

Timor-Leste central government approach towards sustainability of petroleum revenues

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ABSTRACT

This research seeks to give an understanding of and answers to the question of how does Timor-Leste central government approach sustainability with respect to its petroleum revenues. In the context of Timor-Leste, sustainability is often associated with inter-generational equity and the avoidance of resource curse. Institutional theory and MCS package are two theoretical frameworks to help building the understanding of how Timor-Leste government approaches sustainability.

The empirical findings show that the institutionalized practices that government has adopted and implemented are influenced by the internal and external factors which taken place through coercive, mimetic and normative pressure. Timor-Leste reliance on petroleum revenues, the uncertainties associated with petroleum activities, the mandatory financial reserved put forward by the Constitution, learning from the mistake of resource curse and the success story of Norwegian model and with the help of IMF and other organizations and experts; all these factors influence Timor-Leste to institutionalizes the followings approaches; establishing Petroleum Fund Law and Petroleum Fund, investing the Fund in financial market and non-oil sector i.e. education, health, infrastructure and agriculture.

All these aforementioned institutionalized practices are argued to help Timor-Leste to achieve sustainability of petroleum revenues and hence the avoidance of resource curses. The evidence also shows the importance of reporting mechanisms i.e. budget and financial reports as management control tools to direct efforts towards the goal and to hold government accountable by measuring its performance. Budget is the most important of all prevailing controlling mechanisms. In doing so, it functions as planning and controlling mechanism. However, the effective of these reports are remained to be seen and is not covered in this research. This is what further research in Timor-Leste approach towards sustainability can be dealt with. A comparative study between Timor-Leste and Norway is also recommended for future research to look at.

Keywords: Sustainability, Petroleum Revenues, Government, Approach, Timor-Leste

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LIST OF ABBREVIATIONS

AAP	:	Annual Action Plan
ADB	:	Asian Development Bank
ANP	:	Autoridade Nacional do Petróleo-ANP (National Petroleum Authority)
BIS	:	Bank of International Settlement
BPA	:	Bank and Payment Authority
EITI	:	Extractive Industries Transparency Initiative
ESI	:	Estimated Sustainable Income
FRETILIN	:	Frente Revolucionária de Timor-Leste Independente
GoTL	:	Government of Timor-Leste
HCDF	:	Human Capital Development Fund
IAB	:	Investment Advisory Board
IFC	:	International Financial Corporation
IMF	:	International Monetary Fund
JPDA	:	Joint Petroleum Development Area
LNG	:	Liquid Petroleum Gas
MCS	:	Management Control System
MDGs	:	Millennium Development Goals
MoF	:	Ministry of Finance
MoPF	:	Ministry of Planning and Finance
NDP	:	National Development Plan
NGO	:	Non-Governmental Organization
RDTL	:	Republica Democratica de Timor-Leste
SDP	:	Strategic Development Plan
SIPs	:	Sector Investment Programs
TLEA	:	Timor-Leste Exclusive Area
UN	:	United Nations
UNDP	:	United Nations Development Program
USA	:	United States of America

USD : United States Dollar

WECD : World Commission on Environmental Development

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1. INTRODUCTION

This research aims at describing Timor-Leste central government's approach towards sustainability of petroleum revenues. In doing so, this research discusses the established regulatory frameworks such as the Timor-Leste Petroleum Fund Law and Petroleum Fund. The investment strategy of the Fund, its organization, management and investment in non-oil sector are also presented. This introductory chapter commences with the presentation of brief background information on the topic and the rationale for doing this research.

1.1 Background on the topic

Broadly speaking, it seems that there is a two story of contradictory nature exist in countries which are endowed with abundant natural resources. On the one hand, the experience of many resources rich countries tend to show that the endowment of abundant natural resources bring about curses instead of blessings. This phenomenon is often referred to as "resource curse". It is a paradox that suggests that resource rich countries tend to grow more slowly than resource-poor ones (Sachs & Warner, 1995). Mehlum et all (2005) support this claim by stating that countries which have substantial deposits of oil, gas, diamond and other minerals, tend to have far lower economic growth, worse public institution and governance, corruption and more conflicts than countries of poor-resources-economies. These countries are found to be a fertile ground for social conflict, authoritarianism, and poor standard of living (Ashafa, 2008). Many countries have ended up poorer and societies are more divided after they discovered oil and gas. Many of them are associated with negative developments like: poverty and lower economic growth, prone to conflict, war and civil strife, corruption and unrepresentative government" (MoPF, 2004). Therefore, Sachs and Warner (2001) conclude the existence of negative correlation between resource abundance and economic growth. On the other hand, the successful stories of other resource rich countries like Norway and Brunei-Darussalam, to certain extent, defy this notion of resource curse. There are at least hopes and solutions suggest that the so-called resource curse can be avoided.

Timor-Leste is an oil dependent country since petroleum revenues contribute to nearly 90 % of Timor-Leste's government total revenues. But it does not imply that Timor-Leste has a great substantial reserve of petroleum. To the contrary, Timor-Leste's petroleum reserves are limited and exhausted within a period of just 20-39 years (MoPF, 2004). Consequently, when these petroleum resources are fully exploited or depleted, petroleum revenues will also cease to flow in. Timor-Leste seems to take into account the failed and successful stories of resource rich countries. Such concern is reflected in the Public Consultation Discussion Paper (2004) that "the experiences from other countries show that petroleum wealth can easily become a curse instead of a blessing" (MoPF, 2004). Timor-Leste will also face these challenges in years to come. It is acknowledged in National Development Plan (NDP) that "a sound administration and sustainable utilization of the oil and gas revenues" is one of the challenges Timor-Leste faces (Planning Commission, 2002, p.24). Thus, "it is imperative that Timor-Leste avoids these threats" (MoPF, 2004). In doing so, petroleum revenues should to be wisely managed to benefit current generation in the form of delivering economic growth, social services and political stability and the entitlement and choices of future generations (MoPF, 2004).

There are two important aspects are emphasized here when talking about sustainability of petroleum revenues. In the case of Timor-Leste, sustainability is referred to the achievement of the two most important goals; (a) the benefits for both current and future generation and (b) the avoidance of resource curse. The question of how to achieve these goals is the main interest of this research. In doing so, this research examines and describes Timor-Leste central government approach to ensure sustainability of petroleum revenues.

1.2 Research problem

Sustainability is the main topic of this research. It is one of the top priorities and topics of discussion for Timorese government, Parliament, civil societies and general public alike. It is often referred to as "the matter of national interest". A number of researches have been produced on this topic, for example the discussion on environmental, economic and social sustainability (triple-bottom-line), corporate social responsibility (CSR), fiscal sustainability, and sustainability of public fund. Ball and Milne (2005) discuss the link between sustainability and management

control. Both present the contribution of management control towards the achievement of sustainability. In addition, Deegan (2007) focuses on organizational legitimacy as a motive for organization practicing sustainability reporting. It is found that organization provides sustainability reporting is mainly motivated to gain legitimacy. With a different approach, Larrinaga-Gonzales (2007) examines the same topic as Deegan (2007) from neo-institutional perspective. The conclusion derived is that institutionalization of sustainability reporting is achieved through coercive, normative and mimetic mechanisms.

In the case of Timor-Leste, a number of researches have been carried out on the topic of sustainability. For instance, Lundahl and Sjöholm (2006) examine the possibility of Timor-Leste using its petroleum revenues to develop its economy. Drysdale (2007) discuss the institutional choices available for Timor-Leste to manage its natural resource wealth wisely to avoid resource curse. Lao Hamutuk, a local non-governmental organization (NGO), since the beginning of 2000 regularly publishes numerous documents on a wide range of issues concerning Timor-Leste petroleum resources and revenues i.e. resource curse, sustainability of petroleum fund, transparency and accountability. In addition, international organizations such as International Monetary Fund (IMF) and the World Bank also publish a number of reports on Timor-Leste petroleum sector by mostly focusing on macro-economic issues.

This research approaches the topic from a different angle. From theoretical perspective, institutional theory and Management Control System (MCS) package are used to discuss the rationale behind government approach towards sustainability. In another word, these theoretical frameworks help the researcher to understand the driving force trigger the need for ensuring the sustainability of petroleum revenues. This research sets to include approaches taken by all government who have been power since 2002. In doing so, this research, therefore, seeks to answer the following research problem;

How does Timor-Leste central government approach sustainability with respect to its petroleum revenues?

Broadly speaking, the answers to this research question can be classified into three main categories of questions;

- (1) What is sustainability? And why it is so important? (from Timor-Leste's perspective)
- (2) What government has done to achieve sustainability?
- (3) What are the challenges encountered?

Before moving on to the next section, the definition of important concepts in this research needs to be clarified. The main concepts of this research are government, approach, sustainability, and petroleum revenues.

1.3 Main concepts of the research

This section defines and clarifies the important concepts in this research. The aim of doing so is to limit the research scope and context. Without a clear definition of these concepts, the understanding of the whole message of the research can also be problematic. The main concepts of this research are government, approach, sustainability, and petroleum revenues. Government, in this context, is defined as “the organ of sovereignty responsible for conducting and executing the general policy of the country” and “shall comprise of Prime Minister, Ministers and Secretary of State” (RDTL Constitution, 2002).

In addition, approach per se has a lot of meanings. However, adapting into the context of this research, it means “what government has done”. Approach could be in many forms i.e. policies, rules and regulations, policies plans, and programs. They could be past achievements or future intentions or both. Furthermore, sustainability is a very broad concept in itself and covering them all is a mission impossible. Sustainability, in this context, means the management of petroleum resources to benefit both current and future generation and avoid resource curse. Petroleum revenues are all petroleum revenues defined by Article 6 of the Petroleum Fund Law (see Appendix 1), and it may later include revenues from the exploitation of other minerals or non-renewable resources.

1.4 Research limitations

There are a number of limitations that are encountered when undertaking this research. First of all, sustainability is a very broad topic in itself. It is impossible to cover them all in such a short-period of time. Thus, this research focuses only on the sustainability of petroleum revenues in the

case of Timor-Leste. The scope of sustainability is therefore narrowed to sustainability of petroleum revenues, which basically means “meeting the needs of current generation without compromising the ability of future generation to meet their needs” and the avoidance of resource curse. Secondly, time limitation prevents this research from achieving a comprehensive data collection. The one-semester period allowing for writing this research is not sufficient to obtain a comprehensive data. Research on this topic requires more resources than it has now. In doing so, a comprehensive data can be achieved, which is not possible to do in current time allocation for doing this research. Time limitation also prevents me from returning back interview transcripts to the informants for verification. None of the interview transcripts are given back to the informants for verification. Thus, the more time is given for this research, than more time is spared for the verification of data collected.

1.5 Research structure

The remainder of this research will be structured in the following order. Chapter 2 presents a brief historical development and facts about Timor-Leste. In this chapter, topics on Timor-Leste historical, economic and social facts, and Timor-Leste petroleum sector, petroleum wealth and revenues are covered. Chapter 3 discusses sustainability trend and concept. In addition, this chapter also presents two main theoretical frameworks for this research namely institutional theory and MCS package. Chapter 4 focuses on philosophical foundation of the research, data collection method, data analysis, validity and reliability of the research. Chapter 5 presents empirical data that have been collected using both primary and secondary data collection methods. In doing so, this chapter describes the established frameworks such as Petroleum Fund Law and Petroleum Fund, the investment strategy of the Petroleum Fund. The investment of Petroleum Fund in both financial market and non-oil sector are also examined. The contribution of reporting mechanism towards sustainability is also presented. Towards the end of this chapter, the challenges encountered during the whole process are also discussed. Chapter 6 provides a discussion and interpretation of the findings in the light of prescribed theoretical frameworks. Chapter 7 summarizes the whole findings of this research and provides suggestion for future research.

2. TIMOR-LESTE AT A GLANCE

The present chapter presents an overview of Timor-Leste petroleum sector, petroleum wealth and revenues. The intention is to understand the magnitude of Timor-Leste's reliance petroleum revenues for its economic development and the importance of ensuring that these resources are well managed in order to achieve its sustainability and to avoid resource curse.

2.1 A brief historical development

Geographically the República Democrática de Timor-Leste (RDTL), formerly known as East Timor, is an island country located in Southeast Asia. It is in the eastern half of Timor Island lies between the Pacific Ocean and Indian Ocean (see map in Appendix 2). The country is sandwiched between two big neighboring countries; Indonesia and Australia. Historically, Portugal colonized the tiny-country in the 16th century. The colonization lasted for more than 400 years. Frente Revolucionária de Timor-Leste Independente (FRETILIN¹) unilaterally declared Timor-Leste's independence on 28 November 1975 when Portugal left its Timor colony in 1974. Indonesia, few months later, invaded the newly independent country. The invasion lasted for 24 years. However, through a public consultation (referendum) on 30 August 1999 under the auspice of the United Nations, the majority of Timorese voted overwhelmingly for separation from Indonesia. Timor-Leste regained its independence and international community formally recognized it on 20 May 2002.

2.2 Economic and social facts

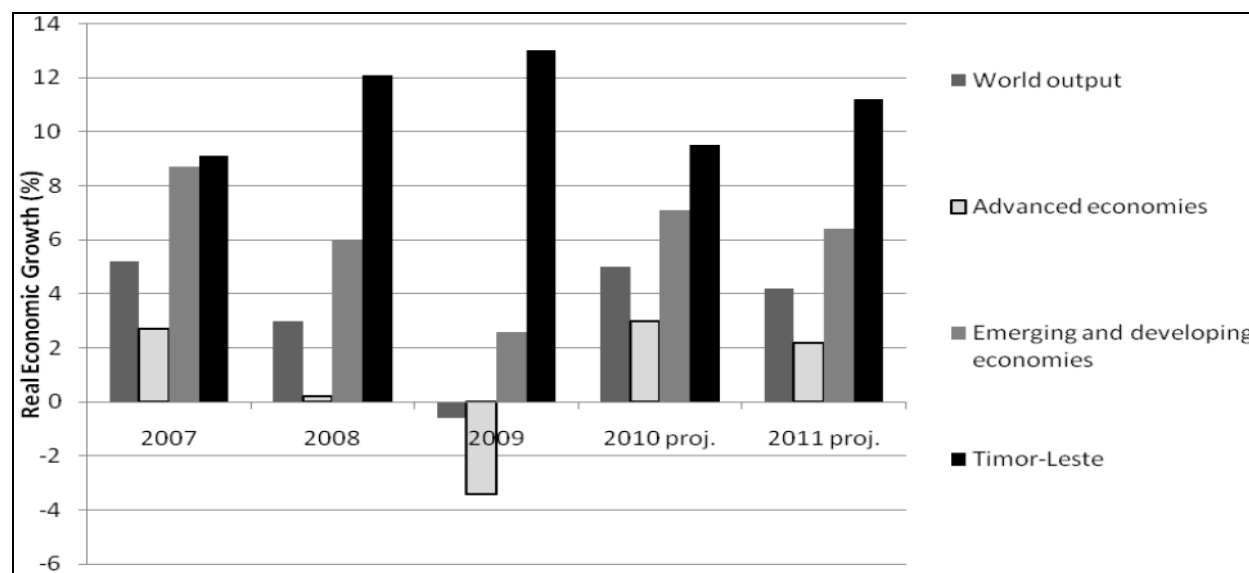
Timor-Leste is a post-conflict and low income country where about 50 % of its population lives below poverty line. Eighty percent of the population is dependent on agriculture, forestry, and fisheries for their livelihoods. In 2007, 85% of all Timorese were employed in agriculture

¹ *Frente Revolucionária de Timor-Leste Independente* (FRETILIN); Revolutionary Front for an Independent East Timor. The party began as a [resistance movement](#) that fought for the independence of Timor-Leste, first from [Portugal](#) and then from [Indonesia](#), between 1974 and 1998. It was originally called the Timorese Social Democratic Association (ASDT). After Timor-Leste gained its independence from Indonesia, FRETILIN became one of several [parties](#) competing for power in a multi-party system.

(RDTL State Budget, 2011). However, this sector is not well-developed yet to a level where revenues generated from this sector can be relied upon to sustain the economic development of the country. Therefore, petroleum revenues are currently the main source of income government relies on to develop the country. Private and public sector, each employs less than 10 % of total labor force. According to 2004 Census unemployment in Dili, capital city of the country, was estimated to be at 23 % (World Bank & ADB, 2007). In addition, as of 2010 Timor-Leste has a population of approximately 1.1 million (National Directorate of Statistic, 2010). The education level is extremely low with illiteracy rate remains high at 77 % (World Bank & ADB, 2007).

Timor-Leste’s economy performs considerably well in comparison to other countries around the world even during global financial crisis. Figure 1 shows that Timor-Leste economy grew at more than 12 % in 2008 and 2009 respectively in a time where most advanced economies experienced negative growth. The expansion of the economy in those years was triggered by high government’s expenditure.

Figure 1: Real economic growth 2007-2011



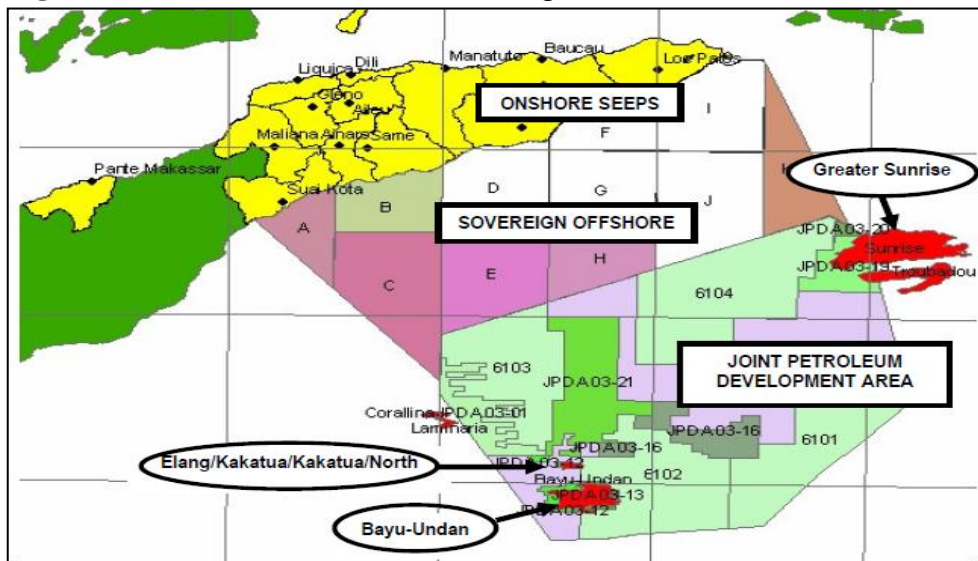
(Source: RDTL State Budget, 2011).

It is projected that the economy will grow at more than 9 % in 2010 and 2011. Apart from oil and gas, Timor-Leste has potentials economic resources of coffee, sandalwood, marble and tourism (Molnar, 2005). Its export is extremely low, with coffee account for about 90 % of non-oil exports. Consequently, Timor-Leste’s imports more than its export resulting in a substantial trade deficit.

2.3 Petroleum sector

Timor-Leste is endowed with deposits of oil and gas on both onshore and offshore. The exact size of the petroleum reserve is hard to determine and geological reports were destroyed in the 1999’s conflict (Lundahl & Sjöholm, 2006). A mapping of Timor-Leste’s natural resources which was conducted in 2002 shows that Timor-Leste possesses mineral and hydrocarbon resources and a seismic survey completed in 2005 indicated the possibility of large endowments of oil and gas is high (Lundahl & Sjöholm, 2006). Timor-Leste’s petroleum sector is often discussed in term of three “petroleum provinces” (Drysdale, 2007). They consist of onshore seeps, sovereign offshore or Timor-Leste Exclusive Area (TLEA) and Joint Petroleum Development Area (JPDA) (see Figure 2 below). The three provinces differ in terms of their size, development status and the nature of their institutional and administrative arrangements.

Figure 2: Timor-Leste’s onshore, sovereign offshore and JPDA



(Source: Drysdale, 2007).

In regard to the onshore seeps, as it is depicted by Appendix 3, much of the potential oil and gas seep lie in the west of the country, particularly in Suai area and to east of the country in the area of Aliambata. Most of these onshore seeps have not been developed yet (RDTL, 2010). It is confirmed by President of the Autoridade Nacional do Petróleo-ANP (National Petroleum Authority) that there have not been any activities taken place on onshore due to (a) the absence of adequate land and property laws and (b) limitation of knowledge about available resources (Informant 2, 2011). A geological mapping is currently conducted by Timorese geologists and it aims to geologically map out Timor-Leste's resources.

The Joint Petroleum Development Area (JPDA) is located in Timor Sea, which approximately 500 km to northeast of Darwin and 220 km southeast of Suai, Timor-Leste (see Appendix 4). This area is defined under the Timor Sea Treaty between Timor-Leste and Australia. Gas reserves at this particular field are estimated to be about 500 million barrels of condensate and proven reserves of 4 trillion cubic feet of gas and other Liquid Petroleum Gases (LNG) (RDTL, 2010). These reserves are expected to last for about twenty years, with estimated value of 6 to 7 billion of dollars (Lundahl & Sjöholm, 2006). Most Timor-Leste's oil and gas production currently takes place in JPDA particularly in the Bayu Undan field where the production started in April 2004 (Lundahl & Sjöholm, 2006). As it is shown in Figure 4, Bayu Undan is estimated to produce more than 20 million barrels of liquids each year during 2006 -2016 and 60 million barrels of LNG in 2007. The latest report by ANP (2011) shows that Bayu Undan; within the periods 2004-2009, has produced total liquids of more than 94 million standard cubic meters (sm³).

The recent discoveries are Kuda-Tasi with around 12 million barrels of recoverable oil, Jahal with around 10 million recoverable oil and Kiten field, which was discovered in 2008 with around 34 million barrel recoverable reserve. It is expected that Kitan will be on production towards October 2011. Greater Sunrise, which was discovered in 1974, is the largest of the petroleum field identified so far. It is estimated to contain 350 million barrels of liquids and 7.7 trillion cubic feet of gas (Drysdale, 2007). It is estimated that part of the Timor-Sea (Gap) that

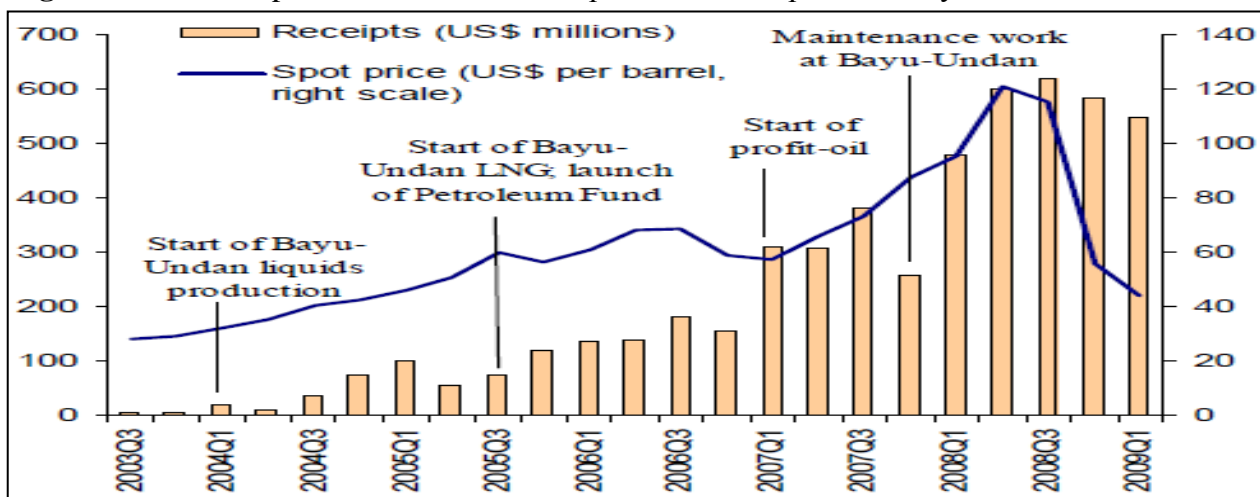
belongs to Timor-Leste contains half a billion barrels of light oil and some 10 million cubic feet of gas (Lundahl & Sjöholm, 2006).

In addition, blocks within Timor-Leste Exclusive Area (TLEA) are covering a total area of 12,183 km² (see Appendix 4). In 2005, 11 acreage areas were released for exploration and five areas have been awarded to companies for exploration (Drysdale, 2007). The production of some of the areas explored in 2006 is expected to start in 2013. In addition, the results of a 3D and 2D seismic survey carried out in 2008 were compiled and interpreted for delineating prospect for the drilling of two wells planned for 2010 (ANP, 2009). It can be summarized that much of Timor-Leste oil and gas lies in Timor Sea. The current production only takes place in JPDA and some exploration are carried out in few blocks within TLEA and there is no activities taking place in onshore oil and gas seeps.

2.4 Petroleum wealth and revenue

The IMF reports that Timor-Leste’s total petroleum wealth is currently estimated to be at \$24.3 billion or \$22,000 per capita (IMF, 2011). So far, oil and gas production takes place only in JPDA, particularly in Bayu Undan field. It can be seen in Figure 3 below that since 2004, when Bayu Undan liquids production started, there has been steady increased in petroleum revenue flows to the government of Timor-Leste.

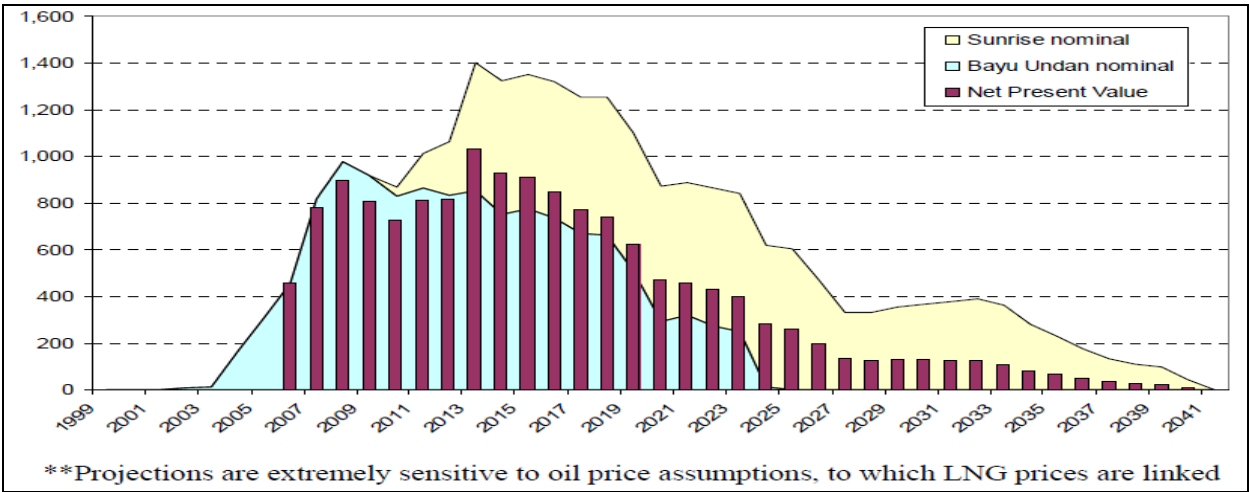
Figure 3: Crude oil price and Timor-Leste’s petroleum receipts from Bayu Undan



(Source: IMF, 2009).

The highest receipt, so far, has been in 2008 with a record high of nearly \$ 600 million. The higher revenue at that time is attributed to high oil price of more than \$120 per barrel and also due to progressive tax regime and higher production activities. Bayu Undan is estimated to generate about \$ 9.4 billion in accumulated revenue for Timor-Leste over the next 15-20 years (World Bank & ADB, 2007). Revenues from this field are projected to decline in 2015 towards zero in 2025 (see Figure 4 below).

Figure 4: Timor-Leste Projected Petroleum Revenue Profile, 1999-2041** (USD million)



(Source: IMF, 2009).

In addition, Greater Sunrise, the biggest oil field, is estimated to generate around \$ 24 billion in revenues over the life of the field and half of these revenue will go to Timor-Leste (World Bank & ADB, 2007). The revenue from this field, as Figure 4 above presents, is projected to reach its highest point to a record of \$ 1,400 million of oil revenue in 2013 and start to decline in 2019 from \$ 1,200 million to zero, its full exploitation, in 2041. As it can be seen that Timor-Leste has a small reserves of oil and gas and these resources will last for only 20 – 40 years.

3. THEORETICAL FRAMEWORK

This chapter is divided into two main sections. The first section provides an overview of the trend and concept of sustainability in general. The second section of this chapter presents an understanding of institutional theory and management control system (MCS) package. These two theoretical frameworks are used in the discussion chapter to elaborate on and interpret the findings. Institutional theory basically deals with the influence of external and internal factors in shaping the behavior of organization. In this research, institutional theory is used to examine the process of and rationales behind the institutionalization of sustainability. In doing so, it seeks to identify and describe factors that influence Timor-Leste government to adopt certain rules, regulations, policies, plans and programs to pursue the sustainability of petroleum revenues. In addition, MCS package, which mostly focuses on the technical aspects, is used to assess the functions and contributions of existing controlling mechanisms towards sustainability. In doing so, the roles of budgets and other form of reports are examined in term of their functions as management control tools towards the achievement of sustainability.

3.1 Sustainability trend and concept

Lafferty (2004) stated that “sustainability is now like democracy; it is universally desired, diversely understood, extremely difficult to achieve and won’t go away” (cited in Holden & Linnerud, 2007). The underlying implication is that sustainability is a concept, trend, and goal that its importance cannot be ignored anymore. As a concept, numerous literatures are dedicated to study it. As a trend, everyone is keen to be identified with and practice it. As a goal, organizations, both in public and private sector, incorporate it into one of their organizational goals.

Broadly speaking, sustainability took off and caught the attention of everyone, be it at local, regional and international level, after the Brundtland Commission Report’s in published 1987 (Ball & Milne, 2005). Since then, the United Nations (UN) took this issue onboard and made it one of its top priorities (Daly, 1991). The Brundtland Report laid the ground work for the next milestone events that happened since then i.e. 1992 Earth Summit, the adoption of Agenda 21,

the Rio Declaration and the eventual establishment of Commission on Sustainable Development. The UN effort, by taking the leading role in campaigning for sustainability, was culminated with signing of the UN Millennium Declaration by the world leaders in 2000. The affirmative action taken was the call for a change in the current unsustainable pattern of production and consumption to preserve the interest of our future welfare and our descendants (UN, 2000).

Since the signing of Millennium Declaration, many national governments initiated programs aiming at national sustainability (Dyllick & Hockerts, 2002). In addition, private sector, particularly big companies, starts to realize the importance of sustainability. Ball and Milne (2005) also observe the similar phenomenon. Both stated that business starts taking up the practice of social and environmental reporting (p.320). Holliday (2001) commented that sustainability is now becoming one of the preconditions for doing business. All in all, it cannot be denied that sustainability is an important concept, trend and goal has caught the attention of the world community; either it is public or private sector, at local, regional or international level. The aforementioned developments are indications which show that sustainability has indeed become a global issue that can no longer be ignored. So, what is actually sustainability?. The next section will deal with this question.

The sustainability concept takes into the world stage after the Brundtland Commission's report titled "Our Common Future", headed by G.H.Brundtland, then Prime Minister of Norway in 1987 (Ball & Milne, 2005). The Commission defined sustainability as "meeting the needs of the present generation without compromising the ability of future generations to meet their needs" (WCED, 1987). However, no progress was made on reaching a common consensus on a one and only definition of sustainability. Rather there is a tremendous diversity of definitions and interpretations (Holden & Linnerud, 2007, p.175). The current literatures describe only the necessary conditions for sustainability or ways of achieving sustainability, or what sustainability is not, but few of them actually define the concept (Brown et al, 1987). Despite attempts have been made to define it, but the concept is contested and ambiguous and our understanding of it is far from universally accepted (Ball & Milne, 2005, p.315). Thus, several authors come to the conclusion that "sustainability concept is defined so broadly as to be open to widely disparate

interpretations” (Crane & Matten, 2007). The different interpretation of the concept may be result of researchers have variety of opinions, approaches, methodologies and philosophies when defining the actual meaning of sustainability (Nishijima, 2009). Hence, “the whole concept is in danger of floating away on a sea of inoffensiveness” (Werbach, 2006). A useful definition, therefore, must specify explicitly the context as well as the temporal and spatial scales being considered (Brown et al, 1987). At the end, a common and accepted definition of sustainability is still remained to be seen.

Having looked at the fact no agreement is reached regarding a unified definition of sustainability, but traditionally, when talking about sustainability; it is often referred to the environmental concern on things like reforestation, land degradation, pollution, waste and climate change. As time progresses, sustainability moves beyond its traditional focus to include other important and inseparable aspects such as the economy and society. Since then sustainability is defined as “the long-term maintenance of systems according to environmental, economic and social considerations” (Crane & Matten, 2007). The three elements are often referred to as triple-bottom-line of sustainability.

From environmental perspective, the goal of sustainability is “to sustain global life-support systems indefinitely” (Goodland, 1995, p.6). Global life-support system, in this case, is the earth with all things it possesses. The basic principle of sustainability, from environmental perspective, is about the effective management of physical resources, or global life support system, so that they are conserved for the future (Crane & Matten, 2007). These physical resources are things like food, water, air, energy and other sink capacities have a finite life. Sustainability is, therefore, concern about maintaining the life of these resources. In another word, it is about maintaining natural capital or not depleting them (Goodland, 1995). A sustainable human activity is carried out to the extent that they do not jeopardize the life of these physical resources. From economic perspective, sustainability is a way of thinking to ensure that future generation would not be disadvantaged by present generation’s activities and choices (Crane & Matten, 2007). Our economic activities should at least taking into account the preservation of nature supporting system and be carried out in a sustainable way in order for present generation to

maximize their welfare without compromising the ability and opportunity of future generation to do the same. The exploitation of nature should be within the limit of its carrying capacity and most importantly benefit both present and future generation alike. From social perspective, sustainability is about social justice (Crane & Matten, 2007). The benefits should be accrued to local population and local culture and tradition to be preserved. The exploitation of nature should bring greater benefits to the society.

Having discussed the three elements of sustainability, it seems that a comprehensive definition of sustainability can be found in Ball and Milne (2005). Both authors define sustainability as “the efficient allocation of resources over time, but also a fair distribution of resources and opportunities between the current generation and between present and future generations, plus a scale of economic activity that does not exceed its ecological life support system” (p.316). This definition emphasizes three important things; the efficient allocation of resources, inter-generational equity and the preservation of the nature. In essence, it encompasses the three elements of sustainability. Taking this definition into account, in this research sustainability refers to two important things namely inter-generational equity; “meeting the needs of current generation without compromising the ability of future generation to meet their needs” and the avoidance of resource curse. Having looked at the trend and concept of sustainability and its applicability in this research, the next section presents overview of institutional theory and MCS package.

3.2 Institutional theory perspective

The following section presents an overview of institutional theory and its three isomorphic mechanisms. The purpose of employing institutional theory as a theoretical framework is to explain why organizations adopt certain practices, policies and procedures (Meyer & Rowan, 1977, DiMaggio & Powell, 1983), and how they should behave (Powell & DiMaggio, 1991), and their actions in response to environmental pressure (Hoffman, 1997). In this research, institutional theory is used to provide answer (s) to questions such as “why Timor-Leste cares about sustainability?”, “what government has done to ensure the achievement of sustainability?” and “why government did so?”. Institutional theory deals with what and how external and

internal factors influence government actions. It helps to identify and interpret the rationales underlying the government's plans, policies, and programs in pursuing sustainability of petroleum revenues.

Government is an association of decision-makers or a group of people (Dahl, 1989), which according to Scott (2001) could be categorized into a social system. Therefore, from institutional theory perspective, government has “desire and needs to adopt and adheres to rules and practices created by the external environment” (Meyer & Rowan, 1977; DiMaggio & Powell, 1983). The environment is complex and multiple characters (DiMaggio & Powell, 1983) and it can be internal and external factors. It can be in the form of organizations and organizational fields (Unerman et al., 2007). Organizational field is those organizations that collectively constitute a recognized area of institutional environment (DiMaggio & Powell, 1983). The institutional environment can be in the form of public opinion, views of the constituents, social prestige, laws, regulations, and courts (Meyer & Rowan, 1977). The institutional environment either directly or indirectly exerts pressure on organization to comply with established and widely accepted rules and practices. But what actually constitute “desire and needs” of the organization to comply with the expectations of institutional environment remains unclear.

Ingram and Simons (1995) argue that organizations yield to external pressure because they operate in a social network whereby organizational practices are caused by and influenced through social rules and rules of thumb. In doing so, organizations are basically “driven to incorporate the practices and procedures defined by prevailing rationalized concepts institutionalized in society” (Meyer & Rowan, 1977). The aim of such compliance is for organizations to gain their legitimacy, resources, stability and prospects for survival (Meyer & Rowan, 1977). Organizations that face resource scarcities are likely to adopt the rules and practices that have been made mandatory by the institutions by which they are dependent (Fein & Mizuchi, 1999). When legitimacy becomes important, conformity with and to the expectation of institutional environment is merely a formality gesture. Legitimacy is “a condition reflecting cultural alignment, normative support or consonance with relevant rules or laws” (Scott, 1995, p.45 cited in Larrinaga-Gonzales, 2007). Thus, many organizations resort to ceremonial

conformity by adopting institutionalized products, services, techniques, policies and programs (Meyer & Rowan, 1977).

Adherence to expectations of institutional environment is materialized through institutionalized activities, which basically actions that last for certain period, socially accepted, resistant to change and not directly dependent on rewards, or performance measurement (Oliver 1997). The institutionalization or isomorphism as DiMaggio and Powell (1983) called it, occurs through three different mechanisms; coercive, mimetic and normative.

The first medium of institutionalization is through *coercive mechanism*, in which organization is directly or indirectly coerced or forced to conform to pressure or influence from the environment. In another word, organization has no choice for not doing it. Williams et all (2009) assert that in this process, organization is forced, persuaded and invited to be part with other environmental members. DiMaggio and Powell (1983) argue that organization goes through this process because of political influence and problem of legitimacy. As they both further stated that coercive pressure occur when (a) organization is dependent on other organizations, either for resources or survival and (b) expectations from society or social network in which the organizations operate. In addition, when organization is fear of and tries to avoid sanctions (Scott, 1995, cited in Williams et all, 2009).), they have no choice, but to yield to institutional environment. Coercive pressure could be exercised by others who have the ability to apply formal and informal pressure and it can, for example, in form of government rules and regulations (Williams et all, 2009).

The second medium of institutionalization is through *mimetic mechanism*. To mimic means to imitate or to follow others. When facing with uncertainties, organizations often “imitate those peer organizations that seem to be more successful and legitimate” (Larrinaga-Gonzales, 2007). DiMaggio and Powell (1983) find that organization goes through this process when their goals are ambiguous or external environment creates uncertainty. The modeled organizations are seen as “convenient source” of information to reduce uncertainty (Williams et all, 2009). Modeling after other organizations’ practices that are acceptable by the environment can also prevent the

organizations from criticism (Williams et al., 2009). Imitating the best practice of modeled organization, organizations can gain support and avoid criticism if difficulties are encountered along the process. In this case, organization mimics other organizations in order to gain legitimacy or support.

The third medium of institutionalization takes place through *normative mechanism*. Norms, at least in theory, are designed to control Actions (Bargevörn et al., 1995). Normative pressure enables organization to act according to values and norms (DiMaggio & Powell, 1983). Norms and values are established by professionalization, formal education and professional networks, trade associations, interest groups and public opinions and society. According to Williams et al. (2009), these groups exercise pressure to organization to embrace established norms and behaviors. The purpose of organization adhering to norm and values, according to Scott (1995 cited Williams et al., 2009).) is (a) they are expected to act according to social expectation or it is what is expected of them, and (b) because of moral and ethical obligation. The influence of normative pressure becomes more influential when such established norms and values is widely accepted and approved by the society. Therefore, organization conformity to these norm and values affect social acceptance of the organization and hence influence its success and survival and hence increase legitimacy.

3.3 Management control system (MCS) as a package

This section discusses the elements of MCS package particularly looking at the contribution of planning, cybernetic, reward and compensation, administrative and cultural controls towards the achievement of the organization's objectives. The MCS package is used to focus the technical aspects of controlling mechanisms. It seeks to describe and explain how these elements MCS package contribute to the achievement of sustainability of petroleum revenues. In this research in the light of MCS package, attention is therefore focused on examining the contribution of budgets and other type of reports required by laws and regulations towards the achievement of sustainability.

Anthony (1965) defines management control as “the process by which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organization’s objectives” (cited in Otley et al, 1995, p.42). In essence, management control is a middle link between the strategic planning process and the operational control of the organization. The former refers to goals and objectives for the whole organization over the long-term period, while the latter is concerned with the activity of ensuring that immediate tasks are carried out. Management control is, therefore, the process that links between the two (Otley et al, 1995, p.42). The role of management control is therefore to ensure that operational control is on the right track towards the achievement of strategic plans.

The latest development of management control is the emergence of MCS package. The key features of this framework are its five types of controls in the typology namely; planning, cybernetic, reward and compensation, administrative and cultural controls (see Table 1 below). The strength of this framework lies in the broad scope of the controls in the MCS as a package, rather than the depth of its discussion individual systems (Malmi & Brown, 2008, p.291). This framework approaches management control in a comprehensive way instead of emphasizing the individuality of management control. In this research, attention will be focus mainly on planning, administrative controls and selected cybernetic controls.

Table 1: Management control system package

Cultural Controls						
Clans		Values				Symbols
Planning		Cybernetic Controls				Reward and Compensation
Long range planning	Action planning	Budgets	Financial Measurement Systems	Non-Financial Measurement Systems	Hybrid Measurement Systems	
Administrative Controls						
Governance Structure		Organization Structure			Policies and Procedures	

(Source: Malmi & Brown, 2008, p.291).

Planning is an ex-ante form of control (Malmi & Brown, 2008). It basically establishes goals and objectives that an organization sets to achieve. In doing so, it sets out benchmarks for organization's goals and objectives and hence standard performance expected from the contribution of its members. Planning functions as control by aligning organization's activities towards the achievement of organization's goals and objectives (Malmi & Brown, 2008). Action planning are goals and actions established for immediate future usually a 12-month period. Long-range planning are goals and actions established for medium and long-run.

Cybernetic controls is "a process in which a feedback loop is represented by using standards of performance, measuring system performance, comparing that performance to standards, feedback information about unwanted variances in the systems, and modifying the system's comportment" (Malmi & Brown, 2008, p.293). Cybernetic control based on Malmi and Brown (2008, p. 292) have five basic characteristics:

- a. Measures that enable quantification of an underlying phenomenon, activity or system;
- b. Standards of performance/target to be met;
- c. A feedback process that enable comparison of outcome of activities with standard;
- d. Variance analysis arising from feedback, and
- e. Ability to modify system's behavior or underlying activities.

Cybernetic control largely emphasises on action taken in regard to the feedback information received. Feedback information is the gap between the actual level and the reference level of a system parameter. It reveals unwanted variances or discrepancies that are resulted from comparing actual performance to standards. Thus, action taken to resolve discrepancies based on feedback information is the core characteristics of cybernetic control. There are four basic cybernetic systems; budgets, financial measures, non-financial measures and hybrids that contain both financial and non-financial measures (Malmi & Brown, 2008).

Administrative controls direct and monitor organization's member's behavior (organization design and structure), uphold accountability (governance) and clarify tasks specification (policies and procedures). Governance encompasses formal lines of authority and accountability and regular coordination between related entities (Malmi & Brown, 2008). Policies and procedures

are the specification of the processes and behavior within an organization. They can include action controls, i.e. behavioral constraints, pre-action reviews and action accountability (Malmi & Brown, 2008).

3.4 Summary

In this research, sustainability is referred to two important things; inter-generational equity and the avoidance of resource curse. This research seeks to give an understanding of Timor-Leste government approach towards sustainability in the light of institutional theory and MCS package. The former mainly focuses on internal and external factors that influence government's actions to adopt certain rules, regulations, policies, plans and programs in the process of ensuring the sustainability of petroleum revenues. This theory argues that organization has desires and needs to comply with institutional environment or social rules and rules of thumb established by social networks. In doing so, to some extent organizations merely seek for legitimacy and support. Thus, compliance becomes a ceremonial gesture by institutionalizing certain rules, regulations, policies and programs established and desired by institutional environment.

The institutionalization takes place through coercive, mimetic and normative mechanisms. In coercive mechanism, organizations are forced to comply with influence from the environment. Such pressure can come from political influence and problem of legitimacy. In mimetic mechanism, organizations imitate or copy the experience of modeled and successful organization. This type of pressure mostly happens when organizations face with uncertainty. In normative mechanism, organizations embrace and adhere to norms and values established by professional networks and experts that organizations become part of and rely upon.

Management control is the process that links strategic planning and operational control. In doing so, it ensures that operational control is carried accordingly towards the achievement of strategic plans. The latest development of management control is the emergence of MCS package. The model focuses on technical aspects of the controlling mechanisms. It consists of five typologies; planning, cybernetic, rewards and compensation, administrative and cultural controls. In this

research, MCS package intends to understand the function and contribution budgets and other types of reports towards the sustainability of petroleum revenues.

4. METHOD

This research, which is qualitative and interpretative in nature, uses two main data collection techniques namely interview and documentation to gather data. This chapter is written to provide an overview of how these techniques are used to collect data, data analysis process, and the implications on validity and reliability of the data. This chapter starts with the discussion of philosophical position for this research.

4.1 Research paradigm

Paradigm is a worldview or belief system that guides the researchers (Guba & Lincoln, 1998). It is the progress of scientific practice based on assumptions of people about the world (Collins & Hussey, 2003). Broadly speaking, there are two contrasting views of how social science research should be conducted.

Positivism, which is often associated with quantitative research, argues that, “social world exists externally and its properties should be measured through objective methods” (Easterby-Smith, Thorpe & Jackson, 2008, p.57). Positivism emphasizes on an objective and independent access to social reality. To the contrary, interpretivism states that “reality is not objective and exterior, but it is socially constructed through individual or collective definitions of the situation” (Taylor & Bogdan, 1984) and “given meaning by people” (Easterby-Smith et al., 2008, p.58). Therefore, “the task of social scientist is to appreciate the different constructions and meanings that people place upon their experience” (as Easterby-Smith et al., 2008, p.59). This philosophical paradigm recognizes the embeddedness of reality. Thus, in order to get the meaning of reality itself, an objective and independent access to this reality, as propagated by positivism, could not be possible. The involvement of researcher, to some extent, is required in order to uncover the embedded meaning of reality.

This research aims to study government approach towards sustainability of petroleum revenues. In doing so, it relies mostly on qualitative data, which is collected through interview and documentation. Interview in particular enables researcher to extract information from the

informants regarding their views on government approach towards sustainability. Reality is constructed by asking and responds to interview questions. Without interview this reality would not exist. Researcher presence is to facilitate the informants to construct the reality. Having discussed the two paradigms, it seems that this research falls into qualitative and interpretivist paradigm.

4.2 Data collection method

Method is “a procedure, tool, or technique used by researcher to generate data, analyze data or both” (Schwandt, 1997. p.91). In another word, method is a technique or a number of techniques to collect, organize and interpret data. Research question ultimately determines the choice of data collection method. Yin (2009) provides five sources of evidence namely; documentation, interview, direct observations, participant observation and physical artifacts. It is emphasized that none is these methods is superior over the other. In fact, various sources are complementary and it would be better to use as many sources as possible (Yin, 2009). This research uses interview and documentations to collect data.

4.2.1 Primary data

Interview is the only technique used to collect primary data. It was used due to a number of reasons; (1) information gap that exist in secondary data, (2) acquiring more data to support secondary data and (3) directly understand the world of sustainability from informants point of view.

Initially, before leaving to Timor-Leste, I have established a list of prospective informants whom I have identified and believed would provide answers to my research question. In doing so, I used both purposive and snowballing sampling techniques. Purposive sampling was used because I have a prior knowledge of and working experience with those informants whom I thought should be included in informant’s sample. I selected them based on their work experience, portfolio of competence, and expertise. I used snowballing sampling when my colleagues and supervisors and even some of the informants suggested to include other informants whom they identified would provide answers to my research question. However, due

to the busy schedules of most of the informants, towards the end of my one-month stay in Timor-Leste, I managed to interview six informants (see Table 2 below). I have decided to not cite their names in this research. Instead, I referred them as informant 1, 2, 3, 4, 5, and 6.

Table 2: Sample of informants

Name	Position	Duration of Interview
Informant 1	Vice Minister of Finance	Interview took place on 25/02/2011. It lasted for nearly 1 hour.
Informant 2	President of Autoridade Nacional do Petróleo-ANP (National Petroleum Authority)	Interview took place on 09/03/2011. It lasted for nearly 1 hour.
Informant 3	Secretary of State for Natural Resources,	Interview took place on 14/03/2011. It lasted for 3 hours.
Informant 4	Minister of Economy and Development,	Interview took place on 15/03/2011. It lasted for only 10 minutes.
Informant 5	Director of NGO Luta Hamutuk	Interview took place on 16/03/2011. It lasted for 30 minutes.
Informant 6	Member of the National Parliament	Interview took place on 17/03/2011. It lasted for 40 minutes.

Access to these informants was not difficult due to my past work experience and personal networks with staff in each of the informant's respective office. They facilitated me to be scheduled with each respective informant for interview. I made the appointment with selected informants few days before the actual interview took place. In doing so, I went to their workplace and delivered a formal written appointment letter with attached interview questions (see Appendix 5 for interview questions). I proposed a tentative date and time for interview, but at the end, the informants decided date and time, which was suitable for them to be interviewed. Once I got a replied confirmation, mostly through a simple phone call, then I proceeded to interview.

The longest interview I had is with Informant 3. The interview lasted for three hours. While, the shortest interview time I had is with Informant 4. The interview lasted for only ten minutes. Consequently, I only asked this informant three questions. On average, I had at least forty minutes of interview time with the other informants. Most interviews were conducted in English, with the exception to Informant 5 and 6. Both interviews were carried out in Tetum, the official and national language of Timor-Leste. I used a tape recorder to record the interview on the condition that permission was granted by the informants to do so. I used a semi-structured interview because (1) I followed, but not strictly, the sequence of interview questions and (2) informants were allowed to freely express their opinion without any interruption with the exception to pop-up questions that arose when I asked them for clarification and explanation. Upon the completion of the interview, interview records were transcribed and those in Tetum were translated into English.

4.2.2 Secondary data

Most of the secondary data were collected prior to leaving Timor-Leste for collecting primary data. These documents were produced by the government for internal and external purposes. These documents are in the form of National Development Plan (NDP), Sector Investment Programs (SIPs), Annual Action Plan (AAP), Government's Annual Budget, Strategic Development Plan, Laws and Regulations, Annual Report, Statistical Data, and etc. In addition, numerous documents were written and published by external parties mostly by international organizations such as International Monetary Fund (IMF), World Bank, Asian Development Bank (ADB), International Financial Corporation (IFC), the United Nations Development Program (UNDP). Most of these organizations provide information on Timor-Leste's macro-economic level. Apart from government and international organizations, non-governmental organizations (NGOs) notably Lao Hamutuk and Luta Hamutuk had done a considerable amount of research on various topics on Timor-Leste's petroleum sector. So, I also collected their published documents. Most of these secondary data were accessed via each respective entity's website and some were given by my colleagues and supervisors. I relied and used University of Nordland's database, text books and compendiums mostly to collect data on sustainability, institutional theory, and management control system.

4.3 Data analysis

Data analysis is the interplay between raw data, the procedures used to interpret and organize the data and the emerging findings (see Wholey & Newcomer, 2004). Data analysis aims to extract relevant information from the masses of data collected by interview and documentation in order to present the findings that can convey and present a meaningful insight for the knowledge seekers. I employed three-stage-process to analyze data. The first stage is data reduction process. In this process, I read secondary documents and sorted out those I thought were relevant. In addition, once the interview was done, they were transcribed. I looked at the transcribed documents and accordingly sorted out those parts which were pertinent, in term of answering the interview questions. The masses of data collected were reduced to relevant data only. The second stage is coding process. In this process, the sorted information were coded and copied or decoded and pasted to a pre-established draft structure of the research. The third process is called data presentation process. In this process, data were structured and developed into a bullet points paragraphs that convey a particular meaning. The bullet points forms were later developed into the empirical chapter of the research.

4.4 Validity and reliability

Quality of a research determines the worthiness of its findings. Lincoln and Guba (1985) argue that quality of research relates to the fundamental question of “how can an inquirer persuade his or her audiences that the research findings of an inquiry are worth paying attention to” (p. 290). A number of approaches have been taken to ensure the validity and reliability of this research. First, I used two data collection techniques, which is often referred to triangulation. This process enabled me to get as much information as possible to complete information gap that exist either in primary and secondary data. It also helps to support the reliability of data that I have gathered in the form of confirmation and reinforcement. In addition, I have included a sample of informants whom I believe could represent the total population. My argument is that I have managed to interview most of representatives from public institutions which have direct responsibilities toward ensuring the sustainability of petroleum revenues. The informants’ opinions are argued to represent the overall policy framework of the government. I have gone

further to include Member of Parliament from opposition party and a member of an NGO in order to achieve a more balance point of view and a different perspective from the government.

4.5 Research limitations

There are a number of challenges I encountered prior to, during and after collecting both primary and secondary data. First, the busy schedules and workloads of most informants prevented them to comprehensively answer the interview questions. For example, I was given only ten minutes to interview informant 4. Secondly, accessing to these informants was a daunting task which requires perseverance, patient and good personal networking. Thirdly, it was time consuming and took a lot of effort to transcribe interview's recording and to translate them into English. Fourthly, the original meaning expressed by the informants may be lost during the translation process from Tetum to English. Fifthly, findings of this research cannot be generalized to a wider population. Lastly, time limitation was a major challenge that I faced. It prevented me from acquiring a more comprehensive data, particularly primary data, for this research and delivering back interview's transcripts for verification. The latter, to some extent, could affect the validity and reliability of primary data.

4.6 Summary

This research seeks to describe government approach towards sustainability of petroleum revenues. In doing so, qualitative data is mostly relied upon. Interview and analysis of documentations produced by government, international organization and NGOs, were used to collect both primary and secondary data. Six informants were interviewed. Time limitation was the main challenge that prevented the access to a more comprehensive data and the opportunity of delivering back the interview transcripts for informants' verification. Overall, all information I have gathered, both primary and secondary, is more than sufficient to provide answers to the research question.

5. EMPIRICAL FINDINGS

This chapter attempts to cover the reasons for the government approach towards sustainability. In doing so, the chapter examines why Timor-Leste cares about sustainability and what government has done to achieve it. Therefore, this chapter seeks to identify and describe rules and regulations, policies, plans and programs and other means that government has adopted and done in order to ensure the sustainability of petroleum revenues. Before entering into this discussion, the first section of this chapter intends to provide an understanding of sustainability in the context of Timor-Leste.

5.1 Sustainability in the context of Timor-Leste

Timor-Leste, a newly independent country in the 21st century, is not left behind in the fast moving worldwide trend of sustainability. It is consecrated in the Timor-Leste Constitution particularly Article 139. The Constitution explicitly states that “the exploitation of the natural resources shall preserve the ecological balance and prevent destruction of ecosystems” (RDTL, 2002). The Constitution calls for maintaining the balance between exploitation, use, and preservation of the nature. Sustainability is viewed from an environmental perspective. The basic principle of sustainability, from environmental perspective, is about the effective management of physical resources, or global life support system (Crane & Matten, 2007). All informants shared this similar view on sustainability. On commenting on sustainability, the informants stated that;

“Sustainability is about how you can balance between encouragement for investment and taking care of the environment. We have to find alternative way to balance these two”.

In Timor-Leste, sustainability is a balance between the exploitation and preservation; or investment and conservation of the natural resources. In addition, Timor-Leste Vision 2020 envisages a more broad scope of sustainability to include “sustainable utilization of natural resources” as one of its goals to be achieved by 2020 (Planning Commission, 2002).

Based on the interviews, sustainability can be classified into two main categories. First, most informants when asked to define sustainability in relation to petroleum revenues, they always relate it to inter-generational equity. It is a principle of distributive justice; “meeting the need of

current generation without compromising the ability of future generation to meet their needs”. This definition of sustainability is shared by informant 1 and 4. Emphasizing the importance of sustainability, the informants commented that;

”It is important that we should care about sustainability because we are thinking about our next generation. We are not thinking only about current generation, but we also need to think about future generation as well. We want to ensure that future generation also benefits from the petroleum revenue”.

Therefore, petroleum revenues should be managed in such a way to ensure its sustainability even after they are fully exploited or depleted to benefit both current and future generations. The implication is that a portion of petroleum revenues should be saved for future generation. The emphasis of sustainability from this perspective is on future generation.

In addition, Sustainability could also mean that the investment on current generation. The welfare of future generations is argued to be determined also by the investment on the current generation. This view of sustainability is shared by informant 3. The informant stated that;

“Sustainability is about to save some money for future generation; but also taking and using some of them for this current generation. If you talk about investing for future generation, you need also to invest in current generation. When you invest in the present, you invest in the future as well. You do the work now; the future is going to enjoy”.

The emphasis of sustainability from this perspective is centered on the investment on current generations. It is more a cause-and-effect-relationship. All the hard work that is done on current generation is expected to generate fruitful benefits for future generation as well.

The second category of sustainability, based on the interviews, is about the investment in non-oil sector. The basic argument is when petroleum revenues cease flow in, non-oil revenues will be relied upon to sustain the country’s economic development. In doing so, sustainability is achieved by gradually switching the country’s reliance on petroleum revenues to a more non-oil revenues. This view of sustainability is manifested by the statement of informant 3;

“Sustainability is basically to get money from the oil to fix basic infrastructures that you got, then you start to create non-oil sector and in doing so they can create more money”.

Investment in non-oil sector, i.e. basic infrastructure, could reduce the country's total reliance on petroleum revenues. In a nut shell, sustainability in the case of Timor-Leste basically means inter-generational equity and investment in non-oil sector.

Having discussed the definition of sustainability in the context of Timor-Leste, the next question to ask is why Timor-Leste cares so much about sustainability of petroleum revenues. There are a number of factors contribute to the importance of sustainability for Timor-Leste. Firstly, at the moment, Timor-Leste is an oil dependent country since 90 % of its government revenues are derived petroleum sector. Thus, concern on the limited availability of petroleum resources and their full exploitation within a period 20-30 years emerges (MoPF, 2004). In addition, the exact size of Timor-Leste oil and gas reserves is still unknown. The unsettled maritime boundaries between Timor-Leste and Australia could also affect the size of Timor-Leste petroleum wealth. Without knowing for certain the exact size of petroleum wealth could impact on government policy direction and approach on the utilization of existing petroleum revenues. In another word, the present limitation affects government approach to ensure the sustainability of petroleum revenues.

Secondly, despite explorations are being carried out in TLEA, the current petroleum production takes place in JPDA is the only source of petroleum revenues for Timor-Leste in addition to the small contribution from domestic revenues. The complex petroleum activities and uncertainties surrounding the cost of petroleum activities put this source of petroleum revenues at more risk. Any halt to petroleum production in JPDA, for instance due to natural disaster, also affects the flow of petroleum revenues for Timor-Leste. All these factors arguably put pressure on government in particular to look for means or ways to ensure the sustainability of its petroleum revenues. After looking at factors that affect Timor-Leste government's decision towards sustainability, the next section of this chapter is to describe how government approaches sustainability. In doing so, this section attempts to look at what rules and regulations, policies, plans and programs that government has done to ensure sustainability of petroleum revenues.

5.2 Approaches on sustainability

Government approach towards sustainability can be summarized as follow; establishing rules and regulations, establishing petroleum fund, investing petroleum revenues in both international financial markets and non-oil sector.

5.2.1 The establishment of regulatory frameworks

Timor-Leste Constitution mandates a need for establishing a fund for income from the exploitation of non-renewable resources. It is explicitly spelled out in the Article 139 of the Constitution that “the exploitation of natural resources shall be used in a fair and equitable manner in accordance with national interests and should lend themselves to the establishment mandatory financial reserves” (RDTL, 2002). Fair and equitable manner can be translated into the call for an inter-generational equity. It fits well into WECD’s definition of sustainability, “meeting the needs of the present generation without compromising the ability of future generations to meet their needs” (WECD, 1987). Thus, it seems that the Constitution underscores the importance of sustainability. One of the means to achieve it is through the establishment of a mandatory financial saving. The concrete and follow-up step taken by the government is by establishing Timor-Leste Petroleum Fund.

Apart from the Constitution, another important piece of legislation is the enactment of Timor-Leste Petroleum Law number 9/2005. To be more precise, the Law lays down key parameters for the operation and management of Petroleum Fund, collection and management of petroleum receipts, regulating transfers to state budget and providing mechanisms for government’s accountability and transparency. The main purpose of the Law is “to manage the petroleum wealth wisely, and to save substantial share of the petroleum revenues” (Texeira, 2005). It is supported by Drysdale (2007) in which he observes that the Law establishes some mechanisms in place, to assist Timor-Leste to manage their petroleum revenue sustainably, and to avoid resource curse.

In principal, the Law requires all petroleum revenues should be accumulated and saved in Petroleum Fund. On the subject of management and operation of Petroleum Fund, the Law

outlines roles and responsibilities of each related and important entities such as Ministry of Finance, Central Bank, National Parliament, Investment Advisory Board, and Advisory Council. The Law clearly assigns each entity with clear lines of responsibilities towards ensuring the sustainability of petroleum revenues. In addition, the Law mandates an investment of Petroleum Fund in international financial market and domestic economy through a normal budget process. Regarding the transfer to state budget, the Law requires that the total amount transferred from the Petroleum Fund for a Fiscal Year shall not exceed the appropriation amount approved by Parliament for the Fiscal Year. No transfer shall be made from the Petroleum Fund in a Fiscal Year in excess of the Estimated Sustainable Income for the Fiscal Year currently sets at 3 %. In doing so, the limit is designed to prevent excessive withdrawal that could jeopardize the sustainability of the Fund. To ensure government's accountability and transparency, the Law establishes regular reporting by each related entities of their responsibilities on the management of the Petroleum Fund. It is shown that these rules and regulations establish clear direction mechanisms in place to ensure that sustainability of petroleum revenues accumulated in the Petroleum Fund.

5.2.2 The establishment of Timor-Leste Petroleum Fund

It is mentioned earlier the Constitution has explicitly outlined the need for a mandatory financial reserve. The first elected members of the Timor-Leste's National Parliament took this provision further and following the advice of foreign donors and international organizations such as IMF passed a legislation to establish a petroleum fund for Timor-Leste. After a one-month public consultation, government announced the establishment of Timor-Leste Petroleum Fund on 22 September 2005. The Fund came into operation in September 2005 by receiving the transfer of petroleum revenues which have been received and accumulated from the previous years. The Petroleum Fund is the centerpiece of Timor-Leste's resource management framework. The Petroleum Fund is based on the Norwegian model and was established with technical assistance provided by the IMF (IMF, 2009).

The objective of Petroleum Fund is to serve as “an instrument to manage the petroleum wealth wisely and to help build an understanding for the need to save a substantial share of the

petroleum revenues” (Alkatiri, 2004). By doing so, it is argued that the Fund can “contribute to an efficient and effective management of the petroleum resources for the benefit of both current and future generations” (RDRTL, 2005). Weinthal and Luong (2006) reinforce this argument by asserting that Petroleum Fund is to ensure saving or stabilization funds or often the combination of both.

On the one hand, saving fund is to ensure that portion of wealth is saved for future generation even after natural resources are depleted (Weinthal & Luong, 2006). It is more related to sustainability from the point of view of inter-generational equity. In another word, as informant 1 put it; *“The purpose of our Oil Fund is to secure some money for next generation”*. It is a long-term financial saving mechanism to guarantee the benefits of petroleum revenues for both current and future generations (Ovesen, 2010). The Government’s savings policy will bring an increase in spending and set aside money for the future, to benefit both this generation as well later generations in a balanced, equitable way (MoPF, 2005).

On the other hand, stabilization fund, according to Weinthal and Luong (2006) is aimed at reducing the impact of commodity price stability on the economy and improving budget predictability by stabilizing spending patterns. It is designed to reduce overspending when oil price is high and borrowing when the price is low. Therefore, when commodity prices are high, excess revenue is put in stabilization fund, but when prices are low, revenue is transferred to sustain budget’s deficit. According to IMF (2009), the aims of the Petroleum Fund is to limit the risk of Dutch Disease, i.e. the rise of real exchange rate causing the contraction of non-oil sector, and to avoid rent seeking that leads to economic and social division and weakened institutions.

Furthermore, government officials, who were interviewed for this research, also strongly underlined the importance of having a Petroleum Fund as a controlling mechanism. Informant 2, during interview, stated that;

“Having a petroleum fund is good, a good tool, to manage how much money can be taken out. It is a good tool or way of control”.

Moreover, the weakness of Timor-Leste public administration and governance has also been cited as a driving force behind the establishment of Petroleum Fund. Informant 3 elucidated this argument further in the following way;

“In the case of Timor-Leste, we definitely need a petroleum fund due to the fact we have weak administration and governance”.

Thus, Petroleum Fund enables the saving of petroleum revenues for future generations; reduces the impact of price stability and budget predictability, and avoids the effect of Dutch Disease and rent seeking behavior and the risk of weak public administration and governance.

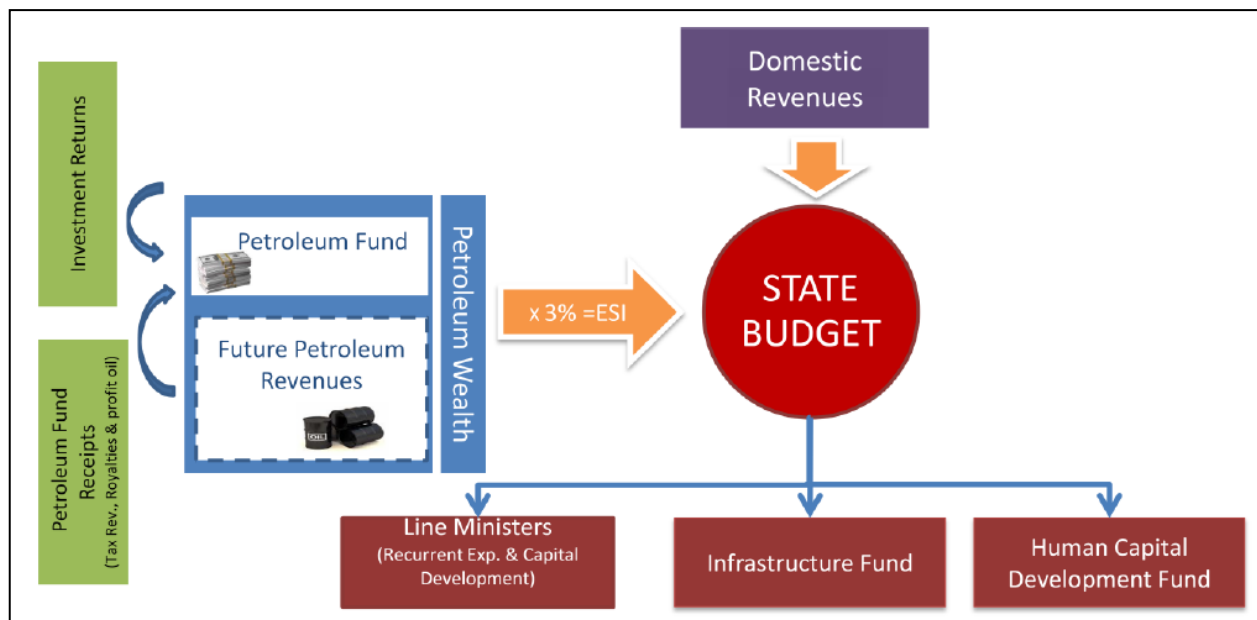
The main features of Timor-Leste Petroleum Fund are summarized as the following. First, the fund is to be managed prudently in accordance with principle of good governance for the benefit of current and future generations. Government is the responsible for the overall management and BPA is responsible for the operational management of the Fund. All Timor-Leste’s revenue from petroleum operations is accumulated into the Fund including its return on investment. All assets of the Fund are required to be invested in international financial market. The current investment strategy sets 90 % to be invested in U.S dollar-denominated bonds.

In addition, transfers from the Fund should not exceed the appropriation agreed on for a fiscal year. The transfer should not exceed Estimated Sustainable Income (ESI) currently set at 3 %. To ensure accountability, BPA publishes quarterly reports on the performance and activities of the Fund. In addition, government also submits an annual report with an audited financial statement to the Parliament and public. To ensure the function of oversighting mechanism, IAB advises Minister of Finance on the overall investment strategy and management of the Fund. Consultative Council provides advice to Parliament on performance and operation of the Fund and budget appropriations. To ensure the transparency of the Fund, quarterly and annual reports and Consultative Council’s advice are made public and minutes of meeting of IAB also regularly published.

5.2.2.1 The Organization of Petroleum Fund

The organization of Petroleum Fund is depicted by Figure 5 below. Petroleum Fund consists of opening fund balance, plus petroleum receipts and investment returns and less transfer. Petroleum receipts are all petroleum revenues, as defined by Article 6 of the Petroleum Fund Law, and it may later include revenues from the exploitation of other minerals or non-renewable resources are credited to the Petroleum Fund. Thus, petroleum receipts comprises of tax revenues, which is managed and assessed by the Ministry of Finance, and royalties and oil profit, which are collected by National Petroleum Authority (ANP) and return on Petroleum Fund's investment, which is managed by Bank and Payment Authority (BPA). The Fund has an earmarked receipts account held by the Central Bank of Timor-Leste; currently exercised by Bank and Payment Authority (BPA). All these petroleum receipts are accumulated in the Petroleum.

Figure 5: How the Petroleum Fund Works

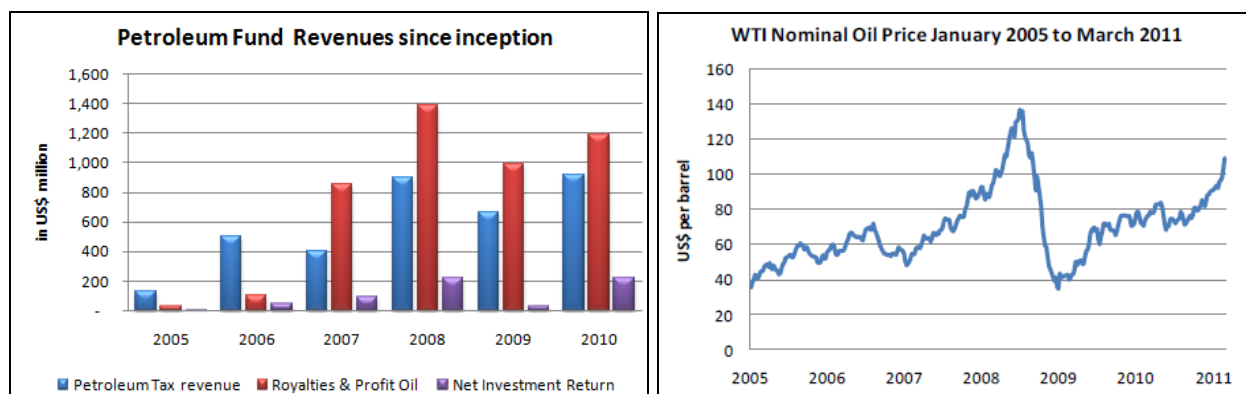


(Source: Ministry of Finance, 2011).

Petroleum Fund performs considerable well in term of its size since the beginning of its establishment. For the year 2010, a total of approximately \$ 2 billion was received from taxes;

royalties and oil profit, while investment income was amounted to \$ 220 million (see Figure 6 below).

Figure 6: Petroleum Revenue and Oil Price



(Source: Ministry of Finance, 2011).

The total inflow for 2010 was higher than 2009, but lower than 2008. It should be noted that petroleum receipts are highly dependent on oil prices. Total petroleum receipts, as of mid March 2011, were \$ 8,802 million since its inception, while investment returns was accumulated to another \$ 645 million (Ministry of Finance, 2011). It is estimated that petroleum revenues will remain high in 2011 and 2012 due to stable production and higher average oil prices. Estimated Petroleum Revenues for these two years are projected to be around \$ 2.23 billion and \$ 2.4 billion dollars respectively (RDTL State Budget, 2011). Timor-Leste's Petroleum Fund started with a balance of \$ 247 million dollars and by the end of December 2009, four years since its inception, it has a balance of more than \$ 5 billion dollars (see Appendix 6). It is expected that the Petroleum Fund balance will reach \$ 6.62 billion dollars by the beginning of 2011 (RDTL State Budget, 2011). According to IMF report (2010), the net present value of the country's proven petroleum wealth, consist of the Petroleum Fund balance and discounted future revenue streams, is estimated at about \$ 16.7 billion (IMF, 2010).

While a substantial portion of the Fund is invested in international financial market, a small portion of it is transferred through normal State Budget to finance non-oil budget deficit. In this case, Petroleum Fund Law also stipulates another important element of controlling the spending

of petroleum revenues. The Law designs what is known as Estimated Sustainable Income (ESI). Appendix 7 explains the process of calculating an ESI for a fiscal year. ESI is an estimate of the annual revenue from the country's oil and gas projects that the government can withdraw indefinitely without depleting the fund. ESI is “the maximum amount that can be appropriated from the Petroleum Fund in that Fiscal Year and leave sufficient resources in the Petroleum Fund for an amount of the equal real value to be appropriated in all later Fiscal Years” (Petroleum Fund Law, 2005). It is currently set at an equivalent of 3 % of the country's estimated petroleum wealth, which includes the current value of the fund, plus the net present value of future revenue. The purpose of ESI is to spend a 3 % of petroleum revenues and save the rest. By doing so, when petroleum reserves go down, the fund balance goes up. When the petroleum revenues stops to flow in, the permanent income or investment return of the fund can be used to sustain government budget deficit forever. ESI is therefore a benchmark for sustainable spending (Watson, 2010). In another word, as informant 1 observed, “*ESI aims to guarantee the sustainability of the Fund itself*”. ESI protects the eroding of the capital of the Fund or reduce the risk of having nothing at all. Sustainability is achieved when only return on investment of the Fund is used to finance non-oil budget deficit while leaving the rest of investment of the Fund to grow.

5.2.2.2 *Management of Petroleum Fund: roles and responsibilities*

The Petroleum Fund Law details a clear line of responsibilities of related entities in the management of Petroleum Fund. Government (Minister of Finance) is the ultimate “owner” and responsible for the overall management of Petroleum Fund. Minister of Finance makes decision regarding investment strategy and management of the Petroleum Fund. The advice from Investment Advisory Board (IAB) is required before making any such decisions. In addition, Minister of Finance also makes an agreement with Central Bank, in this case Bank and Payment Authority (BPA) for the operational management of the Petroleum Fund. Accordingly, Minister of Finance is required to evaluate and monitor operational management of the Fund and provides regular reports to National Parliament. Minister of Finance provides reports to the Parliament and public about management of the Petroleum Fund. The report details inflow and outflow of the Fund, return and accumulated value of the Fund and any important issues concerning the management of the Fund. Director of Treasury within the Ministry of Finance is responsible for

maintain the Petroleum Fund accounts and records. In addition, Treasury also provides quarterly management information and analyses on the performance and activities of the Petroleum Fund to Minister of Finance.

Central Bank, in this case BPA, is the operational manager of the Petroleum Fund. BPA is in charge of the implementation of investment strategy of Petroleum Fund and actively manages it to achieve an excess return. In addition, BPA also exercises risk control and reports on the Fund's performance and provides professional advice on investment strategy. BPA regularly, on quarterly basis, provides reports on the operational management of the Fund to Minister of Finance and the public. In addition, one or more external Investment Managers can be appointed to manage the investment of amounts in the Petroleum Fund. The main duty of external managers is to maximize the return on investment. Investment Advisory Board (IAB) is to provide advice and information particularly in regard to the investment strategy or management of the Petroleum Fund to Minister of Finance.

Parliament, with the advice from Consultative Council, is responsible for approving regulatory frameworks such as Petroleum Fund Law, investment strategy and Petroleum Fund expenditure decisions. Petroleum Fund Consultative Council advises Parliament on matters relating to the performance, operation, and appropriations of the Petroleum Fund. In the case of budgetary process, the Council provides advice to Parliament regarding whether or not Petroleum Fund appropriation is being used effectively to benefit current and future generations. Parliament is required to publish any advice received from the Council on a regular basis. Independent external auditor is employed on the regular basis to audit Petroleum Fund activities, particularly in relation to estimated sustainable income, and to monitor any discrepancies that might exist. The objective of this exercise is to bolster confidence that Petroleum Fund is not misappropriated. All these entities and their respective responsibilities are expected to enhance transparency and accountability in all aspects of the Petroleum Fund which ultimately to support the wise management of the petroleum revenues with the aim of achieving sustainability.

In addition, Timor-Leste also subscribes to and becomes members of the Extractive Industries Transparency Initiative (EITI). It is a worldwide effort to improve transparency and accountability in management of revenues from oil, gas and mining, established in September 2002 by the British government, and now coordinated by Norway. The EITI supports improved governance in resource-rich countries through the verification and full publication of company payments and government revenues from oil, gas and mining. EITI provides benefits to its members in the following way; benefits for implementing countries include an improved investment climate by providing a clear signal to investors and international financial institutions that the government is committed to greater transparency. Benefits to companies and investors centre on mitigating political and reputational risks. Benefits to civil society come from increasing the amount of information in the public domain about those revenues that governments manage on behalf of citizens, thereby making governments more accountable (EITI, 2011). On 1 July 2010, Timor-Leste completed a seven-year process of becoming compliant with the standards of the Extractive Industries Transparency Initiative (EITI). The biggest advantage to Timor-Leste following EITI rules, it will help ensure that revenues from petroleum resources are used for the long-term interests of Timor-Leste's people, to provide benefits both current and future generations and avoiding the resource curse (Lao Hamutuk, 2010).

5.2.2.3 *Reporting on the management of Petroleum Fund*

Timor-Leste Petroleum Fund is built on from Norwegian Petroleum Fund model. One of the principal features of it is the integration with the petroleum fund into the state budget process. Budget process is the process in which country makes decisions about what revenues to raise, what to spend and how to spend it. In another word, it decides on saving policy on how much is spent on public consumption and how much is saved either by investing in physical assets or financial assets. In this context, budget serves a planning mechanism. In doing so, it determines how much is taken from petroleum fund to development non-oil sector, and how much is saved and invested in bonds and equities in international financial market. IMF (2011) states that Timor-Leste budget documents provide fairly comprehensive information compared with those of many other LIC peers. Budget directs acceptable individual and organization's behaviors towards the achievement of the established objectives. Budget is designed to ensure that daily

activities of all actors come together in a coordinated in a set of actions towards the achievement of goals and objectives (Otley et all, 1995). It is supported by Malmi and Brown (2008) by stating that “budgeting as a control mechanism its focuses on the planning acceptable levels of behaviour and evaluating performance against those plans” (p.293).

In addition, Petroleum Fund Law, particularly Articles 21, 23 and 24, requires government to provide an annual report on the Petroleum Fund for the Fiscal year and annual financial statement of that year to Parliament. Government reports on the management of the Petroleum Fund in particular and other petroleum related expenditures incur for the development of the country. These reports, according to Article 24 of Petroleum Fund Law, should at least contain the information on income and expenditure statement and balance sheet, including a note listing the qualifying instruments of the Petroleum Fund, valued at market value; details of all appropriations and transfers from the Petroleum Fund; and notes to the financial statements, as appropriate; and a report signed by the Minister describing the activities of the Petroleum Fund in the year, including all advice provided by the Investment Advisory Board, any reports prepared by the Independent Auditor under Article 35 and drawing attention to particular issues or matters that may be of concern or interest to Parliament (RDLT, 2005).

Essentially, the above-mentioned reports function as accountability mechanism. Government is asked to justify all its actions regarding the management of Petroleum Fund. Accountability is still related to performance measurement. These reports are means of evaluating government’s performance. As Otley et all (1995) argue “regular observations and reports on actual achievement are used to ensure the planned actions are indeed achieving desired results” (p.42). Parliament holds government accountable for its performance and recommends necessary actions to correct any discrepancy that might deviate from the plans. Consultative Council helps Parliament to exercise this oversighting function. All these aforementioned mechanism are basically designed to ensure that government’s actions are within the right track towards sustainability of petroleum revenues.

5.2.3 The investment of Petroleum Fund in international financial market

The majority of the Petroleum Fund is invested in international financial market. The current investment strategy is operated in a much more conservative approach. It is invested securely in low financial assets abroad. Government, in Public Consultation Discussion Paper (2004), provides a number of reasons for doing so. First, by taking conservative approach, they argue would reduce the risk of the Fund's saving. Second, investing in overseas market puts less pressure on domestic economy, taking into account its limited absorptive capacity. Third, domestic investment is prone to the risk of corruption and bad governance and it can also increase inflation and imbalanced economic developments.

With respect to the investment strategy of the Petroleum Fund, the Petroleum Fund Law, Article 14 (see Appendix 8), requires that 90 % of the Fund must be invested in qualifying instruments and 10 % of it to be invested in other financial instruments other than those described in Article 15, provided that such instruments are issued abroad; liquid and transparent; traded in a financial market of the highest regulatory standard. Appendix 9 explains in detail what constitute qualifying instruments. Broadly speaking, Petroleum Fund should be invested in the US government's bonds, or bonds guaranteed by World Bank, or by a sovereign State or Bonds issued by Bank for International Settlements, European Central Bank, or a Central Bank of a sovereign State or Bonds issued by a bank. Government, at the beginning, adopted this conservative investment strategy in order to avoid investment in projects with high risk with uncertain returns. Since Timor-Leste uses the US dollars as its currency, therefore, it is important to stick on investment denominated in US dollar in order to avoid currency changes which could affect the value of the Fund. In addition, by investing in bonds issued by sovereign government, risk of default is minimal and high probability that government will payback its bonds when they mature (MoPF, 2005).

Return on investment Fund has been considerably promising within its return target of 4%. It can be observed that, by looking at Appendix 10, high return of 3 % and 3.3 % are achieved in first and fourth quarter 2008 respectively. A negative return occurred in third quarter 2005, second quarter 2008 and second quarter 2009. As Appendix 11 further demonstrates that the net

investment return for 2010 and 2011 are estimated at \$ 235 and \$ 283 million respectively. The nominal investment return from January to July 2010 has been equivalent to 3.2% of the Petroleum Fund. The annual return for the 12 months to July 2010 was 4.2 %, while the annual return on the investments since inception of the Fund is now 4.6 % (RDTL State Budget, 2011). Petroleum Fund balance has increased from \$ 6,603.63 million in the third quarter to \$ 6,903.99 million in fourth quarter of 2010 (BPA, 2010).

There is a possibility to increase the exposure of the existing investment strategy. Petroleum Fund Law allows for a revision of the Petroleum Fund investment strategy after every five years. Government, to certain extent, has increased the scope of Fund's investment and is looking further to explore more investment diversification strategies of the Fund. Prime Minister Xanana Gusmão, upon the occasion of presenting the State Budget for 2011, said that Petroleum Fund is going to be diversified through, "a range of assets, regions and currencies, in order to reduce risks and increase expected returns" (Macau Hub, 2011). Government argues that diversification strategies would bring high performance of sovereign wealth funds for better long term returns for the Timorese (GoTL Press Release, 2010). Tower Watson argues that in order to maintain a 3 % of real rate of return per annum, the investment strategy should be diversified to at least 25 % in equities (GoTL Press Release, 2010).

In addition, Government takes full advantage of the 10 % investment of equity established by the Petroleum Fund Law to invest a remaining 4-5 % of the Fund in equities. As of June 2009, Bank for International Settlements (BIS) was hired as external manager. The Fund exposure was increased from 4-5 % to be invested in Government bonds denominated in Australia Dollars, Japanese Yen and European Euro and Great Britain Poundsterling. It is argued that "the appointment of the BIS as the Fund's first external manager is the initial step in the government's aim to diversify the investment of the Petroleum Fund to increase its expected return and better diversify risks" (MoF, 2009). Government plans to hire more external managers in first or second quarter of 2010 since the exposure of the Fund is to be increased to global equities from 4-5 %. At the same time, government expects to exploit the flexibility of the Petroleum Fund Law of which allowing for a revision of the Fund's investment strategy after

five years of its operation. Once the proposed changes are approved by the Parliament, Petroleum Fund will be diversified to more global equities and non-USD bonds. The summary of proposed changes to the Petroleum Fund Law is presented in Appendix 12.

However, government moves to change the existing investment strategy is countered with opposition. Informant 6 observed that;

“The big rationale behind this move is in order to enable them to take more money and to spend more as they do now. This strategy will increase ESI which enables them to take more money and spend more as they do now. In regard to the sustainability, my biggest concern is that equities market is very volatile”.

Informant 6 recommended that learning from the current global financial crisis where big corporations collapsed in the USA have lost significant large amount of money. Since Petroleum Fund is Timor-Leste’s only Fund, it should be protected and taken care of. The informant substantiated that Timor-Leste’s fund is the only fund that is intact during recent global financial crisis. Based on these arguments, the informant suggested the maintenance of existing investment strategy. Comment on government’s plan to change the existing investment strategy of the Petroleum Fund, informant 5 stated;

“We do not need to be in hurry to invest a lot of money in order to get big return. It is better to play small and gain small and when we lose, we lose small”.

On this view, the proposed changes are aimed at getting a big return. Emphasizing the consequence of this approach, the informant argued that; *“when we lose, we will lose a lot of money”*. The implication would be the existing investment strategy performs considerably well, therefore, it should be maintained.

In principal, main purpose of investing Petroleum Fund in international financial market is to get an investment return of the Fund. Such investment increase the size of the Petroleum Fund and the same time its return can be used as source of permanent, without reducing the capital of the Fund, to finance non-oil budget deficit.

5.2.4 The investment in non-oil sector

Apart from investing the Fund in international financial market, Petroleum Fund Laws also allows a portion of this Fund, currently set at 3 % of allowable withdrawal from the Fund, to be transferred to budget process in order to finance non-oil budget deficit. Budget process is the process by which country makes decisions about what revenues to raise, what to spend and how to spend. Government argues that large amounts of petroleum revenues will continue to be invested in Timor-Leste – building roads, improving education and providing better health care and these are done through the regular state budget (MoPF, 2005). As examples showed in Figure 5, the transferred fund is accumulated in the state budget with domestic revenues are used to finance expenditures i.e. consumption, investment (i.e. infrastructure and human capital).

Government, in particular, takes into account the importance of investing in non-oil sector due to the non-renewability of petroleum resources and their exhaustion in a foreseeable future. Comment on the importance of investing in non-oil sector, informant 3 stated that it is “*the most secure investment to do*”. Informant 2 shared this concern in the following way;

“We need to develop other resources that we have, because one day petroleum revenue will stop. In order to be sustainable, in my view, get that money out; build for example tourism industry, in that way we are less dependent on petroleum revenues.

To put it differently, investing in non-oil sector is to anticipate one day petroleum resources will be fully exploited or depleted and consequently petroleum revenues also cease to flow in. Therefore, non-oil sector comes in to play a substituting role as a source of income for the country. Informant 1 stated;

“We have to balance by raising non-oil revenues because petroleum revenues cannot guarantee a long-term development. We can use petroleum revenue to push for other sector that might be considered to be more sustainable in the future. In our case, sustainability is, therefore, to use petroleum fund gradually to push for non-oil sector to grow, i.e in agriculture. So, than in the future, we are not dependent on the oil anymore, we are going to depend on non-oil sector”.

Both informants have argued for the use of petroleum revenues to push for the development of the non-oil sector. The same concern also shared by informant 2, as the informant commented that;

“When petroleum fund goes down, income from other sector goes up. That is sustainability. At some point, money from petroleum revenue runs out, but we still have money from other sectors, because it has been diversified, through infrastructure, tourism and agriculture and etc”.

Therefore, investing in non-oil sector is critically important to deal with the risk of dependence on exhaustible petroleum resources.

International organization such as IMF also supported government’s investment in non-oil sector i.e. investment in public infrastructure, health and education. Such investments are well managed and efficiently and transparently implemented, could result in sufficiently high rate of return, economic growth and standards of living of Timorese people (IMF, 2011). Current government spending is supported on the ground that long-term interest of the country is served (IMF, 2011).

Government estimates that investment in non-oil sector can result in non-oil economic growth at an average of 12 % per year between 2010 and 2020 and 10 % per year between 2020 and 2030. The current national income of \$ 700 million per year would therefore become roughly \$ 7 billion in 2030. Total national income, combination both petroleum and non-petroleum economy, is estimated to grow from \$ 2.5 billion dollars in 2010 to \$ 11.5 billion in 2030 (RDTL, 2010).

Having looked at the importance of investing in non-oil sector, the question would be “what non-oil sector should be invested”. The following section will try to answer this question by examining and describing various plans and programs that government has done or is going to do regarding investment in a selected non-oil sector. Only few selected important sectors are included in the discussion because government identifies these sectors are of urgent need for development to guaranteeing future sustainability.

Governments since the beginning approached national development following a pre-established framework as depicted by Appendix 13. Vision 2020, written in the preamble of the National Development Plan (NDP), enlists a number of goals that Timor-Leste aims to achieve by the year 2020. The NDP, in turn, reflects Vision 2002 and represents Timor-Leste's long-term development vision and its development strategy for the period of 2002-2007. Sector Investment Programs (SIPs-see Appendix 14), which sets "priorities of priorities", therefore, was developed with comprehensive expenditure programs with the objective of meeting targets established in the NDP. Further annual plan and budget are prepared accordingly to be implemented on a yearly basis in order to achieve the objectives of the NDP, Vision 2020, and Millennium Development Goals (MDGs).

The effort of the government to develop non-oil sector is shown by the amount of money is spent on these sectors. Government, as Appendix 15 shows, allocated \$ 8.7 million for capital and development in 2005/2006. It was an increase of nearly 30 million from the previous period. A significant increase was noted in the following year of 2006/2007, of which \$ 119.7 million was allocated to capital and development. It was an increase of a staggering 200 % from the previous period. Capital and development is a category of fund to develop things like for example including but not limited to physical infrastructure such as roads, water and sanitations, electricity, irrigation systems, and etc. Government, when came into power in 2003, inherited a legacy of total destruction of basic infrastructure, a consequence of 1999 crisis. Therefore, most capital and development expenditure was allocated for rehabilitation or development of these basic infrastructures and other important needs. In addition, when looking at the proportion of 2006-2007 budget allocation alone (see Appendix 16), it can be noticed that the top five expenditures; public works, education, health, and natural resources, were allocated to these sectors that are crucially important to push for the growth in non-oil sector. These sectors are arguably important for future sustainability.

A number of progresses were made since that time. Many health facilities across the country were rehabilitated, immunization increased and infant and child mortality declined. Schools were rehabilitated and primary school enrollment rate increased nationwide. Roads and water supply

systems were rehabilitated in some part of the country. More reliable energy supply was restored to Dili, the capital city of Timor-Leste, through the rehabilitation of its power station. In agriculture sector, rice production increased due to rehabilitation of irrigation systems and livestock health services were restored (World Bank, 2005).

Looking at year 2011 alone, government identifies infrastructure, rural development and human resource development are the three top priorities of the seven national priorities (see Appendix 17). When examining the proportion of government expenditures during the last four years allocated to capital and development, it can be observed from Appendix 18 that budget allocation to capital and development enormously increased from just \$ 0.7 million in 2007 to \$ 86.5 million in 2008. In the following next three years, an increase of about \$ 80 million was noted in 2008, 2009 and 2010 respectively. There are a selected non-oil sector government prioritise to invest in such as investment in physical infrastructure, human resources, renewable energy, protection and preserving of the environment.

Investment in physical infrastructure

Investment in physical infrastructure is vital for Timor-Leste to diversify its economy that is totally dependent on oil into a non-petroleum economy (RDTL State Budget, 2011). Such investment aims at reducing the reliance on oil for economic development of the country. Most informants emphasized the importance of investing in non-oil sector. Comment on this, informant 1 stated;

“Investment in infrastructure is really important for ensuring sustainability”.

Sustainability in this context refers to the support that infrastructure provides to the development of other sectors i.e. facilitating the transport of agriculture products from rural areas to the market. Emphasizing on this further, informant 4 commented;

“We need to have basic need for infrastructure, which is the most important. Therefore, we need to invest in our infrastructure. This will than bring benefits to other areas such as tourism and other sectorial areas as well”.

Investment in infrastructure brings benefits to other sector as well. Informant 3 shared similar concern in following way;

“We invest in major infrastructures in order to unlock the potential of this country. The potential of this country cannot go anywhere if you don’t fix your roads, electricity, and other very basic stuff. If you don’t fix that your potential will never get developed. If you can unleash your potential by having your infrastructure ready, then we can make more money in the future with other things”.

Investment in infrastructure is argued to help the development of other non-oil sector such as agriculture, tourism, and fisheries and etc. Once these sectors are developed, non-oil revenues from these sectors are relied on to sustain and develop the economy of the country.

In addition, another objective of investing in key infrastructure is to attract private sector investment. Informant 1 emphasized the importance of such investment in the following way;

“We need to money to kick off development, i.e. building electricity, since it has long-term impact for attracting foreign direct investment”.

Moreover, investment in infrastructure could also provide opportunity for the involvement and capacity building of local private sector. Informant 1 stated that *“we use money for not only for infrastructure, but at the same time to capacitate our private sector”*. It is expected that once the projects are completed, local private sectors are equipped with sufficient skills and experience in their respective areas of business. Therefore, one of the benefits is to reduce domestic reliance on international companies.

The importance of investing in this sector can be seen from government policy to establish Infrastructure Fund with amount of \$ 599.3 million of total budget of \$ 895 million 2011 to finance a multi-year projects (see Appendix 19). It will finance, for example, nationwide electrification project, roads, bridges, public buildings, schools, hospitals and integrated financial systems. A portion of this Fund will be used to finance Tasi Mani Projects in South Coast for building port, oil supply base, and airports. In addition, government estimates an average of \$ 600 million with an increase of approximately 4 % each year will be allocated to Infrastructure Fund for the next four coming years (see Appendix 20).

Investment in Human Resources

Government establishes Human Capital Development Fund (HCD Fund), with a total of \$ 25 million for 2011 (see Appendix 21). The purposes of this Fund is to support and finance a multi-year projects and programs of human resource development, particularly to improve training of Timorese professionals in strategic development sectors such as justice, health, education, infrastructure, agriculture, tourism, oil management and financial management. It also includes overseas training in the form of providing scholarships for university and post-graduate courses (RDTL State Budget, 2011).

As mentioned earlier, a total of \$ 25 million is allocated to human resource development. A description of projects that will be financed by HCD Fund can be seen in Appendix 22. The amount of budget allocation in this sector indicates that this sector is urgently in need for investment. Informant 2 underlined the importance of investing in human resources in the following way;

“It is important to save some of the fund for the future, but also to use some of it to trigger the economic development in other sectors. For example, in human capital, it is the number one resource that we have. We are a small country. The experiences of other small countries tell us that they are successful not because they have lot of resources, but because of the people”.

Many politicians seem to be positive towards the investment on human resources. It is shared by informant 6 when giving the example of Singapore as an argument for sustainability. The informant stated;

“Singapore does not possess significant natural resources. The only resources they have are skilled human resources because they invest heavily on their education, health and their people. Looking at the fact that our education and health are very low, therefore, we need to invest on education, health, and infrastructure”.

Human resource is arguably, one of the important sectors to be invested. Apart from unanimous support for investing in human resources, the proportion of budget allocated to this sector alone

seems to indicate that government put a greater emphasis on the development of human resources.

Infrastructure and human resource development is identified by the government as two important sectors that need an urgent attention to be invested and the crucial importance that both play for the development of other sectors. But it does not mean that government does not pay attention to the other sectors. In fact, effort is put on the development of other sectors such as investment in agriculture, renewable energy and the conservation and protection of the environment.

5.3 Challenges encountered

Despite all the efforts have been put into various rules and regulations, policies, plan, programs and actions to ensure the sustainability of the petroleum revenues, there are some side-effects spilled out from the whole process. These side-effects pose a challenge for government's efforts to achieve sustainability of petroleum revenues. The main challenges identified are concern on planning and execution, unsustainable spending, and inflation. The following section will discuss these challenges in turn.

5.3.1 Concern on planning and execution

Despite all the efforts that have been done to ensure the sustainability of petroleum resources, the concern has been the lack of planning and execution from the government side. There seems to be a lack of correlation between annual budget and long-term vision and planning. This issue was raised during the interview by one of the informants in which he commented;

“IMF, in their report, is concern about Government's expenditure which does not include a detailed costing on recurrent expenditures and recovery cost”.

Given the limitation of institutional capacity of the public sector, a gradual increase of the budget could also raise the challenge of executing it. This concern is shared by one of the informants in the following way;

“When we have a lot of money, we also have a lot of ambitions. But at the end we cannot implement them all. Government needs to be more careful in spending money and should

take into the consideration the institutional and human's capacity to execute the proposed big expenditure. Otherwise, we spend carelessly”.

The increase budget proportion in the environment of limited institutional and human capacity could result in bottleneck. Comment on this, informant 5 stated;

“The limited implementing capacity of the government has often resulted in these money were spent without generating any good results”.

The limitation of institutional and human capacity puts pressure on the effective and effective execution of the budget. Therefore, Bacon and Tordo (2006) propose that government, when facing with this challenge, should establish a useful and sustainable expenditure plan and it is crucially important to have strict expenditure planning and controls in countries with large resource revenues. Lundahl and Sjöholm (2006) suggest to spending bottleneck, which is to save the oil revenues and not use more than what can be efficiently spent. In another word, spending should be adjusted to context of the country i.e the institutional and human capacity. Otherwise, resources are spent carelessly on unsustainable development that could jeopardize the sustainability.

5.3.2 Concern on unsustainable spending

Government in most resource rich countries tends to recklessly use non-renewable natural resources for development that are mostly unsustainable. Bacon and Tordo (2006) argue that when revenues are high, government is tempted to undertake projects, which intended mainly for show or ones without sound economic foundation. ‘Easy money’, both argue, can result in poor contracting because government fails to ensure that projects implemented have a value for money. In the case of Timor-Leste, the key challenge Timor-Timor faces is “to enhance the effectiveness of public spending” (IMF, 2010). A number of informants during the interview raised the concern on the unsustainable spending. They recommended;

“We need to be prudent in our spending and therefore we should not increase our spending unnecessarily. In another word, we should not “pour” the money in the economy”.

Unsustainable spending could be argued from different perspective. First, it refers to spending which does not take into account the long-term sustainability perspective. In another word,

money is wasted on short-term unproductive projects. Sala-i-Martin and Subramanian (2003) found that resource rich countries tend to have a poor record on securing productive public investment and some cases a lot of money are wasted on failed projects (cited in IMF, 2009).

Second, unsustainable spending means the possibility of posing the risk on the sustainability of Petroleum Fund. Petroleum Fund Law allows money to be transferred from Petroleum Fund no more than Estimated Sustainable Income, which is set at 3 % to finance the State Budget. ESI is designed to protect against changes in oil price and to guarantee that Timor-Leste continues to receive revenues after all oil and gas has been extracted and sold. Government, in a number of occasion, has taken money out from the Fund exceeds the ESI. There has been concern that the continuous excessive withdrawal from Petroleum Fund could the risk the sustainability of petroleum revenues which is accumulated in the Petroleum Fund. Comment on the excessive withdrawal of Petroleum Fund, informant 6 stated;

“Government takes out a lot of money, but they are not well invested or “planted”. This money is just lost or disappeared into someone else’s pocket. If such practice continues and an unforeseen incident happens to our oil production, or our oil is depleted, our only fund will be gone as well, and consequently we are entering into a resource curse”.

5.3.3 Concern on inflation

Another major concern has been the impact of government’s expenditure on inflation. Coren and Neary (1982) argue that when “channeling too many resources into the domestic economy may create inflationary pressures” (p.12 cited in IMF, 2009). Inflationary pressure is more prevalent when the economy is reaching its absorptive capacity limit. In fact, IMF (2011) predicted the potential for high inflation in short-term with increased public spending. According National Directorate of Statistic inflation reached a record high in 2007 and 2008 about 9 % and 8 % respectively. Inflation rises again to 9.2 % in Dili and 8 % in Timor-Leste in 2010. Thus, IMF (2011) recommended a slower pace of public spending growth would help to contain inflationary pressures. With the rise of inflation, as Lundahl and Sjöholm (2006) observed in the case of Timor-Leste, it will become difficult for non-oil sectors that attempt to establish themselves in the export market to compete for resources.

5.4 Summary

After an extensive collection of both primary and secondary data, I have come to the following conclusion of findings as a point of departure for discussion in the next chapter. Rules and regulations play an important role to ensure the achievement of sustainability of petroleum revenues. Timor-Leste Constitution envisages the importance of sustainable extraction and use of natural resources and requires the establishment of a mandatory financial reserve.

Petroleum Fund Law, number 9/2005, is an important regulatory framework. It lays down key guidelines for the operation and management of Petroleum Fund, collection and management of petroleum receipts, regulates transfers to the State Budget and provides government accountability and transparency. It is designed to manage petroleum revenues wisely and sustainably and to avoid resource curse.

Petroleum Fund is an instrument to contribute to the wise management of petroleum resources for both current and future generations. Estimated Sustainable Income, a limited withdrawal of the Petroleum Fund, is designed to limit government over withdrawal of Petroleum Fund. The transferred fund, channeled through state budget process, is to finance non-oil budget deficit.

Regarding the management of Petroleum Fund, Minister of Finance is the owner of the Fund and responsible for the overall management of the Fund. He/she makes decision about investment strategy and evaluates and monitors operational management of the Fund. He/she also provides a regular report to Parliament. Central Bank is the operational management of the Fund. Central Bank provides regular report on quarterly basis to the Minister of Finance and the public. Regular reports on the management of Petroleum Fund play plays such as important role in the whole process both as planning and controlling mechanisms.

The majority of the Petroleum Fund is invested in international financial market. The existing conservative investment strategy, 90 % and 10 % to be invested in US-denominated bonds and equities, is to avoid any associated risks and gain return on investment which translates into permanent income can be used by government to finance its budget deficit. Besides investing in

financial market, a small portion of the Fund is transferred to the state budget process to be invested non-oil sector. This money is invested in developing physical infrastructure, human resources, agriculture, renewable energy, and protecting and preserving the environment. The challenges encountered are concern on poor planning and execution from the part of government, concerning on unsustainable spending and the rise of inflation.

6. DISCUSSION

The present chapter discusses and interprets the empirical data which have been collected in the previous chapter. The discussion and interpretation of the findings are carried out in the light of theoretical frameworks that have been selected and discussed in theoretical chapter.

6.1 The influence of institutional environment on government approach towards sustainability

The empirical data presented in the previous chapter provides interesting description of Timor-Leste government approach towards the sustainability of petroleum revenues. Even though, Timor-Leste has just got its independence ten years ago, but concern on sustainability of petroleum revenues is well taken into account since the early days. This concern is reflected in the Constitution and National Development Plan. The interesting question to ask is how sustainability is institutionalized?. DiMaggio and Powell (1983) state that institutionalization occurs due to coercive, mimetic and normative pressures from institutional environment. In the case of Timor-Leste, there are both internal and external source of pressure that influence government approach towards the sustainability.

Since Timor-Leste gained its independence ten years, the Constitution calls for a fair and equitable management of natural resources and the need for establishing a mandatory financial reserves. Petroleum Fund Law in particular goes further to recommend a wise management of petroleum wealth and saving for future generation. These concerns are understandable due to the fact that currently Timor-Leste relies mostly on petroleum revenues for its economic development. Petroleum revenues make up 90 % of government revenues. Despite Timor-Leste has substantial endowments of natural resources, but the exact size of them is unknown and these resources are limited and exhausted within 20-30 years. In addition to the complex operations of petroleum activities, the incurrence of substantial costs and unstable oil prices, the unsettling maritime boundary with its neighboring country Australia even complicates this further. Apart

from that, the experience of resource rich countries that fall into the trap of resource curse is also, another form of external pressure to force Timor-Leste government in particular to take into account the sustainability of its petroleum revenues. Therefore, the aforementioned evidence suggests that Timor-Leste, to certain extent, is coerced to pursue sustainability. The evidence seems to accord with the theoretical argument presented by Meyer and Rowan (1977). Both argue that organizations are driven to adopt and implement prevailing rationalized concepts institutionalized in society because their dependence for legitimacy, resources, stability and survival (Meyer & Rowan, 1977). In another word, when organizations face with resource scarcities, they are more likely to adopt rules and practices made mandatory by institutions they are dependent on (Fein & Mizuchi, 1999). Timor-Leste reliance on petroleum revenues, which are limited exhausted within the next few years, compels the government to institutional sustainability practices.

One of the institutionalized action government takes to address the concern on sustainability is by establishing the Petroleum Fund. The Fund is based on the Norwegian model and it is often referred to the Norwegian Plus due to fact that Timor-Leste Petroleum Fund allows a 3 % withdrawal from the Fund compare to 4 % set by Norwegian model and the existence of Consultative Council that Timor-Leste has. Timor-Leste would be better served, now that they have established a Norwegian-based institutional framework, if they paid attention to the countries whose experience they wish to avoid (Drysdale, 2007). Therefore, Timor-Leste mimics the successful experience of Norway in the management its resources or not do fall into resource curse. Such practice is understandable because when facing with uncertainties, organizations tend to imitate peer organizations that seem to be more successful (DiMaggio & Powell, 1983, Larrinaga-Gonzales, 2007). In another word, when facing with the fact most resource rich countries fall into resource curse, Norwegian model is seen as convenient source of information to be successful as Norway or to avoid the experience of resource curse.

The normative type of pressure also seems to have been prominent in driving Timor-Leste towards the sustainability of petroleum revenues. Normative pressure stems primarily from professionalization (DiMaggio & Powell, 1983). The evidence show that in Timor-Leste case

normative pressure presents in the active involvement of the IMF in providing technical assistance to Timor-Leste on the preparation, the establishment and the on-going operation of the Petroleum Fund. IMF directly or indirectly through its assistance and advice influence Timor-Leste to adopt practices IMF subscribes to regarding the management of petroleum revenues. Apart from IMF, Norway has a wealth of experience in the petroleum industry, so the Norwegian government provides the majority of advice and assistance in skills and capacity development to the individuals working in the East Timorese petroleum institutions (Drysdale, 2007). The consequence of this normative pressure, directly or indirectly by Norway is evidenced by the establishment of Petroleum Fund that is model after Norwegian model. In regard to this fact, it seems that Timor-Leste is influenced by either mimetic or normative pressure. The former is to with Timor-Leste imitating the Norwegian model and the latter is to deal with technical assistance that Norway provides influence Timor-Leste to subscribe to Norwegian best practices. Furthermore, Being one of EITI members, Timor-Leste, part of sustainability approach, is required to verify and publish company payments and government revenues from petroleum activities. Such compliance is argued to ensure that petroleum resources are used for the long-term interest of Timor-Leste's people. Timor-Leste, being part of this professionalization, is therefore being pressured normatively to follow the best practices of accountability and transparency of established by the EITI. It is also interesting to note here that being part of EITI, Timor-Leste is also indirectly coerced to comply with rules and regulations established by EITI. Even though, the effectiveness of such compliance on sustainability of petroleum revenues is difficult to measure, but at least it can be argued that such compliance by Timor-Leste is at least to seek for legitimacy and support.

There is no clear cut distinction of which of the three mechanisms exerts more pressure on Timor-Leste government's approach towards sustainability. DiMaggio and Powell (1983) stated that it may not always possible to distinguish between the three forms of institutional pressure. They maybe operate simultaneously; therefore, it is difficult to determine which form of pressure is more dominant (cited in Timoshenko & Adhikari, 2010, p.473). The evidence shows that the institutionalization of sustainability, in Timor-Leste case, is influence by internal and external factors through coercive, mimetic and normative pressures. It can be observed that coercive

pressure has greater influence on government to pursue sustainability. The finding that Timor-Leste reliance on petroleum revenues from the only petroleum production taking place in JPDA has been one of the arguments pushing for sustainability seems to support this claim.

Furthermore, Petroleum Fund Law sets the limit of 3 % allowable withdrawal from the Petroleum Fund. Justification is required for any withdrawal exceeds the established limit. Government in a number of occasions has withdrawn more the ESI which previously did not occur. It seems that such restrictions limits government's discretionary power to fulfill its political obligations particularly to meet the needs of current generation whom are more than 20 % are unemployed. Thus, government faces the dilemma of balancing between meeting the needs of current generation and saving for future generation. This concern is evidenced by the following remark of informant 3;

“We are not only low income country, but also fragile state. Fragile state needs to be managed differently because you have lot of sensitive there that you need to be careful. If you don't deliver, this or next government, you are basically in trouble. In regard to the concern that we need to save all, we have to take in account the fact that Timor-Leste is a fragile state, therefore, if any government, this or previous, fail to deliver, will only create more trouble or unrest. It will ultimately affect stability, which is the main determinant for economic development”.

It seems that government's compliance with institutionalized rules often undermines its support and legitimacy (Meyer & Rowan, 1977). Government realizes the mounting of pressure that is put forward by the people who expect government to do more. Therefore, government resorts to a different approach to sustainability, which sometimes mean circumventing the rules and regulations. Such action is deemed desirable by the government i.e. to withdraw more the ESI, in order to carefully deal with “sensitivity there” and the fact of Timor-Leste a low income and fragile state. Most of government's expenditure is allocated to the development of infrastructure, education and agriculture. These sectors are in the near term becoming the source of employment for the majority of unemployed Timorese. Government's concern on legitimacy is understandable because if government fails to fulfill the need of current generation who are mostly unemployed, they will be punished in the form of the emergence of “trouble or unrest”.

Thus, government faces the dilemma of strictly following the established controlling mechanisms and at the same time balancing and fulfilling the urgent needs of current generations. When failing to comply with the former could result in unsustainable spending, poor execution and even the possibility of plunge into resource curse. However, without carefully dealing the sensitivity of current generation could cause trouble or unrest. A more balanced solution to solve this dilemma remains to be seen.

6.2 The institutionalization of sustainability

Having discussed institutional pressures, either through coercive, mimetic and normative mechanisms, that influence Timor-Leste government actions towards sustainability of petroleum revenues, the next question would be what the institutionalized practices has government adopted and implemented. In another word, what rules and regulations, policies, plans and programs Timor-Leste government has done to ensure the sustainability. This section discusses this question in the light of institutional theory.

The first thing government does in response to the call from the Constitution for the establishment of a mandatory financial reserve is by enacting Petroleum Fund Law. In turn, the Law lays down key parameters for the operation and management of Petroleum Fund, collection and management of petroleum receipts, regulating transfers to state budget and providing mechanisms for government's accountability and transparency.

The Petroleum Fund Law has a great implication for the establishment of Petroleum Fund. Even though, there are numerous elements of management controls are used by government, but the evidence points to the fact that budget seems to have become an important element of management control in the Timor-Leste public sector particularly its function in the management of petroleum revenues. One of the implications Petroleum Fund Law has on the Petroleum Fund is that the Fund is to be integrated into normal budget process. In doing so, the budget determines how much is to save and how is to spend. As saving mechanism, the Fund is designed to benefit future generation. As stabilization mechanism, the Fund is intended to help ensuring budget predictability in the form of transferring the required amount to finance non-oil

budget deficit. The interplay between Petroleum Fund Law and Petroleum Fund can be explained in the following examples. The Law requires that all revenues are saved in the Petroleum Fund. In addition, only 3 % of the Fund is allowed to be transferred to state budget. Justification is required, if the transfer exceeds the 3 %. In doing so, as it is argued to ensure that the Fund capital is intact. The Law also determines the 90 % of the Fund to be invested in US treasury bonds and 10 % of it is invested in qualifying instruments. This conservative approach to investment is argued to avoid investment in high risk projects with uncertain returns. Apart from investment in financial market, the Fund, through the transfer to state budget, is also invested in non-oil sector i.e. infrastructure, education, health, agriculture, and renewable energy.

The Law clearly details roles and responsibilities required from each related entities i.e. Ministry of Finance, BPA, Parliament, IAB, and Consultative Council to ensure the proper management of the Fund. This evidence suggests that rules and regulations play important roles on the sustainability of petroleum revenues. The institutionalizations of the aforementioned actions are due to the force of law (Meyer & Rowan, 1977). In another word, rules and regulations coercively pressure government to undertake such institutionalized actions (William et al, 2009). It could be summarized that in response to the concern on sustainability of petroleum revenues, Timor-Leste government adopt and implement the following institutionalized actions i.e. establishing the Petroleum Fund Law, and Petroleum Fund, investing the Fund in international financial market and non-oil sector through the normal budget process and upholding accountability and transparency on the management of the Fund. All these institutionalized actions are argued to contribute to the achievement of sustainability of petroleum revenues.

6.3 Reporting mechanisms on sustainability

This research makes an important finding of the roles of reports in helping government's approach sustainability of petroleum revenues. In the case of Timor-Leste, despite numerous controls mechanisms are in place, but the evidence show that budget plays such an important role as management control to ensure the sustainability of petroleum revenues. Budget is central to, and the foundation of management control systems in most organizations (Malmi & Brown,

2008). The annual budget prepared by the government details description on how much is spent on public consumption and how much is saved either by investing it physical assets i.e. infrastructure, education, health, and agriculture or international financial market. It is the most important organizational process with respect to accountability (Goddard, 2004). Budget is designed to control over public money and for accountability to public authority. Thus, the clarity of budget presentation in linking expenditure to activities and to responsible officials is crucial (Wildvsky, 1978). In this context, budget functions as controlling mechanism to make sure actions are carried out on the right track towards the achievement of sustainability. Budget indeed plans how much of Fund is transferred to state budget and how of the Fund is saved in a particular fiscal year. In doing so, budget, as a control mechanism, focuses on the planning acceptable levels of behaviour (Malmi & Brown, 2008). Budget is designed to ensure that daily activities of all actors come together in a coordinated in a set of actions towards the achievement of goals and objectives (Otley et all, 1995, p.42).

In addition, Petroleum Fund Law also requires government to provide annual report and annual financial statement to Parliament. Such reports are expected to cover the management of Petroleum Fund. In this case, these reports function as accountability mechanism. Government is asked for justification regarding their performance. These reports are means of evaluating government performance. Otley et all (1995) argue “regular observations and reports on actual achievement are used to ensure the planned actions are indeed achieving desired results” (p.42). These reports are measured and compared with planned budget and performance target. If government falls short of its target and its performance takes off from the track towards sustainability corrective actions should taken and acted upon to ensure the path towards sustainability is on the right track. The role of these reports is to generate feedback information which can be used by the government and overseeing entities to ensure the achievement of sustainability.

However, these reports, as controlling mechanism, come with some limitations. Most of these reports do not reflect the realities on the ground. These reports are “ambiguous because it cannot account for all the conditions that make the loses come about” (Kirk & Mouritsen, 1996, p.246).

To put it into context, they tend to focus mainly on the achievement of targets denominated in figures or numbers i.e. the Fund balance, its investment strategy, return on investment, and the proportion of investment allocated to and implemented in non-oil sector. However, these reports do not provide account of i.e. quality of investment in non-oil sector, and whether or not such the benefits of such investments are accrued to the Timorese people. It seems that these reports are designed for accountability and measuring the performance of Petroleum Fund, whereas little attention is given to the evaluation of performance in non-oil sector. These reports only portray the reality in a very limited perspective. A better alternative is therefore needed to complement in limitation of the existing reporting mechanisms.

In addition, most government's activities are one-time and non-recurring. Thus, reports on government's performance, to certain extent, does not make any difference. In another word, when discrepancy is found, correction action cannot be taken to rectify it. The only possible action taken is to not repeat the same mistake in the future again. Thus, these reports provide information on government's performance on management of petroleum revenues, but they are to certain extent ineffective and inefficient, because they fail to help government to correct and improve their failure. Thus, comprehensive reports are needed in conjunction to or instead of the existing ones. Thus, it can be argued that "conformity to institutionalized rules often conflicts sharply with efficiency criteria" (Meyer & Rowan, 1977). What should have been done instead is an on-going supervision and monitoring of government performance instead of waiting for quarterly and annual reports. Since provision of these reports does not help government in rectifying any discrepancy exists in its performance, government's ceremonial subscription to such practice established by rules and regulations is merely to gain legitimacy and support.

7. CONCLUSION

In this chapter the research question raised in the introductory chapter is answered in short-but-concise based on previous empirical findings and analysis. This research attempts to describe Timor-Leste central government approach towards sustainability of petroleum revenues. To be more specific, it seeks to provide answers to the following research question; *“how does Timor-Leste central government approach sustainability with respect to its petroleum revenues”*. To answer this question, institutional theory and MCS package were used to discuss and interpret the findings.

It seems that the institutionalization of sustainability in the case of Timor-Leste is influenced by institutional environments either internally or externally. Coercive pressure is stemmed from the fact that Timor-Leste total reliance on petroleum revenues and other uncertainties surrounding its exact size of petroleum reserves. Rules and regulations also affect the government of Timor-Leste to establish the Petroleum Fund. The Fund is based on the Norwegian model. Timor-Leste resort to follow the example of Norway in managing its resources is to avoid the experience of resource curse and to be successful as Norway. The involvement of IMF and other organizations in the design and implementation of the Petroleum Fund is another example of mimetic and normative influence on the institutionalization of sustainability by Timor-Leste government.

Despite all of that, government’s compliance with institutionalized rules and regulations, compromises its support and legitimacy from the people. This concern is evidenced in the following comments;

“We have to take in account the fact that Timor-Leste is a fragile state, therefore, if any government, this or previous, fail to deliver, will only create more trouble or unrest”.

Having acknowledged the pressure from the institutional environment, government responds to the concern of sustainability by establishing Petroleum Fund Law, and Petroleum Fund. The Law lays down key parameters for the operation and management of Petroleum Fund, collection and management of petroleum receipts, regulating transfers to state budget and providing

mechanisms for government's accountability and transparency. Petroleum Fund should be invested international financial market and non-oil sector through normal budget process. The latter imply that the investment in infrastructure, education, health, agriculture, and etc. Only 3 % of the Fund is allowed to be transferred to state budget in order to finance non-oil budget deficit.

Reporting mechanisms such as annual budget and annual financial statement are regularly provided by respective entities to ensure the accountability and transparency. Budget has become the main element of management controls. These reports function as planning mechanism by directing government's resources to achieve sustainability. In addition to that, these reports also function as accountability mechanism. In this context, government is hold accountable for their performance. The feedback information derived from is acted upon to ensure that government's actions are on the right track toward sustainability. However, the effectiveness and efficiency of these reports is called into question because they only present numerical or figural performance, but none of the impacts of such performance for example on people life or quality of the projects is presented. Since most government projects are once-a-time and non-recurring. Therefore, corrective action is difficult to take, except for avoiding the same mistake again. This further undermines the effectiveness and efficiency of these reports towards the sustainability of petroleum revenues.

This research focuses solely on approaches taken by the government of Timor-Leste to ensure the sustainability of petroleum revenues. Therefore, the identification and description of government's actions in response to institutionalized pressure both internally and externally are presented here. The question remains is whether or not these institutionalized activities adopted and implemented by the government of Timor-Leste are effective and efficient in term of their function as controlling mechanisms towards the sustainability of petroleum revenues. This doubt is supported by the intention of the government to change in particular the current Petroleum Fund Law. Therefore, it is suggested that future research to look into this particular issue. In addition, since Timor-Leste has copied most of Norwegian model of petroleum management, it

is therefore interesting for future research to do a comparative study between Timor-Leste and Norway on this issue.

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LIST OF APPENDIX

Appendix 1: Definition of petroleum revenues

Article 6

Petroleum Fund Receipts

6.1 The following amounts are Petroleum Fund gross receipts:

- (a) the gross revenue, including Tax Revenue, of Timor-Leste from any Petroleum Operations, including prospecting or exploration for, and development, exploitation, transportation, sale or export of petroleum, and other activities relating thereto;
- (b) any amount received by Timor-Leste from the Designated Authority pursuant to the Treaty;
- (c) any amount received by Timor-Leste from the investment of Petroleum Fund Receipts;
- (d) any amount received from direct or indirect participation of Timor-Leste in Petroleum Operations; and
- (e) any amount received by Timor-Leste relating directly to petroleum resources not covered in paragraphs (a) to (d) above.

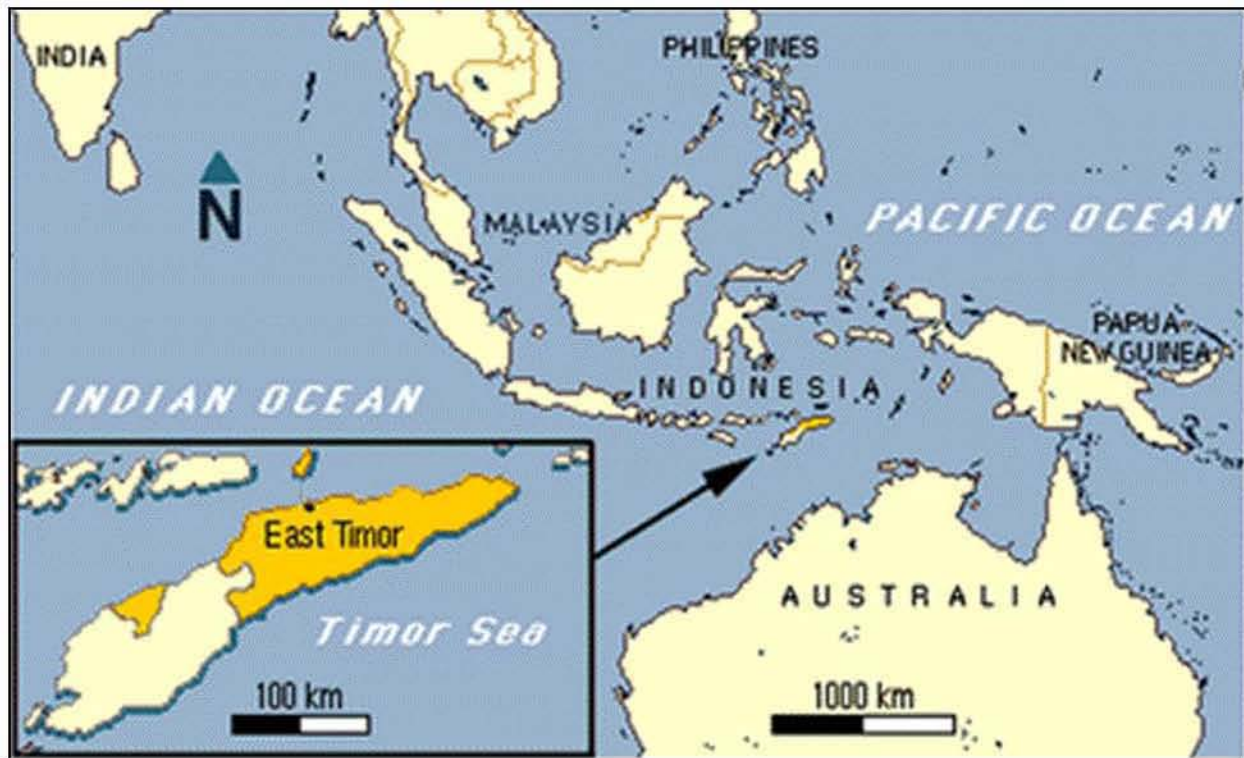
6.2 In the event that Timor-Leste participates in Petroleum Operations indirectly, as provided for in paragraph 6.1(d), through a national oil company, the receipts of the Petroleum Fund shall include the following:

- (a) any amount payable by the national oil company as tax, royalty or any other due in accordance with Timor-Leste law; and
- (b) any amount paid by the national oil company as dividend.

6.3. From the amount received in accordance with Section 6.1, the Central Bank shall be entitled to deduct, by direct debit of the Petroleum Fund account, any reasonable management expenses, as provided for in the operational management agreement referred to in Section 11.3.

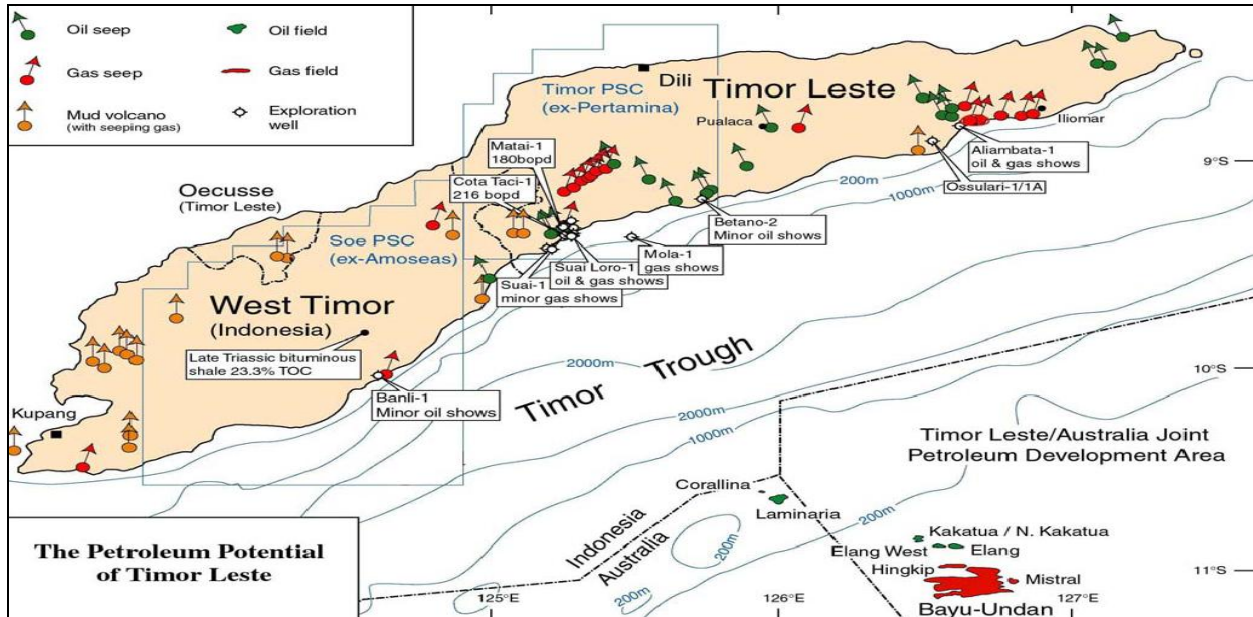
(Source: Petroleum Fund Law No.9/2005)

Appendix 2: Map of Timor-Leste²



² [(source: http://members.ozemail.com.au/~slacey/east_timor.htm) (accessed: 24/ March/ 2011)]

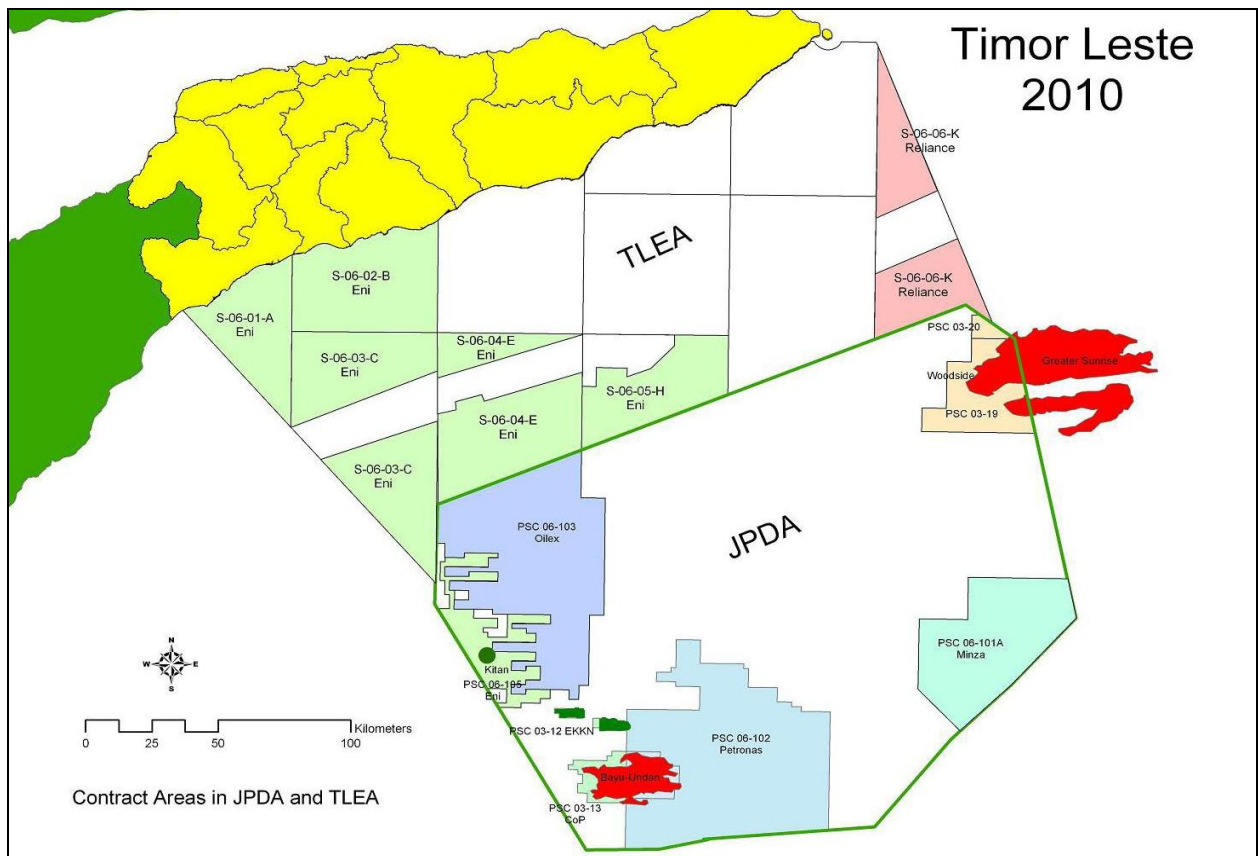
Appendix 3: Timor-Leste Oil and Gas Seeps



(da Silva, G., 2010, Petroleum Fund Management Seminar³).

³ Gualdino da Silva (2010), Revenue Management in Timor-Leste: An Overview to the Roles and Duties of the Autoridade Nacional do Petroleo (ANP) Timor-Leste, *Petroleum Fund Management Seminar*, Dili, 11 May 2010

Appendix 4: Joint Petroleum Development Area and Timor-Leste Exclusive Area



(Source: Watson, A., 2010⁴)

⁴ Watson, A., (2010), *Seminar for Civil Society: Timor-Leste Fiscal Regime and ESI Calculation*, IMF Fiscal Affair Department, Timor-Leste, 16 August 2010

Appendix 5: Interview Questions

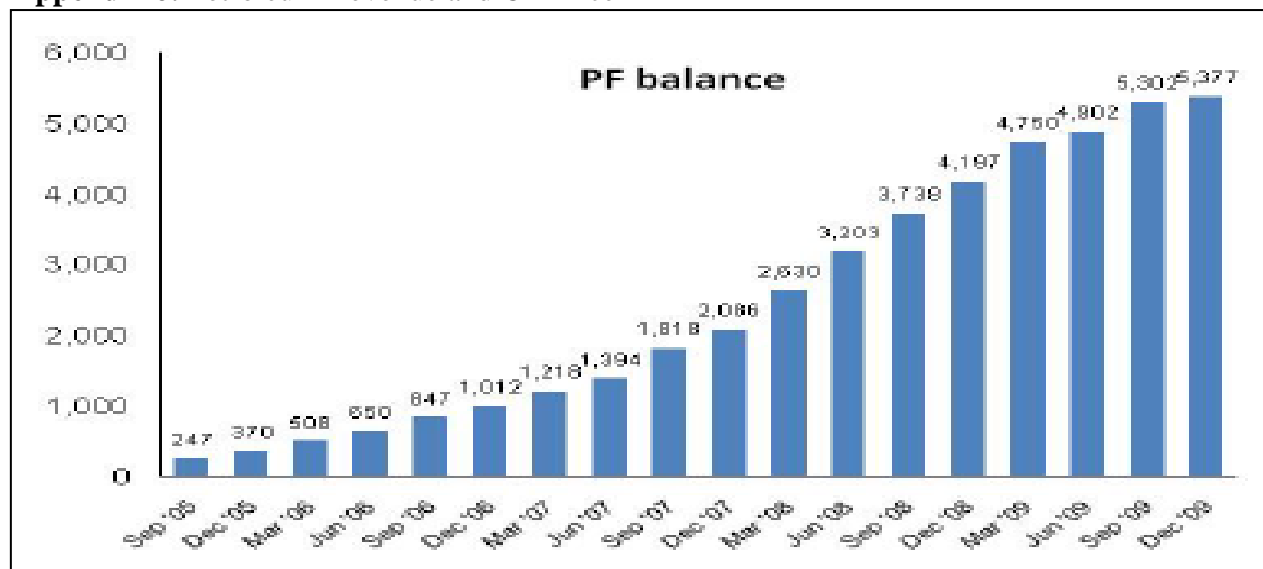
Research Question

How does Timor-Leste Central Government Approach the Sustainability of Petroleum Revenues?

Interview Questions

1. How would you define sustainability?
2. How do you relate the concept of sustainability to the management of petroleum revenue?
3. Why does Timor-Leste need to care about sustainability of petroleum revenue?
4. What are approaches the government has taken or are going to (should) take in order to achieve the sustainability of petroleum revenue?
5. What are the challenges of achieving sustainability?
6. How to balance the need for spending now and save for the future?

Appendix 6: Petroleum Revenue and Oil Price



(Source: Ovesen, 2010⁵).

⁵ Ovesen, V., (2010), Timor-Leste Petroleum Fund 2005-2010, *Petroleum Fund Seminar*, March 2010

Appendix 7: Calculating Estimated Sustainable Income

CALCULATING ESTIMATED SUSTAINABLE INCOME FOR A FISCAL YEAR

I. Estimated Sustainable Income for a Fiscal Year is the maximum amount that can be appropriated from the Petroleum Fund in that Fiscal Year and leave sufficient resources in the Petroleum Fund for an amount of the equal real value to be appropriated in all later Fiscal Years as determined in accordance with the formula in paragraphs II and III below.

II. Estimated Sustainable Income for a Fiscal Year is calculated according to the following formula:

$$r \times \text{Petroleum wealth}$$

where:

r is the estimated average real rate of return, or real interest rate, on Petroleum Fund investments in the future and, for the purposes of these calculations, shall be 3.0%.

III. In this Schedule, "Petroleum wealth" is calculated according to the following formula:

$$V + \text{present value } (R_0, R_1, \dots, R_n) = V + \sum_{t=0}^n \frac{R_t}{(1+i)^t}$$

where:

V is the estimated value of the Petroleum Fund at the end of the prior Fiscal Year

*R*₀, *R*₁, etc. are the published budget projections for expected annual Petroleum Fund Receipts minus investment returns for that Fiscal Year (*R*₀) and future Fiscal Years (*R*₁, etc.)

i is the estimated nominal yield on a U.S. government security, averaged over the years in which Petroleum Fund Receipts are expected

n is the number of years until no further Petroleum Fund Receipts are projected to be received.

IV. All assumptions upon which the calculations made pursuant to paragraphs II and III above are based shall be clearly identified and explained, and any changes made in these assumptions in subsequent calculations shall be clearly pointed out.

V. All assumptions made shall be prudent, reflect international best practice and be based upon internationally recognized standards.

VI. The amount determined in accordance with the formula in paragraphs II and III above shall be certified by the Independent Auditor.

(Source: Petroleum Fund Law, 2005).

Appendix 8: Investment Rules of Petroleum Fund

Article 14 Investment Rules

14.1 Not less than ninety per cent (90%) of the amounts in the Petroleum Fund shall be invested only in qualifying instruments described in Article 15.

14.2 Not more than ten per cent (10%) of the amounts in the Petroleum Fund may be, in accordance with all procedures laid down in this Act, invested in financial instruments other than those mentioned in Section 15.1, provided that such instruments are:

- (a) issued abroad;
- (b) liquid and transparent;
- (c) traded in a financial market of the highest regulatory standard.

14.3 The range of instruments included as qualifying instruments in Section 15.1 shall be reviewed by the Government, and approved by Parliament, at the end of the first five (5) years of the Petroleum Fund existence, having regard to the size of the Petroleum Fund and the level of institutional capacity.

(Source: Petroleum Fund Law, 2005).

Appendix 9: Qualifying Instruments

Article 15 Qualifying Instruments

15.1 Subject other provisions of this present article, a qualifying instrument is:

- (a) a debt instrument denominated in United States Dollars that bears interest or a fixed amount equivalent to interest, that is:
 - (i) rated Aa3 or higher by the Moody's rating agency or rated AA– or higher by Standard & Poor's rating agency; and
 - (ii) issued by or guaranteed by the World Bank or by a sovereign State, other than Timor-Leste, provided the issuer or guarantor is rated Aa3 or higher by the Moody's rating agency or rated AA– or higher by Standard & Poor's rating agency; or
- (b) a United States Dollars deposit with, or a debt instrument denominated in United States Dollars that bears interest or a fixed amount equivalent to interest issued by:
 - (i) the Bank for International Settlements;
 - (ii) the European Central Bank; or
 - (iii) the Central Bank of a sovereign State, other than Timor-Leste, with a long-term foreign currency rating of Aa3 or higher by the Moody's rating agency or AA– or higher by the Standard & Poor's rating agency;
 - (iv) a bank designated by Moody's rating agency with a long-term foreign currency rating of Aa3 or higher or designated by Standard & Poor's rating agency with a long-term foreign currency rating of AA– or higher.

15.2 The Investment Manager shall dispose of an instrument if it ceases to be a qualifying instrument because of a change in the rating of the instrument or the issuer of the instrument within one month of the instrument ceasing to be a qualifying instrument.

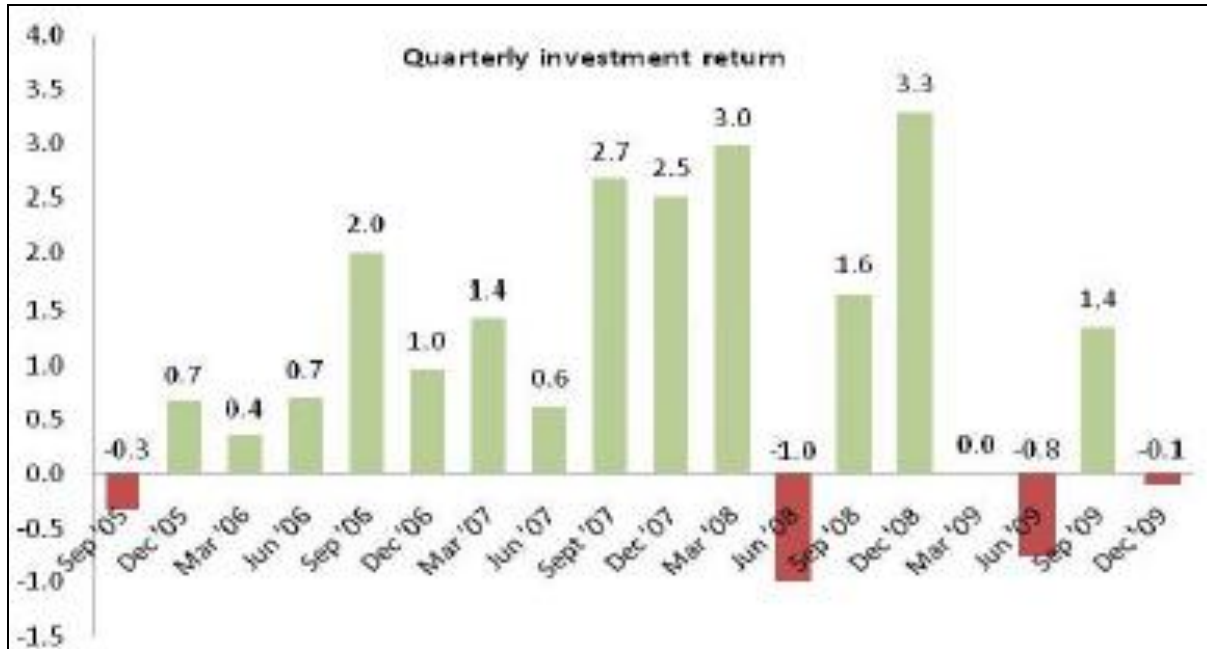
15.3 The average interest rate duration of Petroleum Fund qualifying instruments under Section 15.1 shall be less than six (6) years.

15.4 A derivative instrument is a qualifying instrument only if:

- (a) it is solely based on instruments that satisfy the requirements of Section 15.1; and
- (b) its acquisition reduces the financial exposure to the risks associated with the underlying instrument or instruments.

(Source: Petroleum Fund Law, 2005).

Appendix 10: Quarterly Investment Returns on Petroleum Fund



(Source: Ovesen, 2010⁶).

Appendix 11: Estimated Petroleum Fund Saving, 2009-2015 (\$million)

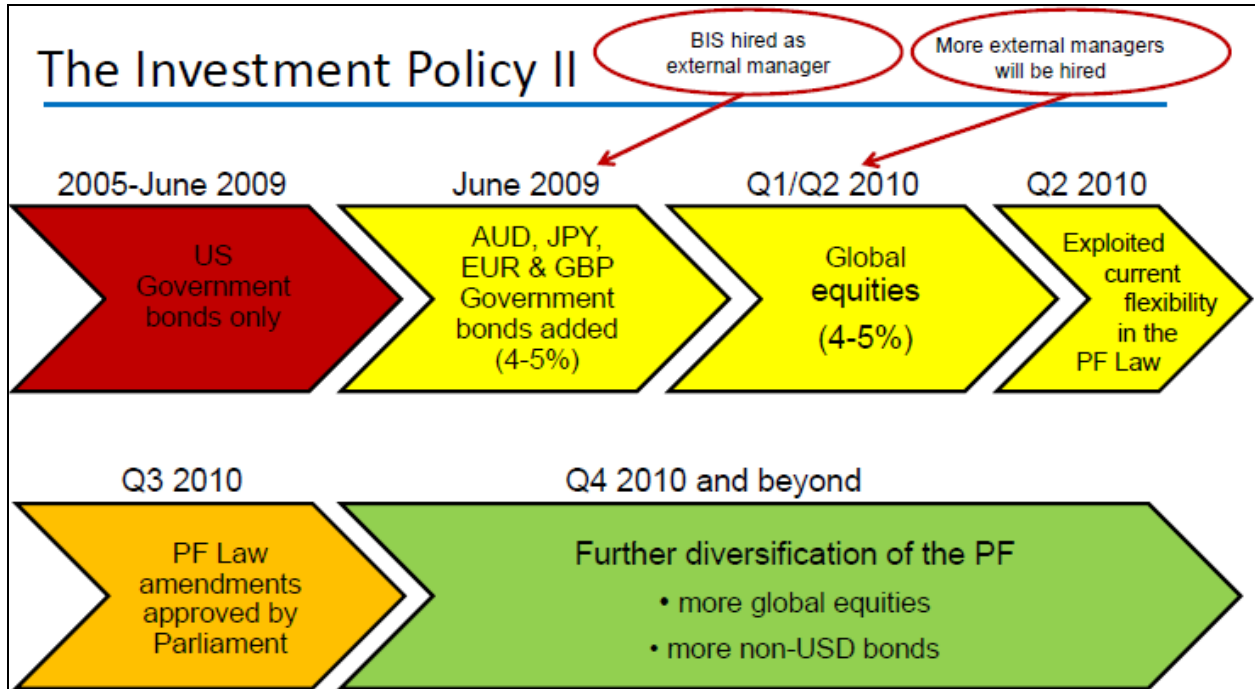
	2009 Actual	2010 Estimate	2011 Budget	2012 Projection	2013 Projection	2014 Projection	2015 Projection
Opening Balance	4,197	5,377	6,617	7,838	9,050	9,962	11,113
Petroleum Revenue excluding PF Interest	1,660	1,816	1,992	2,040	1,741	1,981	1,897
Petroleum Fund Interest*	177	200	289	337	379	419	463
Change in Value of the Fund	-143	41	0	0	0	0	0
BPA Management fee	-3	-6	-6	-6	-6	-6	-6
Withdrawal	-512	-811	-1,055	-1,159	-1,202	-1,244	-1,288
Closing Balance	5,377	6,617	7,838	9,050	9,962	11,113	12,179

(*) includes accrued interest

(Source: RDTL State Budget, 2011).

⁶ Ovesen, V., (2010), Timor-Leste Petroleum Fund 2005-2010, *Petroleum Fund Seminar*, March 2010

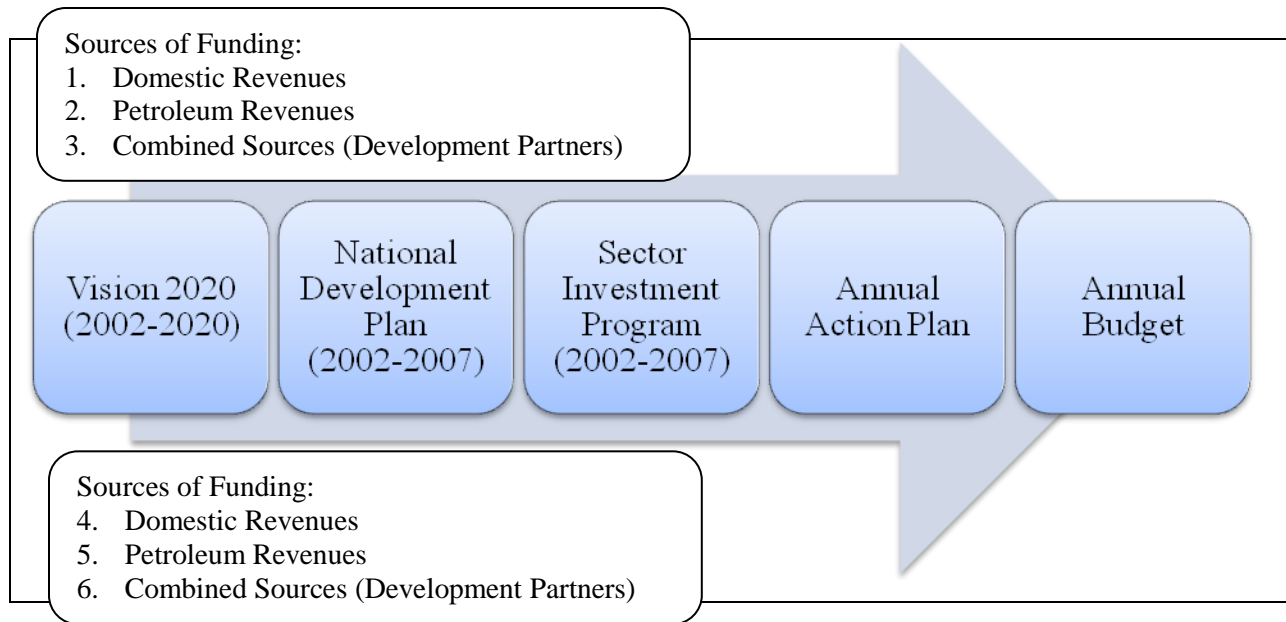
Appendix 12: Proposed Changes to Existing Investment Strategy



(Source: Ovesen, V., 2010, Ministry of Finance, RDTL⁷).

⁷ Ovesen, V., (2010), Timor-Leste Petroleum Fund 2005-2010, Ministry of Finance, 6 March 2010

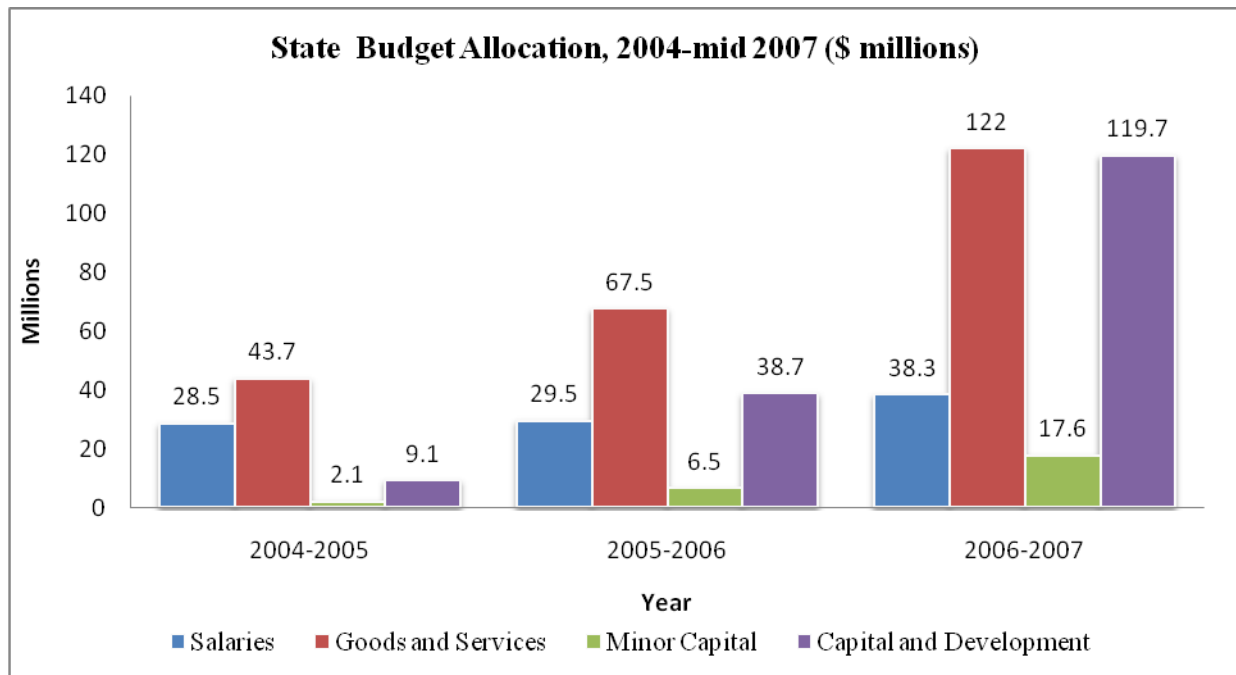
Appendix 13: Previous Governments' Approach towards National Development



Appendix 14: Sector Investment Programs (SIPs)

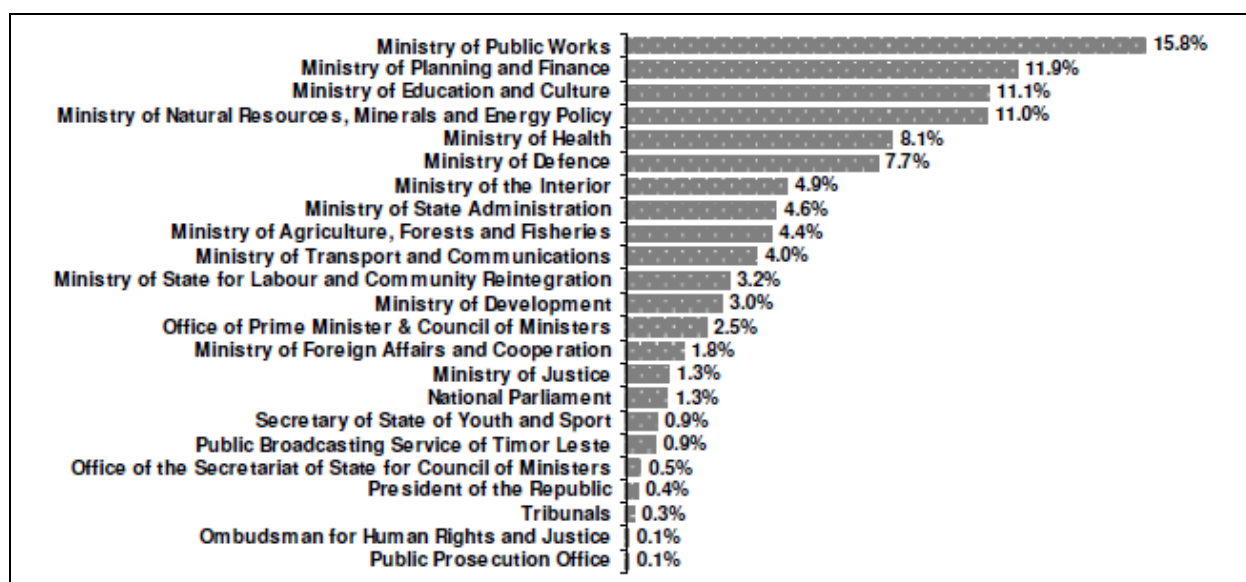
Category	Sector Investment Programs (SIPs)
Basic services	Education And Training And Health Care
Production-related sectors	Agriculture, Forestry And Fisheries, Natural Resources And Environment, And Private Sector Development
Basic infrastructure	Communications, Power, Transport And Water Supply And Sanitation
Governance	Public Sector Management, Local Government And Civil Society, Rights, Equality And Justice, Security, Peace Building And Reconciliation, And External Relations

Appendix 15: State Budget Allocation 2004-mid 2007 (\$ millions)



(Source: RDTL State Budget Documents 2005-2007)

Appendix 16: Portion of Total State Budget 2006-2007 Allocated to Each Sector (%)



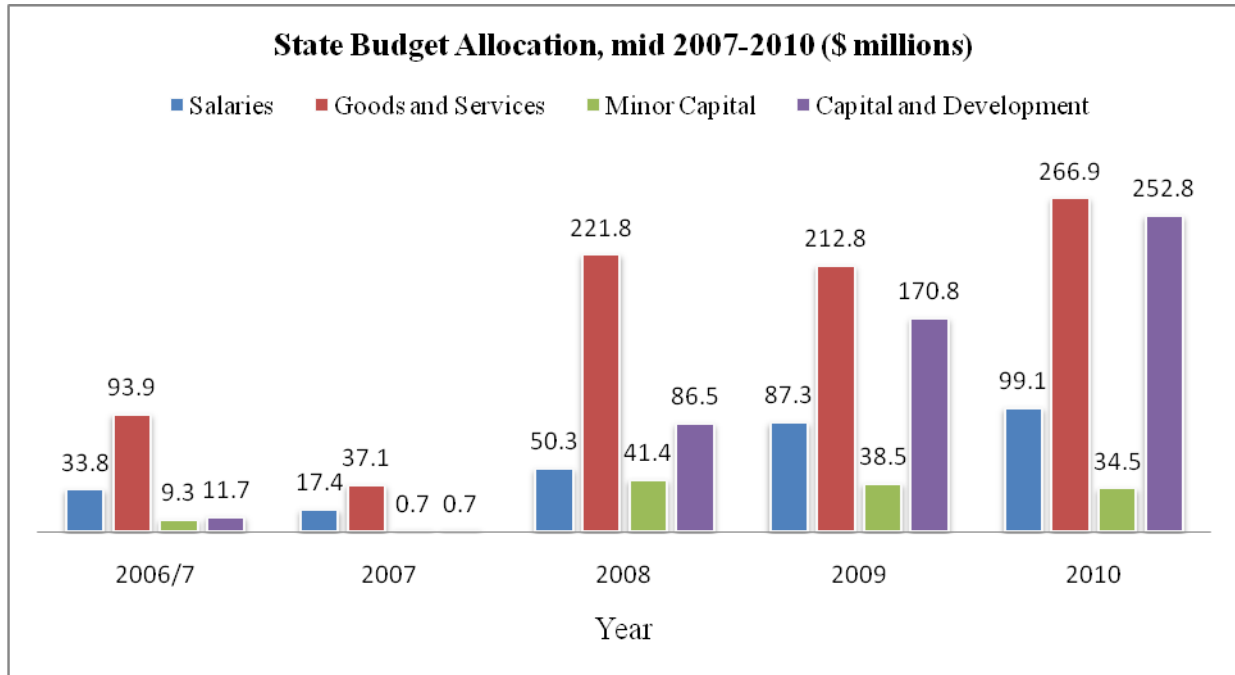
(Source: Drysdale, p.67).

Appendix 17: National Priorities for 2011

Expenditure Priorities for 2011		
National Priority	Category	Detailed Descriptions
NP 1	Infrastructure	Electricity, roads and bridges, water and sanitation
NP 2	Rural Development	Agricultural productivity, livestock, access to micro credit and environmental protection
NP 3	Human resource development	Professional and technical training, justice, health and teachers training, specialist training in finance, management and administration areas
NP 4	Access to justice	
NP 5	Delivery of public services	Assistance to vulnerable groups, health and educations, improve public service and access
NP 6	Good governance	Transparency, accountability, coordination between ministries and user services and training of inspectors and auditors
NP 7	Public security and stability	

(Source: RDTL State Budget, 2011).

Appendix 18: State Budget Allocation, mid 2007-2010 (\$ million)



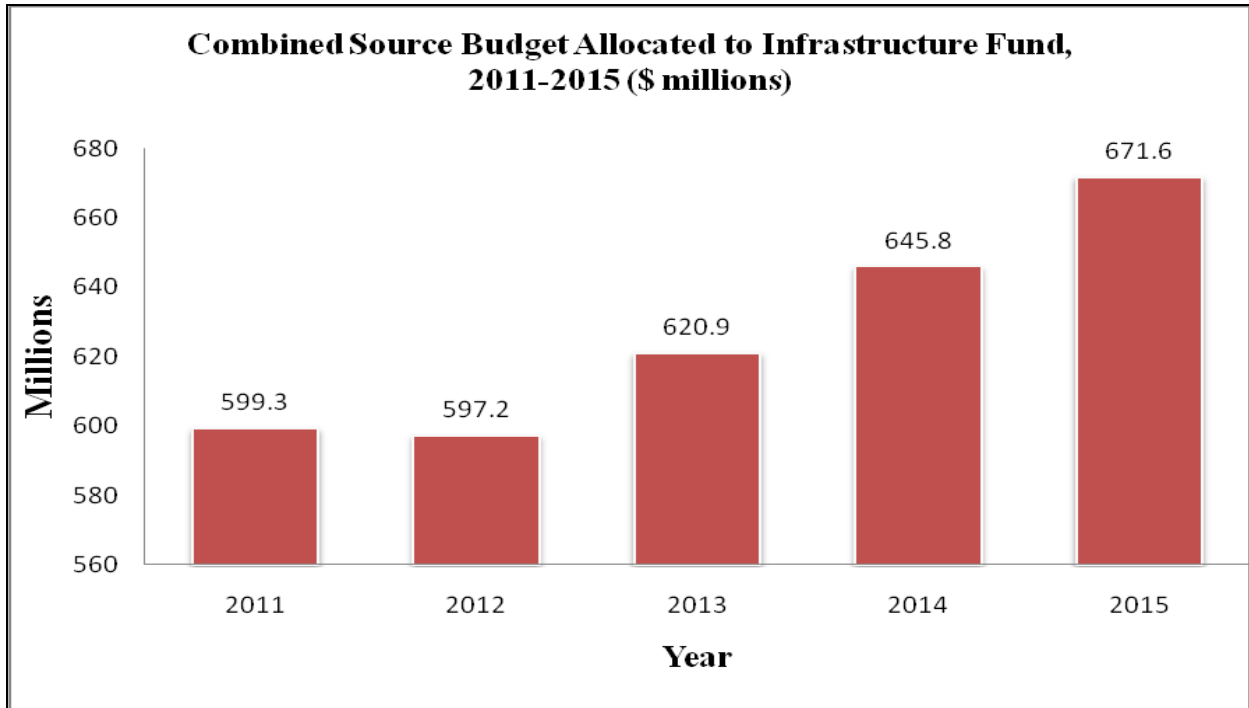
(Source: Adjusted from RDTL State Budget, 2011)

Appendix 19: Combined Source Budget, 2011-2015, (\$ millions)

Budget	2010	2011	2012	2013	2014	2015
CFTL	837.9	681.7	671.2	694.2	718.1	743.0
Infrastructure Fund	-	599.3	597.2	620.9	645.8	671.6
HCDF	-	25.0	30	35	40	45
General State Budget	837.9	1,306.0	1,298.4	1,350.1	1,403.9	1,459.6
Development Partners	256.8	194.8	112.7	75.2	32.7	0
Combined State Budget	1,094.7	1,500.8	1,411.1	1,425.3	1,4366	1,459.6

(Source: RDTL State Budget, 2011)

Appendix 20: Combined source budget allocation to Infrastructure Fund, 2011-2015 (\$ millions)



(Source: RDTL State Budget, 2011)

Appendix 21: Special Funds for Human Development, 2011-2015, (\$ millions)

Capital & Development	2011	2012	2013	2014	2015
Multi-Annual Projects	494.3	348	294.9	264.8	230.6
Large Projects	40.0	184	261	316	376
MDGs	65.0	65	65	65	65
Sub-Total	599.3	597	620.9	645.8	671.6
Human Capital Dev. Fund	25.0	30	35	40	45
Total	624.3	627	655.9	685.8	716.6

(Source: RDTL State Budget, 2011)

Appendix 22: Human Resource Fund Allocation for 2011

Human Resource Development Fund, 2011 (\$ millions)		
Project Description	Total Expenditure	Sector
Scholarships	\$ 7.7	Ministry of Education
Technical training	\$2.	Higher Education and Polytechnic Education
Scholarships	\$2.1	Public finance and computers
	\$2.5	Petroleum related courses
Professional training	\$2.6	Secretary of State for Professional Training and Employment
Training	\$2.4	Health and medicine
Professional training	\$1.9	Justice; registry officers, auditors, judges, notaries, attorneys, translators and inspectors
Technical training and scholarship	\$1	Public administration
Overseas training	\$548	National Army and Police Officers

(Source: RDTL State Budget, 2011)