby Boye: Convict, Advisor and Fraud. http://www.laohamutuk.org/econ/corruption/Boye/14BoyeCase.htm

La'o Hamutuk 2015. PM Araujo, Recognize Falling State Revenues When Revising the 2015 Budget. http://laohamutuk.blogspot.com/2015/02/pm-araujo-recognize-falling-state.html

La'o Hamutuk 2015a. It Takes More Than Money to Achieve Development. http://laohamutuk.blogspot.com/2015/02/it-takes-more-than-money-to-achieve.html

La'o Hamutuk 2015b. 'Submission to Committee C, National Parliament, regarding the Proposed Rectification of 2015 State Budget.' http://www.laohamutuk.org/econ/OGE15/OR/LHSubOR15-31Mar2015en.pdf

La'o Hamutuk 2015c. 'Timor-Leste's Oil and Gas are Going Fast.' http://www.laohamutuk.org/Oil/curse/2015/OilGoingFast15Apr2015en.pdf

La'o Hamutuk 2015d. 'Update: How Long Will Timor-Leste's Petroleum Fund Last?' http://www.laohamutuk.org/econ/model/OilSustain2June2015.pdf

La'o Hamutuk 2015e. 'Civil Society Comment to the 2015 Timor-Leste Development Partners Meeting on the Economic Sector.' http://laohamutuk.blogspot.com/2015/06/civil-society-to-development-partners.html

La'o Hamutuk 2015f. 'How Long Will the Petroleum Fund Carry Timor-Leste?' http://www.laohamutuk.org/econ/model/13PFSustainability.htm

Neves, G. 2013. Rentier State, Statism, and Socio-Political and Socio-Economic Dynamic. Paper presented to Timor-Leste Studies Association, July, Dili. http://www.laohamutuk.org/econ/model/NevesPoliticalRentierTLSA2013.pdf and http://www.tlstudies.org/pdfs/TLSA%20Conf%202013/Volume%202%20individual%20papers/vol2_paper3.pdf

Neves, G. 2014. Is Timor-Leste a Failed State? Life at Aitarak Laran (blog of the office of the Presidency of Timor-Leste) September. http://aitaraklaranlive.wordpress.com/2014/09/15/is-timor-leste-a-failed-state/

Petroleum Economist 2013. Going for Broke. Editorial, March, 2. http://www.petroleum-economist.com/Article/3159297/News-and-Analysis-Archive/Going-for-broke.html or http://www.laohamutuk.org/Oil/TasiMane/2013/PetroEconLeaderMarch2013.pdf

RDTL (*República Democrática de Timor Leste*; Democratic Republic of Timor-Leste) 2011. *Timor-Leste Strategic Development Plan 2011–2030.* Dili: RDTL. http://timor-leste.gov.tl/wp-content/uploads/2012/02/Strategic-Development-Plan_EN.pdf or http://www.laohamutuk.org/econ/SDP/2011/Timor-Leste-Strategic-Plan-2011-20301.pdf

RDTL GDS (General Directorate of Statistics) 2013. *Timor-Leste National Accounts 2000–2011*. Table 1.1. Dili: RDTL. http://www.statistics.gov.tl/wp-content/uploads/2013/12/TL-NA_2011_Final_Publishable.pdf or http://www.laohamutuk.org/DVD/DGS/NatlAccts2011May2013en.pdf

RDTL GDS 2013a. *External Trade Statistics, Annual Reports 2012*. Dili: RDTL. http://www.statistics.gov.tl/wp-content/uploads/2013/12/External_Trade_2012.pdf or http://www.laohamutuk.org/DVD/DGS/DGETrade2012.pdf

RDTL GDS 2013b. *Timor-Leste Census 2010 Volume 8: Population Projection*. Dili: RDTL. http://www.statistics.gov.tl/wp-content/uploads/2013/12/PPJ_Monograph.pdf http://www.laohamutuk.org/DVD/DGS/Cens10/8Projections.pdf

RDTL GDS 2014a. *Timor-Leste National Accounts 2000-2012*. Tables 1.1 and 3.1. Dili: RDTL. http://www.statistics.gov.tl/wp-content/uploads/2014/07/National-Account-2012.pdf or http://www.laohamutuk.org/DVD/DGS/NatlAccts2012July2014en.pdf

RDTL GDS 2014b. *Business Activity Survey of Timor-Leste 2012*. Dili: RDTL. http://www.statistics.gov.tl/wp-content/uploads/2014/07/BUSINESS-ACTIVITY-SURVEY-OF-TIMOR-LESTE-2012.pdf or http://www.laohamutuk.org/DVD/DGS/BAS2012Jul2014en.pdf

RDTL GDS 2015. External Trade Statistics, Monthly Reports. http://www.statistics.gov.tl/category/survey-indicators/external-trade-statistics/monthly-reports/

RDTL GDS 2015a, Consumer Price Index reports. http://www.statistics.gov.tl/category/survey-indicators/consumer-price-index/-lang=en

RDTL GDS 2015b. *Business Activity Survey of Timor-Leste 2013*. Dili: RDTL. http://www.statistics.gov.tl/wp-content/uploads/2015/02/Business-Activity-Survey-2013-_English.pdf or http://www.laohamutuk.org/DVD/DGS/BAS2013en.pdf

RDTL GDS 2015c. Timor-Leste Labour Force Survey 2013: April 2015. http://www.statistics.gov.tl/wp-content/uploads/2015/04/LFS_2013_ENGLISH_VERSION.pdf or http://www.laohamutuk.org/DVD/DGS/LFS2013en.pdf

RDTL GDS 2015d. *Timor-Leste National Accounts 2000-2013*. Dili: RDTL. http://www.statistics.gov.tl/wp-content/uploads/2015/06/A4-NA-2014-OK.pdf or http://www.laohamutuk.org/DVD/DGS/NatlAccts2013Jun2015en.pdf

RDTL IAB (Petroleum Fund Investment Advisory Board) 2009. Letter to Minister of Finance responding to 'Request for an advice on depositing part of the Petroleum Fund in cash', 18 September. Included in Annex X to the 2009 Petroleum Fund Annual Report, available at www.mof.gov.tl\wp-content\uploads\2011\09\Petroleum_Fund_Annual_Report_2009_English.zip, Part 4, page 23 or http://www.laohamutuk.org/Oil/PetFund/ACI/IABAsianChamp18Sep09En.pdf

RDTL MoF (Ministry of Finance) 2011. Analysis of Fiscal Sustainability in Timor-Leste. https://www.mof.gov.tl/analysis-of-fiscal-sustainability-in-timor-leste

RDTL MoF 2013. Petroleum Fund 2012 Annual Report. Dili: RDTL. www.laohamutuk.org/Oil/PetFund/Reports/PFAR12En.pdf or https://www.mof.gov.tl/petroleum-fund-annual-report-2012

RDTL MoF 2013a. Fundo Consolidado de Timor-Leste, Declarações Consolidadas Anuais Ano Fiscal de 2012 [Consolidated Fund of Timor-Leste, Annual Financial Statements for Fiscal Year 2012]. http://www.laohamutuk.org/econ/OR12/CFET_Financial_Statement_2012.pdf

RDTL MoF 2013b. State Budget 2013: Budget Overview (Book 1), tables 2.5.3.1.1 and 2.5.3.1.2. Dili: RDTL. http://www.laohamutuk.org/econ/OGE13/BksApr2013/OGE13Bk1en.pdf

RDTL MoF 2013c. Yellow Road workshop 9–10 May, Dili. Presentations available from La'o Hamutuk at http://www.laohamutuk.org/econ/OGE14/13OGE14.htm#yrw and https://www.mof.gov.tl/2013-yellow-road-workshop/?lang=en

RDTL MoF 2014. Budget Transparency Portal. http://www.budgettransparency.gov.tl/public/index?&lang=en Also http://www.transparency.gov.tl/english.html

RDTL MoF 2014a. General State Budget 2014. All six budget volumes are available at http://www.laohamutuk.org/econ/OGE14/13OGE14.htm#docs

RDTL MoF 2014b. Yellow Road Workshop 29-30 May, Dili. Presentations https://www.mof.gov.tl/wp-content/uploads/2014/08/Yellow_Road_Workshop_2014.pdf

RDTL MoF 2014c. Briefing Note to Respond to 'The Resource Curse in Timor-Leste' Article Authored by Charles Scheiner (La'o Hamutuk). https://www.mof.gov.tl/briefing-note-to-respond-to-the-resources-curse-in-timor-leste-article-authored-by-charles-scheiner-lao-hamutuk/?lang=en or http://www.laohamutuk.org/econ/exor/MoFResourceCurse2Sep14.pdf

RDTL MoF 2015. 2015 General State Budget documents. http://www.laohamutuk.org/econ/OGE15/14OGE15.htm#docs

RDTL MoF 2015a. 2015 Rectification budget papers and related documents. http://www.laohamutuk.org/econ/OGE15/14OGE15.htm#docs

RDTL MoF 2015b, Jornada Orsamental workshop 14 May 2015, Dili. Presentations https://www.mof.gov.tl/wp-content/uploads/2015/05/Jornada_Orcamental.pdf or http://www.laohamutuk.org/econ/OGE16/yrw/JornadaOrsamental14May2015.pdf

RDTL National Parliament 2013, Comissão de Finanças Públicas. Relatório e Parecer Sobre a Apreciação Inicial da Proposta de Lei N.º 10/III (2ª) - Orçamento do Estado para 2014 [Report and Opinion on the Initial Proposed Law No. 10/III(2), State Budget for 2014] Dili: RDTL, 19. http://www.laohamutuk.org/econ/OGE14/CommCReport3Dec2013pt.pdf; unofficial English translation at http://www.laohamutuk.org/econ/OGE14/ComCRecomOGE14LHEditen.pdf

RDTL President 3-Feb-2014. *Mensagem ao Parlamento Nacional na Promulgação do Orçamento Geral do Estado para 2014* [Message to the National Parliament on Promulgation of the General State Budget for 2014]. http://www.laohamutuk.org/econ/OGE14/PR-OGE3Feb2014en.pdf or Portuguese original at http://www.laohamutuk.org/econ/OGE14/PR-OGE3Feb2014pt.pdf

RDTL Prime Minister 1-Apr-2014. Address by His Excellency the Prime Minister of the Democratic Republic Of Timor-Leste Kay Rala Xanana Gusmão at the Forum on Trade and Investment Opportunities in Timor-Leste' Kuala Lumpur, Malaysia. http://timor-leste.gov.tl/wp-content/uploads/2014/04/Forum-on-Trade-and-Investment-KL-1.4.14.pdf or http://www.laohamutuk.org/DVD/2014/XG-KL1Apr14en.pdf

RDTL Prime Minister 16-Feb-2015. Speech by His Excellency the Prime Minister Dr Rui Maria De Araújo on the Occasion of the Swearing-In of the Sixth Constitutional Government. http://timor-leste.gov.tl/wp-content/uploads/2015/02/Swearing-in-of-the-Sixth-Constitutional-Government-16.2.20151.pdf

RDTL Spokesperson 10-May-2011. 'Transparency and the UNDP Timor-Leste Human Development Report 2011'. Press release. http://timor-leste.gov.tl/?p=5018&lang=en or http://www.laohamutuk.org/econ/HDI10/SSComNHDR10May2011En.pdf

RDTL Spokesperson 21-Mar-2013. Correction of Inconsistencies in international media regarding oil and gas'. Press release. http://timor-leste.gov.tl/?p=7901&lang=en

Rigzone 5-Feb-2015. Timor-Leste Reviews Investment Rules, Plans New Bid Round. http://www.rigzone.com/news/oil_gas/a/137061 or http://www.laohamutuk.org/oil/curse/2015/RigzoneBid5Feb2015.pdf

Santos 2014. Annual Reports for 2012-2014. http://www.santos.com/share-price-performance/company-reporting/annual-reports.aspx

Scheiner, C. 3-May-2011. Timor-Leste Must Win Independence from Petroleum. Presentation at launch of UNDP 2011 Human Development Report. http://www.laohamutuk.org/econ/HDI10/11NHDREn.htm

Scheiner, C. 18-Apr-2013. Comments at the launch of the 2013 Economic and Social Survey of Asia and the Pacific. http://www.laohamutuk.org/econ/ESCAP/ESCAPScheiner18Apr2013en.pdf

Scheiner, C. 2014. How Long Will the Petroleum Fund Carry Timor-Leste? In *Understanding Timor-Leste: Proceedings of the 2013 Timor-Leste Studies Association conference*. http://tlstudies.org/tlsa_confpro2013.html or http://www.laohamutuk.org/econ/model/ScheinerPetrolFund17Feb2014en.pdf with additional information at http://www.laohamutuk.org/econ/model/13PFSustainability.htm

Scheiner, C. 2014a. The Resource Curse in Timor-Leste. SSGM In Brief 2014/29. Canberra: ANU. http://ips.cap.anu.edu.au/publications/%E2%80%98resource-curse%E2%80%99-timor-leste-0

Stiglitz, J.E. 2014. The Price of Inequality: How Today's Divided Society Endangers Our Future New York: W.W. Norton.

Straits Times 31-Aug-2014. 15th Anniversary Timor-Leste Independence Referendum advertising supplement. Singapore. http://www.laohamutuk.org/misc/promotion/TLAdSingapore31Aug14.pdf or https://znx.cc/st/2014/08/31.pdf

Timor Post 21-May-2014. Timor Gap Preparadu Explorasa Bayu Undang, 11.

UNDP (United Nations Development Programme) 2011. Managing Natural Resources for Human Development: Timor-Leste National Human Development Report. New York: UNDP. http://www.laohamutuk.org/econ/HDI10/TLHDR2011En.pdf

UNDP 2014. Human Development Report: Sustaining Human Progress: Reducing Vulnerabilities and Building Resilience. http://hdr.undp.org/en/2014-report/download

UNDP 2014a. Timor-Leste Country Explanatory Note for Human Development Report. http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/TLS.pdf

US EIA (Energy Information Administration) 2015. Annual Energy Outlook 2015: With Projections to 2040. Also see associated statistical tables. http://www.eia.gov/forecasts/aeo/

The West Australian. 18-Feb-2015. Woodside to Cut Jobs, Shelve Sunrise. http://www.laohamutuk.org/Oil/Sunrise/2015/WAWoodsideSunrise18Feb2015.pdf

World Bank 2013. Timor-Leste Country Partnership Strategy for the Period FY2013–2017. Washington: World Bank. http://documents.worldbank.org/curated/en/2013/02/17493182/timor-leste-country-partnership-strategy-period-fy2013-2017

World Bank/PwC (PricewaterhouseCoopers) 2014. Paying Taxes 2015. Washington/London: PricewaterhouseCoopers. http://www.pwc.com/gx/en/paying-taxes/pdf/pwc-paying-taxes-2015-high-resolution.pdf