

Review of the Roadmap for Sustainable Development in Timor-Leste: An Economic Policy Report

Jerry Courvisanos

Visiting Professor, Centro Nacional de Investigação Científica (CNIC)
Universidade Nacional Timor Lorosa'e (UNTL)

Dili, Timor-Leste

and

Federation Business School, Mt. Helen Campus

Federation University Australia

Ballarat, Victoria, Australia

email: j.courvisanos@federation.edu.au

and

Matias Boavida

Department of Public Policy, and
Centro Nacional de Investigação Científica (CNIC)

Universidade Nacional Timor Lorosa'e (UNTL)

Dili, Timor-Leste

email: matiasboavida@gmail.com

Final Report
July 2017



UNTL
Universidade Nacional Timor Lorosa'e

Federation
UNIVERSITY • AUSTRALIA

Executive Summary

This report reviews Timor-Leste Government's "roadmap" to sustainable development. This refers to the "roadmap" expounded in public speeches regularly over 2016 and 2017 by the Prime Minister, His Excellency Dr. Rui Maria de Araújo. The report is based on a five month research study while living in Timor-Leste by the first author. The research is from an economic policy perspective on how a developing country can engage with sustainable development. This study is validated from a previously researched and published "eco-sustainable framework". This framework has been adopted by the first author as an alternative, and much more viable, model of investment and innovation towards a transition path of economic development – away from the 20th Century maximum economic growth model with its consequent devastating social fragmentation and ecological destruction, to what is termed in this report a "SDG economic model".

The roadmap under review sets out in its own terms how the Government prioritises the United Nations' Sustainable Development Goals (SDGs) in the context of its strong commitment to the 2011-2030 Strategic Development Plan (SDP). On the 25 September 2015, Resolution A/RES/70/1 was passed in the United Nations by all its member states, with the Timor-Leste Government adopting the same resolution two days earlier under Government Resolution N°34/2015. The *Agenda* adopted is 17 broad goals (or SDGs) that encompass all aspects of sustainable development. This agreed *Agenda* specifies 169 targets grounded within the 17 SDGs, and which each country is required to form policies in respect to these targets with specific indicators developed to measure progress in achieving the overall goals. In TL's roadmap, all of the SDGs are included in the timeline, but with no specified targets for each goal. As agreed to by the g7+ group of fragile states, 20 indicators across 13 SDGs have been identified to be monitored (excluding the four ecologically-based SDGs which are considered "not as urgent").

The report has first-hand obtained data by the two academic authors over a period from 25 July to 13 December 2016, while the first author was on sabbatical leave at Universidade Nacional Timor Lorosa'e (UNTL), and two week trip in June-July 2017. The second author is a local East Timorese academic who provided crucial access to personnel and data sources, translated from Tetum and Portuguese into English, and drove through all sorts of roads as we visited many municipalities (as they are formally now known). In the process of this collaboration, the local author informed the first author of the rich myths, history and culture of this complex little country. Data was collected from the perspective of examining the role of sustainable development in the prevailing economic growth path. The data was then analysed in order to appreciate the capacity of (i) government policies, (ii) donor-based activities (supported by NGOs), (iii) social (cooperative) organisations, and (iv) private firms and individuals to develop along a sustainable development path, guided by the SDGs. For this undertaking, the academic research is designed without the SDP being presumed as the framework to analyse or review the SDGs. Using the SDP as the basis for reviewing the roadmap would contaminate the analysis by using a policy that is being scrutinised as the research framework. This is not a consistent or acceptable approach to independent research.

Overall, the findings reveal well-intentioned efforts by all in the Timor-Leste Government – executive, parliamentarians and public servants – to follow what can only be described as a commendable effort to chart a roadmap towards sustainable development in Timor-Leste. The problem in implementing this already well specified course is a set of issues that challenge both the Government and its people. The challenges are in three forms:

- (i) the ability to instil the SDGs within the established and vigorously defended maximum economic growth planning framework of the country, underpinned by an extractive resource-export dependency with severe negative consequences for social inclusion and environmental protection;
- (ii) the capacity to adjust the investment and innovation public funded policies (and donor-supported practices) away from existing rigid efforts on the ground; and
- (iii) the scope to alter prevailing “growth” ethos which requires radical change in cultural priorities underlying the critical financial, educational, community, ecological and political systems in the country.

By confronting these three sets of challenges bravely, the roadmap will be then be the appropriate vehicle to create the kind of sustainable development for the country that is its intention.

Disclaimer

As the first author is an Australian academic, a disclaimer needs to be made. He is an independent academic undertaking this roadmap review as part of sabbatical study leave at UNTL where he committed to use his research experience to assist the researchers at the university’s research centre, Centro Nacional de Investigação Científica (CNIC). This report was not commissioned or requested by anyone. The review is analysed on the basis of a previously researched and published “eco-sustainable framework” which the first author has used to analyse sustainable development policies in other developing and developed economies. As a result, the first author does not base this review on any presumptions of how planning works in this country. The presumptions this author comes with his deep research experience into economic, social and ecological sustainable development over 30 years in academia.

The first author has been trying to research Australia’s commitment to the SDGs. The commitment is evident on the United Nation’s SDG website. However, unlike the many documents under Timor-Leste, there are no documents under Australia on that site to support this commitment. The contact person listed on that website from the Australian Government emailed me back this message: “I ceased responsibility for UN Environment in 2012 and despite numerous requests have been unable to have the contact changed.” I have not been able to progress any further on this research at this stage. Thus, the first author’s involvement in this project is part of a larger economic sustainable development programme of research undertaken globally. Australia’s own record on sustainable development as a major fossil fuel exporter (like Timor-Leste), and its inability to address many environment, indigenous, and human rights in his own country is noted with great disquiet by the first author.

On the issue of sustainable development, the first author believes it is the other side of the mirror to what Pat Walsh reflects on in terms of Timor-Leste’s devastating period of Indonesian invasion. In both it is the role of reception, truth and reconciliation that needs to be addressed in order to move forward confidently. As Pat Walsh notes on his visit to the Egyptian Papyrus Institute:

I came across a painting on which depicted a scene entitled ‘*The Weighing of the Heart*’ ...Although set in the afterlife, the weighing of the heart involves a sort of public hearing at which the individual’s heart, understood as the source of evil or good, is weighed against the feather of truth. A heart which served as a source of murder, violence and the like will outweigh the feather leading to findings of guilt and sanctions. The owner of the heart free of major offences, as light as a feather one might say, will receive the key of life, what CAVR called ‘reception’. (Walsh, 2011, pp. 249-50)

The key to future life is being free of past unsustainable development.

Table of Contents

Executive Summary	2
Introduction	5
Method	7
Background	7
Sustainable Development Policy Framework	9
Findings	13
Planning framework	13
Investment strategy planning.....	19
Support implementing investment strategies.....	24
Discussion: Challenges, Opportunities and Options	30
Conclusion	36

LIST OF FIGURES AND TABLES

Figure 1: The Eco-Sustainable Framework	12
Figure 2: Business Approaches	35
Table 1: Timor-Leste Planning and Investment for Sustainable Development	15

APPENDICES

Appendix A: The 17 SDGs	39
Appendix B: The Roadmap	40
Appendix C: Detail of the Three Elements in the Eco-Sustainable Framework and its Application to Timor-Leste	41
Appendix D: 2011-2030 SDP Sustainable Development Targets	44
Appendix E: Summary of Primary Data Collection Sources	45
References	52

Introduction

The term Sustainable Development Goals (SDGs) was officially introduced and defined in the United Nations document, *Transforming Our World: The 2030 Agenda for Sustainable Development* (United Nations, 2015). The agenda in this document came about through a deliberative process involving the United Nation's 193 member states, as well as global civil society. This agenda, setting out 17 broad goals (or SDGs) that encompass all aspects of sustainable development, was accepted as United Nations Resolution A/RES/70/1 by all member states 15 months ago on the 25 September 2015. The agreed *Agenda* specifies 169 targets within the 17 SDGs in order for countries to be able to form policies in respect to their country's choice of targets and then identify indicators to measure progress in achieving these targets. Appendix A lists the 17 SDGs. As stipulated in Paragraph 54 of the Agenda:

Targets are defined as aspirational and global, with each Government setting its own national targets guided by the global level of ambition but taking into account national circumstances.

Further, the same paragraph opens by noting that the SDGs and their accompanying targets "are integrated and indivisible". This clearly means we all live in one ecosystem called Earth and that it is unviable to separate each goal or target as one individual item merely to tick off.

At the United Nations (UN), Timor-Leste led the group of fragile countries (called "g7+") in ensuring that the goal on peace, stability and effective institutions (SDG #16) was fully included, offering detailed wording for targets related to developing countries. As a signatory to the UN Resolution on SDGs, Timor-Leste (TL) committed itself in the same Paragraph 55 to "setting its own national targets guided by the global level of ambition but taking into account national circumstances" and ensuring the targets specified are "incorporated into national planning processes, policies and strategies". Thus, the goals cannot ignore local context nor merely accept development policies that are based on mainstream economic models that maximise economic growth to the detriment of overall sustainable development.

Context is critical when it comes to TL, as it became an independent nation only in 2002. This came after having secured a popular self-determinant separation from Indonesia which illegally invaded the then Portuguese colony 25 years earlier. This tiny nation relies principally on oil and gas, with coffee being the only non-mineral, but minuscule, export. About half its population lives below the poverty line relying on subsistence farming (Statistics Timor-Leste, 2017; Trading Economics, 2017). The major employers are the government, State enterprises and small single employee non-farming businesses (Statistics Timor-Leste, 2017). Nobel Peace Prize Laureate and former President, Jose Ramos-Horta, together with Andrew Mahar have noted this critical context dramatically in an article for a series on the UN's 22nd Conference of the Parties (COP22) in Morocco, 7-18 November 2016. They argued in respect to the climate change agreement signed in Paris the previous year, that despite Timor-Leste being one of the most oil and gas dependent economies in the world, what is needed are: "...alternative economic models, vital to the growing global push towards renewable energy, fossil fuel divestment and urgent action on climate change." (Ramos-Horta and Mahar, 2016)

To appreciate how the SDGs drive the need for alternative economic models of development, the meaning of "sustainable development" needs to be clearly defined. It is this definition that underpins the SDGs. As Kemp and Martens (2007, p. 5) note:

The essence of sustainable development is to provide for the fundamental needs of humankind in an equitable way without doing violence to the natural systems of life on earth.

This means highlighting the three-fold aspects of SDGs as proclaimed by the UN Resolution, that being economic growth, social inclusion, and ecological protection. The dilemma for economic development is to achieve the "fundamental needs of humankind" for food, shelter,

health and education with both economic growth (and its attendant inequalities) and environmental protection (and its attendant limits to growth).

From a developing country outlook, Allen et al. (1995) see “sustainable” as an ongoing process, not a static unattainable stage of perfect equity. Mainstream economic development models propel policy measures that aim to maximise economic growth through the purely quantity measurement of Gross Domestic Product (GDP). Such policies, once implemented, come up against the predicament of social inequality as greater economic benefit accrues to the rich, leaving the poor behind. Thus, development must also focus on policies that are socially “equitable”. Even further, the “violence” that humans have committed to “the natural systems of life on earth” through maximising economic growth in the name of development has brought about an ecological development perspective. Thus, the term “sustainable development” advocates policies (by governments) and practices (by enterprises) that link three interrelated aspects of development – economic (profit or surplus), social (people) and ecological (planet) – into one integrated, indivisible and coherent system. The three development aspects are what lies behind the SDGs identified in UN Resolution A/RES/70/1.

Two days before the UN SDGs Resolution was adopted, the TL Government on the 23 September 2015 adopted its own Government Resolution N°34/2015 which agreed to support the UN Resolution and to form a working group on implementing the SDGs, to be chaired by the Prime Minister’s Office. Then on the 18 November 2015, the Parliament of Timor-Leste passed Resolution PN N° 19/2015 which recommended that the Timor-Leste Government align its planning and budget systems with the SDGs. Consequently, the Government decreed that budget and planning needs to be consistent with the SDGs when operating the existing 2011-2030 Strategic Development Plan (SDP). “The Strategic Development Plan provides a framework for identifying and assessing priorities and a guide to implementing recommended strategies and actions.” (RDTL, 2011, p. 10) For this Government, the SDP sets the agenda for building human and social capital with infrastructure and institutional arrangements to produce inclusive economic development. The challenge coming out of the two SDGs resolutions, as the Prime Minister, His Excellency Dr. Rui Maria de Araújo (PM) remarked in a speech on 10 August 2016, was for the Timor-Leste Government to “...take the SDP as the basis to come up with a roadmap to prioritize the SDGs.” (de Araújo, 2016)

The PM in the same speech, set out the roadmap for how the Government is prioritising the SDGs in the context of the existing SDP. Appendix B sets out the PM’s eight point roadmap. A roadmap enables the direction of strategies to be specified when charting a course of action. In this case, it is a roadmap that attempts to harmonise the 2015 SDGs Resolution with the 2011 SDP that has been already strongly established as the planning guidelines for the Government and its public administration.

This report reviews the Government roadmap that is attempting to harmonise the SDGs with the SDP. Three questions are addressed in this review:

1. How has the Timor-Leste Government been able to harmonise the United Nation’s Sustainable Development Goals with the existing 2011-2030 Strategic Development Plan that guides policy in the economy?
2. Has the harmonising process been able to specify a new transformative and innovative sustainable development path for the economy, or has the development path as set out in the 2011-2030 Strategic Development Plan remain unaltered?
3. What are the achievements and limitations of the SDG roadmap, and how does this identify the challenges, opportunities and options to be negotiated in progressing towards a transformative and innovative sustainable development path as specified by the Sustainable Development Goals?

The first question aims to review how the process of harmonisation has progressed 15 months since its inception. The second question addresses the issue of whether the endorsement of the SDGs has been able to modify or transform the development path set by the 2011 SDP towards an alternative economic path that is more diversified and less dependent on fossil fuel energy. The third question examines past progress in sustainable development since the September 2015 resolution, and future opportunities for genuine sustainable development in the form described as the “essence” by the Kemp and Martens quotation.

Method

The report is based on data primarily obtained by the two academic authors over a period from 25 July to 31 November 2016, while the first author was on sabbatical leave at Universidade Nacional Timor Lorosa'e (UNTL) and a two week trip in June-July 2017 during presentation of this report results in two conferences. The second author is a local East Timorese academic who provided crucial access to data, translated from Tetum and Portuguese into English and drove through all sorts of roads in the country. The data collected and analysed for this review was wide-ranging, but heavily dependent on access to such sources. The sources consisted of (i) documents (e.g. official Government sources, press releases, material from Non-Government Organisations [NGOs] and Civil Society Organisations [CSOs], newspapers, journals, academic papers); (ii) website information (e.g. La'o Hamutuk, Social and Solidarity Economics sources, Sustainable Development Goals in Timor-Leste Facebook page, Monash in Timor blogspot, NGO sites); (iii) informal discussions (listed alphabetically: academics, activists, government advisers, representatives of multilateral institutions, entrepreneurs, embassy personnel, farmers, ministers, public servants, taxi drivers); (iv) participant observation by authors at formal ceremonies, special events, workshops, conferences, seminars, and ‘in the streets’; (v) visits to municipalities outside Dili to assess type of development (large public investment, major private investment, retail activity, local community investment, education, NGO capacity building).

Data was collected from the perspective of examining the role of sustainable development in the prevailing economic growth path. The data was then analysed in order to appreciate the capacity of (i) government policies, (ii) donor-based activities, (iii) social (cooperative) organisations, and (iv) private firms and individuals to develop along a sustainable development path, guided by the SDGs. This review is *not* a tick-box checklist of what has been achieved in each of the 17 SDGs, but a review of the *process* called the “roadmap” by the TL Government. See Appendix E for all primary data collection sources.

The method of data collection was not exhaustive, as the data is never ending. However, enough data was analysed to identify a set of patterns emerging that enable key answers to be provided. Limitations of time (for both discussants and authors), accessibility (of data, both in written and oral), and quality (of data, in that information is difficult to judge due to particular biases exhibited) are recognised. However, the wide-ranging data collection process conducted across geographical, political and social boundaries aimed to mitigate these limitations, such that robust patterns across wide cross-sections of the East Timorese community emerged. Further, feedback was provided prior to this final report through a December 2016 preliminary report and authors’ presentation of the results in five TL forums.

Background

The State of the TL economy needs to be briefly set out in order to highlight aspects of the economy that is relevant to the assessment of the country’s sustainable development. There are many comprehensive studies of the TL economy that can be accessed for more details on aspects mentioned in this background (some are cited in this section). The focus of this

background are the three interrelated aspects of development; economic, social and ecological.

TL emerged on 20 May 2002 as an economically independent country on the sustenance of oil and its accompanying liquid natural gas (LNG) existing under the Timor Sea. This petroleum economic base aims to secure the future of this country via the Petroleum Fund. This seemed to be the case with a surge in oil prices and revenue in 2005-2007, but with the depletion of existing reserves and falling oil prices, the revenue gained has been declining ever since 2012. For the period 2006-2012 petroleum accounted for 80% of GDP, but in 2014 it accounted for 64%, and only 48% in 2015. Further reduction to very low oil prices through 2015 and 2016 (until a recent rise in October 2016 due to a temporary cartel arrangement to reduce oil supply) reinforces the often described situation of lack of diversity in the TL economy. In the 2017 budget oil/LNG revenue accounts for 81% of total government revenue (RDTL, 2016b). Non-oil GDP increased only marginally in absolute terms, from \$1,313m. in 2013 to \$1,400m. in 2014, but recording a 10% increase in non-oil GDP because overall GDP declined by -27.8% over this two year period. Coffee makes up 95% of non-oil goods exports at \$16m. in 2015. The vast majority of the agricultural sector is subsistence-based for domestic consumption and has remained the same size since independence. As a result, non-oil GDP dollar value has been about the same for the period 2012 to 2014, and the agriculture sector's contribution on a per capita basis has remained stagnant at just below \$200m. since 2003. The above data was extracted the National Accounts published in 2016 (RDTL, 2016a) and there is no more recent data available.

Lonely Planet describes TL physical environment: "From its ruggedly beautiful landscapes to its centuries-old traditions, Timor-Leste offers one of the world's last great off-the-beaten-track adventures." (Marx, 2016) This comment is an appreciation of the country's clean pristine physical environment with no chemical or pesticides in agriculture, limited manufacturing, and a natural landscape; reflecting the view of Ramos-Horta and Mahar (2016): "We Timorese are the lowest carbon polluters per capita in the world". In relative terms, TL produces a minuscule share of the world's CO₂ (carbon) emissions; however there is a concern when the trend shows rising CO₂ emissions from 161.3 kilotons (kt) in 2003 to 293.4 kt in 2012. Two old technology power plants with all imported diesel fuel, coming on line at Hera and Betano (La'o Hamutuk, 2011), resulted in a very sharp rise one year later to 440 kt (2013) – which is the latest available World Bank data (factfish, 2017). This ignores that carbon is released into the atmosphere from extracting and using the oil and gas that TL exports. Also, the production, processing, storage, transmission, and distribution of natural gas results in a significant amount of methane being lost into the atmosphere (U.S. Environmental Protection Authority, 2017), and that methane is 28 times as damaging to the atmosphere as CO₂ (Myhre and Shindell, 2013). Thus, from a natural organic state, TL has the basis for a strong ecologically sustainable system from which to build development that supports strongly a "green planet", but with serious fossil fuel energy-based polluting issues.

From the social development perspective, the evidence is mixed. As a society, TL has strong robust political engagement with a civil society that is free to reflect its own criticisms of government and business culture. This became especially noticeable at the Association of Southeast Asian Nations (ASEAN) Peoples' Forum held in Dili in August 2016 in which the CSOs from the ASEAN countries recognised in TL social/political encounters completely missing in their own countries (APF, 2016). La'o Hamutuk is a strong voice of critical analysis on public policy and private activity that is easily accessible from their website, and other voices are emerging out of the NGO and CSO communities on various issues like the Timor Gap Treaty negotiations, but much of the mass media still reflects the Indonesian model of news that merely affirms the views and actions of the power elite. Also to be

acknowledged is the clear and strong exposition of survival, resilience and resistance of the East Timorese to foreign invasion and occupation (CAVR, 2013). This has resulted in “strong social capital” (Noronha, 2015, p. 232) with deep local culture and strong memory built on a harsh past. What has emerged is a solid self-efficacy, autonomy and endurance by the people of TL against imposing adverse forces. This has manifested in their desire and commitment to cooperation, education and health, as well as a friendly outlook to *malae* who recognise and support these East Timorese values (Kihara-Hunt, 2016). In response to this history, the Centro Nacional Chega! (Centro Chega!) has been formed as an ecologically and socially innovative enterprise for post-conflict good practice in learning, which aims to contribute to the nation’s development and implementation of the SDGs.

On the other side of the ledger, there is a stark and significant social under-development in the country. Despite a reduction in overall poverty based on the national poverty line from 50.4% in 2007 to 41.8% in 2014, rural poverty incidence in 2014 was 47.1% with agriculture being the main livelihood activity for 71% of its population (World Bank, 2016a). Agriculture is characterised by mostly subsistence farming, low productivity and difficulties for accessing markets and information due to poor infrastructure (Andersen et al., 2013). This leads to widespread rural seasonal food insecurity and malnutrition with pervasive child and maternal micronutrient deficiencies (RDTL, 2014; MoH, 2014). While in one unique urban capital city of Dili, the situation is one in which higher education degrees are attracting the large post-independence baby boom young people from the poor rural areas, but finding an uncompetitive high cost structure (Kingsbury, 2009, p. 88). This provides a challenge for the annual 21,000 of 15 year olds (first year of working age) given that there was only an employment increase between 2014 and 2015 of 800 (Statistics Timor-Leste, 2015) .

With the background of the three critical aspects of sustainable development in TL established above, a framework for sustainable development is now presented which has been applied to other developing countries that aspire to sustainable development (Ben Slimane et al., 2016). This framework is independent of the TL Government’s SDP and aims to guide the research findings when reviewing the state of the roadmap to achieve the SDGs.

Sustainable Development Policy Framework

Neoclassical mainstream economics (often called ‘neoliberal’) identifies economic development in the form of maximum economic growth through the quantity of GDP. This drives the neoliberal paradigm with only peripheral recognition of inclusive social or ecological development (Courvisanos, 2005). The problem with measuring development by the amount of growth in GDP is that such policies focus on strategies that can induce economic activity relatively quickly (e.g. public infrastructure, tax reductions, subsidies for business, incentives for innovation) and which have gains that are appropriated already by the educated and financially better off. This skews the gains from economic activity towards the top of the income share profile of a country. As a recent International Monetary Fund (IMF) note identified:

...we find an inverse relationship between the income share accruing to the rich (top 20 percent) and economic growth. If the income share of the top 20 percent increases by 1 percentage point, GDP growth is actually 0.08 percentage point *lower* in the following five years, suggesting that the benefits do not trickle down. Instead, a similar increase in the income share of the bottom 20 percent (the poor) is associated with 0.38 percentage point *higher* growth. (Dabla-Norris et al., 2015, p. 7, emphasis in original)

Thus, maximising short-term growth distorts social development through increased inequality.

The TL Government's strong and vocal commitment to the SDP reflects a "predominantly top-down, neoliberal paradigm" (Cryan, 2015, p. 141) which Scheiner (2015, p. 86) describes as an "...enticing, impossible dream" because as the SDP is "[i]n search of showy, quick solutions, planning neglects the unglamorous but essential tasks of alleviating poverty, replacing imports, and working toward food sovereignty." The inequality relationship identified by the IMF research and its applicability to TL with its growth-intensive SDP thus makes it inappropriate to use the SDP framework to review the SDG roadmap. An independent sustainable development policy framework is required.

When it comes to ecological development, the standard maximising GDP economic policy approach concentrates on a failed "trickle down" effect, while only able to manage a "weak" form of ecological sustainability. This is where the monetary valuation of the environment is only calculated (e.g. what is the price of a 500 year old tree?). Such a calculation enables all production factors, including natural resources, to be substitutable at high enough prices when they inevitably become scarce. This allows for substitution of scarce environmental goods of nature with physical capital embodied with new technology to substitute for any loss of natural resources because in these economic models all resources are perfectly substitutable (Pearce and Atkinson, 1993). This policy approach ignores the interconnected nature of the ecosystem which makes it impossible for most natural resources to be totally replaced by man-made ones without undermining the ecosystem's viability (Costanza and Daly, 1992). In TL, the SDP needs to be critically examined in the context of ecological sustainability and not be seen as a framework that can be automatically aligned to the SDGs.

Sustainable development, in its strong form, needs to embrace a bottom-up policy approach that allows both social equity and ecological viability to operate. Governments can set a SDGs policy agenda by charting the course towards goals and targets, but captain ('top') and crew ('bottom') need together to design, implement, monitor, and evaluate how such a policy reaches these goals. For the 'crew' to come 'on board', the roadmap to achieving the SDGs needs a policy approach from government that encourages and supports transformative innovation in critical sectors of the economy with strong cluster (or linked) activity around finance, universities, associations, networks, media, and regulatory bodies (Hamdouch, 2010). Such innovation requires the 'crew' of entrepreneurs and their employees to enter the economy in various sectors and introduce new products and processes that alter significantly away from the purely quantitative maximising GDP development path. The new transformative innovations need to take up regional and sectoral opportunities that address local constraints. Such a sustainable development approach requires appropriate public and private investment strategies that would create a paradigm shift towards sustainable development. Standard (maximising GDP) economic development models are unable to overcome the various lock-in mechanisms that dictate the paths of innovation which contributes to the existing set of social and ecological crises (Courvisanos, 2012). It is impossible to achieve the required paradigm shift to sustainable development in innovation under conditions that have created the prevailing "lock-ins" (Kemp et al., 1998), or what Barker (1993) calls "paradigm effects".

An alternative policy framework for sustainable development is essential to guide this paradigm shift. The framework presented in this section is a broad national-based innovation and investment planning guideline policy framework for sustainable development (or simply 'eco-sustainable framework', from the Greek word 'economia' – to manage the household holistically, i.e. sustainably) that can be applied to any economy that aspires to have an efficient operating market-based system, as TL hopes to foster. In this framework, viable innovation is known as "eco-innovation". Such a framework allows investigation of investment strategies for aspects of a paradigm shift to new modes of coordination and

cooperation between actors with the ultimate aim of building a set of political economy policies to develop new sectors and build strong regions related to sustainable development. This policy framework of analysis enables the review of economic policies of an economy in the context of sustainable development. Courvisanos (2012) calls this the “eco-sustainable framework” and is illustrated in Figure 1

Three criteria sets up this eco-sustainable framework, as detailed in Courvisanos (2005):

- (i) social and ecological sustainability rules (or conventions) with specific sustainable development targets, e.g. percentage of population above poverty line, proportion of total energy production as renewable power,
- (ii) perspective planning that is readjusted as the development process moves through time with clearer perspective and less uncertainty, and
- (iii) cumulative effective demand built on creating stronger market demand through transition from niche markets to critical mass (both import-substitution and export).

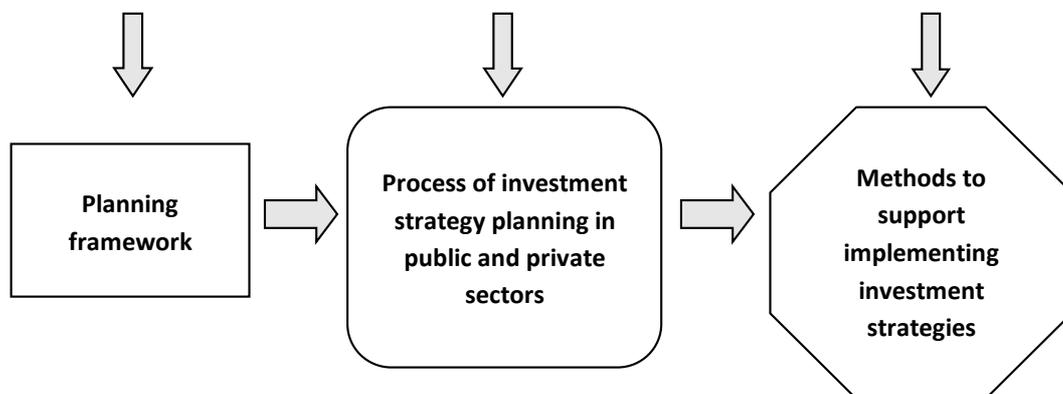
What is required to implement this framework is a broad-based strategy for public, private and civil society (non-profit) organisations and institutions to move towards one “integrated, indivisible and coherent” system with economic viability, social inclusion, and ecological protection. Then, if successful at the nascent level, cumulative causation with much less crises-prone economic activity can lead the country to enhanced economic, social and ecological outcomes over time.

The eco-sustainable framework provides a comprehensive “instrumental planning” approach on how to invest precious limited fossil fuel-based revenue and economic activity, through public and private funds, into the economy of TL in order to achieve the SDGs as agreed to in the UN Resolution A/RES/70/1. Only a few Western European countries, notably The Netherlands and Denmark, have been prepared to go down this path of an “instrumental planning” process (Lowe, 1976) with public programmes such as national strategic environment plan, short-term targets and target groups, private sector cooperation, voluntary conformity of NGOs and CSOs, and citizens’ group input. Such a plan needs to be backed by the threat of regulation and withdrawal of support policies like subsidies when cooperation and conformity are not forthcoming (see Wallace 1995, 43-61). From the experience of these European plans, what is crucially missing is the ability to promote innovation through entrepreneurship. This is where investment planning in concert with a co-evolutionary strategy between public, private and social (non-profit) sectors can provide the necessary link to new sustainable goals. A co-evolution requires a strong link between the economic, social and political systems as they evolve in the planning with private practice and public policy together.

Figure 1 is based on the original eco-sustainable framework in Courvisanos (2005) and subsequently applied in Courvisanos (2009a; 2009b; 2012) and Ben Slimane et al. (2016). Figure 1 sets out the eco-sustainable framework that aims to deliver such instrumental plans with the operational aspects in the grid (on the top), and the investment planning process in the flowchart (below). The left column has the three pillars (or elements) of the eco-sustainable planning framework, followed by application of these pillars to government (public) policy. The centre column sets out the criteria for sustainable development required in both public and private sector investment planning within the specific country’s institutional and cultural domains. The right column shows specific implementation strategies for innovation that support the investment plan. See Appendix C for detailed specification of the eco-sustainable framework and its application to Timor-Leste.

Figure 1: The Eco-sustainable Framework

Eco-sustainable Framework	Investment planning criteria	Supporting implementation strategies
Social and ecological sustainability rules	<ul style="list-style-type: none"> Fairness across urban/rural divide Sustainable long-term carrying capacity Resource-saving new capital stock 	Develop with the community appropriate and agreed sustainability rules, targets and indicators (SDGs)
Perspective planning	<ul style="list-style-type: none"> Iterative flexible <i>ex-ante</i> planning Bottom-up learning, designing, monitoring and evaluating 	Establish, monitor, evaluate and adapt social and environmental policies for SDGs
Cumulative effective demand	<ul style="list-style-type: none"> Strong niche market base Involve community in future viable consumption patterns Gain experience from current eco-sustainable innovation-based users 	Develop and manage public network systems for private and social venture adoption. Finance availability and user feedback in concert with SDGs
Application to Public Policy		
<ul style="list-style-type: none"> Public policy and whole-of-government aligned to SDGs People's participation via communication and support for SDGs 	<ul style="list-style-type: none"> Expanding digital technologies (especially rural coverage) Education and training (especially rural literacy) that supports sustainability 	<ul style="list-style-type: none"> Appropriate Information Technology tools aligned to urban/rural user-capabilities Financial incentives and clear regulations that support sustainability rules



Application of public policy to a specific country (in this review it is TL) is set out in the fourth separate row below the three elements. This row shows what governments need to do at the broad public policy domain in terms of the three elements for the above sustainable development mechanisms to be successful. In the case of TL, the first box on the left identifies the need for overall public policy (e.g. SDP) and whole-of-government (i.e. all ministries) to align to the agreed SDGs. Also, there is need for people's participation in the SDGs (Noronha, 2015) which starts with effective public communication from the government and seeking support through advertising and public education campaigns to encourage whole-of-country to align with the SDGs. Then, with public participation and consultation to further develop the SDGs in terms of specific targets and indicators. As Noronha (2015, p. 4) it "...is imperative for Timor-Leste's sustainable development" to have "...[a] process engaging people's participation and active consultation in developing a plan, and having a plan, which truly represents the collective aspiration of the East Timorese people." In the second box, there are two critical areas of public investment that underpin all investment strategies. They are a reliable and expanded digital technologies (especially rural internet coverage), and education and training (especially rural literacy) that induces sustainability. Finally in the third box, there is a need for appropriate Information Technology (IT) tools that are aligned to urban/rural user-capabilities (noting that rural and urban users have different IT needs), as well as financial incentives and clear simple regulations that support the SDG sustainability rules.

The bottom section of Figure 1 is a flowchart that indicates how one column should interact with the next in the planning process. The flowchart is a practical procedure for a coherent planning process with a cohesive framework for investment that allows specific strategies to induce sustainable transformative innovation, and forms the basic structure for Table 1 analysis.

Findings

The structure of Table 1 is based on the three instruments in the bottom flowchart of Figure 1, shown as three columns. Each column in Table 1 records the instruments, followed by their limitations as detected in the data. The first column identifies the planning instruments and sustainable development targets/goals adopted in TL. The second column classifies the various investment strategies adopted that aim to achieve the targets/goals in the first column. The third column lists any supporting strategies, both in the form of soft (human) or hard (physical) investment, that aim to encourage and support the implementation of the second column strategies.

The cumulative result of a successful investment process from left to right in the Figure 1 flowchart would mark out the realisation of sustainable (i.e. economic viability, social inclusion, and ecological protection) development for the nation of TL. This would be discernible by the creative and innovative new pathways, and away from the highly fossil fuel-dependent economic development path that TL has currently adopted. To appreciate whether TL is in fact on this pathway to sustainable development, this section presents the findings from the data organised across the three columns.

Planning framework

From the first column, there is no doubt that the SDP dominates the whole planning framework of the country with its aim "...to transition Timor-Leste from a low income to upper middle income country, with a healthy, well educated and safe population by 2030." (RDTL, 2011, p. 9) This is an exceptionally challenging and imprudently overreaching aim, given the poor status of the country. The overreach is evident when it is recognised that the 2015 Gross National Income (GNI) of the country was US\$2,290 per capita, 42% lower than

2011 when the SDP was approved, and noting that to be an “upper middle income country”, then the GNI per capita as at 2015 needed to be above US\$4,036.

To gain a sense of how the SDP aims to achieve this challenging aim, the SDP specifies that the country needs:

...to develop core infrastructure, human resources and the strength of our society, and to encourage the growth of private sector jobs in strategic industry sectors – a broad based agriculture sector, a thriving tourism industry and downstream industries in the oil and gas sector. (RDTL, 2011, p. 10)

Thus, the SDP recognises the need to diversify the economy away from merely being an upstream oil/gas commodity producer that is beholden to the vagaries of oil prices under the supply control of the Organization of the Petroleum Exporting Countries (OPEC) cartel and the uncontrolled development of shale oil and gas fracking. Further on a practical basis, the existing oil/gas fields are rapidly depleting with no clear pathway to overcoming the legal barriers to bringing on-stream the Greater Sunrise greenfield site. Finally from a principle perspective, oil/gas is a non-renewable resource with its extraction quintessentially opposite to sustainability. A concerted effort needs to be made in TL to rapidly diversify away from global oil/gas demand in order to contribute significantly to the elimination of global carbon emissions.

From a sustainable development perspective, the SDP strongly endorses the seminal Brundtland Report called *On Our Common Future* (WCED, 1987). The SDP specifies 32 specific sustainable development targets (see Appendix D). From this perspective, the task of harmonising the 2015 SDGs Resolution with the SDP appears viable and plausible. To make this work, there is the passionate affirmation of the SDGs Resolution by the PM in many speeches, meetings and government decision-making forums; together with a dedicated small SDG Working Group within the PM’s Office, who are tasked with the harmonisation process. Together, the two plans indicate a strong instrumental planning framework that is consistent with the theoretical work by Lowe (1976), with strong support through the PM and his office. However, the research has identified a set of limitations that make the operation of the planning framework along sustainable development instrumental lines a significant challenge. Essentially, the challenge is to be able to instil the SDGs within the established and vigorously defended aspects of the SDP that drive towards maximum economic growth with eco-sustainable issues to be handled subsequently in the wake of optimistically expected ‘big’ growth outcomes and a culture of indifference to significant social and economic crises.

Column 1 in Table 1 identifies six limitations to the TL instrumental planning framework that undermine the process of embedding the SDGs into the prior-established planning framework. All six relate to the issue of driving the idea (or notion) of sustainable development deep into the various TL communities, from basic subsistence farming to urbane returned East Timorese diaspora, so that sustainable cities and communities (SDG #11) is realised.

Limitation # 1 – Limited detailed planning

Overall the SDP is strong on short-term, medium-term and long-term targets, strategies, and actions, of which the 32 identified sustainable development targets are part of that plan. Grünig and Kühn (2011) specify a well-established practical process for implementing a plan using eight steps, however, the SDP (or in follow-up documents) lacks any such clear planning procedure. Thus, of the 32 targets in Appendix D, only in a few cases are specific dates and target numbers named.

Table 1: Timor-Leste Planning and Investment for Sustainable Development

Planning framework	Investment strategy planning	Support implementing investment strategies
<ul style="list-style-type: none"> • SDP (2011-2030) <ul style="list-style-type: none"> ✓ 32 targets identified as sustainable development (see Appendix D) • SDGs (2015-2030) <ul style="list-style-type: none"> ✓ 17 goals in a three phase roadmap (see Appendix B) ✓ Strong Prime Minister (PM) affirmation of SDGs ✓ Dedicated SDG Working Group team members within PM department <p>Limitations</p> <ul style="list-style-type: none"> • Limited detailed planning • Lack of formal and social learning in ‘human resources’ to build absorptive capacity • No perspective planning with iterative flexible adjustment mechanism • Formal planning procedure short-term based and fragmented • Linear roadmap without integration • SDGs not established in the communities: <ul style="list-style-type: none"> ✓ no link to subsistence culture ✓ capitalist sector lacks social/ecology view ✓ no cumulative effective demand for SDGs 	<ul style="list-style-type: none"> • Public spending led major projects: <ul style="list-style-type: none"> ✓ ZEESM TL ✓ Tasi Mane ✓ Dili airport ✓ Tibar port ✓ Road construction ✓ Electrification of the nation • Petroleum Fund (PF) with ESI formula • Foreign investment in municipal development (ADM) • Established legal framework for environmental impact regulations on investments • Agricultural sector investment from effective NGOs <p>Limitations</p> <ul style="list-style-type: none"> • Large infrastructure projects boost import dependency • Minimal private sector entrepreneurship • PF withdrawals exceeding ESI formula up to 300%, considered of “long-term interest” • Difficult to attract FDI in major public sector investment projects • No prudent plan for repayment of funds from international lenders • Lack of economic linkages from public sector driven “Social Market Economy” • No renewable energy investment strategy in order to phase out fossil fuels • Lack of certainty in access to land for investment • Severe underfunding in education investment 	<ul style="list-style-type: none"> • International donor-based capacity building, esp. in health and education • Ardent cooperative movement (credit unions and agriculture) • Small enterprise support by donors: Casa Vida, MDF • Veteran payments, often used for construction • Decentralised programmes: <ul style="list-style-type: none"> ✓ PNDS/CDD ✓ PDIM roll out ✓ Australia friendship groups • Fiscal reform programmes: <ul style="list-style-type: none"> ✓ VAT introduction ✓ TDA reforms <p>Limitations</p> <ul style="list-style-type: none"> • Donor disbursements steady, but decline in budget support from 80% (2002) to 10% (2016) • Cooperatives based within large subsistence economy • Small enterprises lack critical mass and essential economic focus • Finance sector very limited and risk-averse • Large leakage of economic and social value to Indonesia • Decentralisation process delayed and restricted • Fiscal reform programmes regressive & admin costly

Key

SDP: Timor-Leste approved Strategic Development Plan 2011-2030

SDGs: United Nations sponsored 17 targeted Sustainable Development Goals 2015-2030

ESI: Projection of maximum amount of money to be withdrawn from Petroleum Fund (PF) each year for the indefinite future. ESI calculated by adding total value PF and petroleum reserves still in the ground (only approved development) and estimated interest earned.

MDF: Market Development Facility funded by Australian Government (Casa Vida similarly funded by Portuguese Government)

PNDS: National Programme for *Suku* Development

CDD: Community driven development principles

PDIM: Integrated Municipal Development Planning

VAT: Value Added Tax

TDA: Tax and Duties Act – reform of all existing taxes and duties in operation

Further the limited nature overall of the planning in the SDP is exhibited by the lack of costings, cost/benefit/risk analyses, and implementation timetables. Also, there is no specifying of appropriate competitive advantage, potential markets, or returns on investment. This applies as well to the 32 identified sustainable development targets in the SDP, which then leads to a lack of credible policy action, nor comprehension as to how critical are these targets in the planning processes for all ministries.

Limitation # 2 – Lack of formal and social learning for absorptive capacity

There is limited effectiveness in the formal education system with many primary school graduates lacking basic reading, writing and arithmetic skills, as well as critical thinking and analysis. Taylor-Leech (2013, p. 114) notes that in language policy “...the most persistent challenges to universal primary education in Timor-Leste are low achievement and high dropout, particularly in the later primary grades.” This is because “...educational language policy has lacked a comprehensive, long-term, evidence-based programme to promote bilingualism and biliteracy in the co-official languages.” (Taylor-Leech, 2013, p. 119)

Outside an expensive formal education system, there is social learning, which is the informal education for the general public. Social learning is the process of gaining understanding by ‘human resources’ in a specified domain (or *people* as individuals in organisations and communities within a specified region or nation) through collaborations, interactions and relationships. This builds decision-making capabilities. In the context of this report, the process is based on a ‘bottom-up’ decentralised development of customs and norms to build understanding in people towards the deeper meaning of sustainable development. In this way, “[s]ocial learning is an iterative and ongoing process that comprises several loops and enhances the flexibility of the socio-ecological system and its ability to respond to change.” (Pahl-Wostl and Hare, 2004, p. 195) Social learning allows the eco-sustainable framework to be implemented because it “...is not a search for the optimal solution to one problem but an ongoing learning and negotiation process where a high priority is given to questions of communication, perspective sharing and development of adaptive group strategies for problem solving” (Pahl-Wostl and Hare, 2004, pp. 193-4). Such understanding for sustainable development, for example responsible consumption (SDG #12) would require appreciation of ‘recycling’ and ‘reducing’ when considering buying. There is strong potential for this approach to consumption because the East Timorese community by working together collaboratively have been able, out of necessity, to show great aptitude and skill in operating the third of the “Rs” in responsible consumption, which is ‘reuse’ of much of what they have by fixing it up and adapting by the use of spare parts (e.g. motor vehicles and electronic equipment).

Through both foundational formal education and bottom-up social learning, TL can build the capacity to absorb knowledge and use it with imagination. This ‘absorptive capacity’ is all about beyond formal education, in which existing skills, education, capability, experience and incentives are harnessed for development. For this to occur it requires strong interactions between actors (communities, firms, educational institutions, and government agencies) and the institutions influencing these interactions. The more effective is both types of learning, the more creative and innovative are the actors which then spread understanding and knowledge in order to be able to absorb the capacity for sustainable development; for example, building responsible consumption in communities through recycling products, cleaning beaches, and limiting waste, while reinforcing the already recognised TL value of reusing existing products. Well-conducted learnings enable spreading within the country an ability to effectively be able to absorb new ideas, novel approaches and unique technologies, both from indigenous locals and foreigners.

Both limitations #1 and #2 above are evident in TL because of the weak bottom-up approach to planning. The SDP is driven strongly from the political centre, and the SDGs by following a “harmonising” process inevitably slot into the top-down approach to planning. Many examples abound in the failure of planning from the bottom, notably the continual delays in decentralisation of governance due to reluctance by the centre to give up any power and the cost of building effective decentralised institutions. Thus, very limited roles present themselves for building absorptive capacity at the level of municipalities and sub-municipalities. The excellent democratic support for the *suku* elections in October 2016 shows that the populace values the right to vote. It is only by trying, failing and then succeeding that political learning occurs and governance can then improve. Waiting for formal capacity building from the top is very slow and elitist in deciding when capacity has been created, delaying the process even further, and removing governance from the people that this governance should represent and be answerable to. Lack of decentralisation (with public power and governance residing at the centre) is a limitation in itself when it comes to supporting the implementation of the SDGs, as set out in the third column of Table 1.

Limitation # 3 – No perspective planning

As crises proliferate in terms of economic, social and ecological settings, the world has become highly uncertain (Courvisanos, 2012). This requires iterative planning that can flexibly adjust the plan dimensions and specific targets as progress (or lack of progress) makes the development path more evident (Kalecki, 1992). Appendix C provides greater theoretical detail under “Element #2”. The SDP was developed in the period 2009-2011 when the global (Brent) oil spot price tripled. This short-term pattern induced oil price expectations in the SDP that prices will remain high. This generated the major downstream Tasi Mane investment project. However, as Baumeister and Kilian (2016, p. 141) warn, planning decisions based on such price expectations can be very tricky; indeed they state “...that the oil price expectations measure required for understanding economic decisions need not be the most accurate measure in a statistical sense”. Even more uncertain is the oil and gas supply available for TL to sell and the consequent revenue stream. The Kitan field has shut-down and the Bayu-Undan field is projected by the 2017 budget to virtually end in 2019. Also, there is no certainty of access to secure legal reserves and any such access will not come on-stream by 2019. Despite these uncertainties, the Tasi Mane project is still being touted as the driver of economic development, even with significant slow-downs in its spending. Evans (2016) argues robustly that it is a dream “doomed to fail” and Scambary (2015) recognises this project as a rational search for a “white elephant” given the public policy lock-in to the accepted maximising growth model. This “blind logic” needs to be set against the clear need for fossil fuel energy divestment worldwide as noted by Ramos-Horta and Mahar (2016). The 2015 SDGs Resolution provides the perfect opportunity to build an adjustment mechanism into the SDP, so as to address the growing uncertainties and also introduce stronger renewable energy planning into the SDP. This would be a better approach than merely “harmonising” to the SDP.

Limitation # 4 – Short-term planning and fragmentation

An alternative to flexible adjustment when facing uncertainty in a planning context is to have a short-term formal planning procedure. In this approach, the plan itself is not adjusted, but the year-on-year government decisions made in the State budget needs to reflect short-term political realities, five-year electoral cycles, and compromises that impact on the ability to provide a coherent planning structure. However, such short-term government budget decisions then become influenced by a large number of stakeholders in the economic development of TL, not all necessarily imbued with the public good. These stakeholders are made up of a large number of diverse NGOs, CSOs, agricultural cooperatives, credit unions,

higher education institutions (all private except for UNTL), public institutions and authorities, international globalisation-based agencies, and a few large powerful foreign investors. Each stakeholder has its own mission and agenda for being in TL, all motivated by a volatile mixture of aid, activism and profit-making (Wigglesworth, 2016). Such vast agendas, linked to the short-term political agenda of the incumbent ruling government, leads to fragmented policy decision-making that can result in a budget that simultaneously invests in large fossil fuel and mass-tourism developments, while also propagating the integration of the SDGs (RDTL, 2016b). Duffield (2012) observes this process when there are many aid organisations involved and calls it “institutional fragmentation”.

Limitation # 5 – Linear roadmap with no integration

The linear nature of the roadmap is evident in its specification as set out in Appendix B, but with no targets identified from the 169 available. Further, as part of the g7+ group of fragile states, 20 indicators across 13 SDGs have been identified to be monitored. However, this excludes the four ecologically-based SDGs which are considered “not as urgent as the others at the current time” (g7+, 2017, p.3). The assumption underlying this linearity is that what are identified as the human development SDGs are critically important in the short-term and need to be addressed first, while the economic SDGs can follow. Finally, once the economy has reached a certain level of development, this provides the opportunity for the ecological SDGs to be tackled. This exposition of the SDGs harks back to early development models in which after successfully stopping immediate hardships in the community, then economic growth becomes necessary to attain with an unsustainable market-driven intensity (Kinrade, 1995). Only after economic growth has been achieved through SDG #8, and the population develop an educated awareness of environmental problems that the environmental SDGs are then tackled. The limitation of this approach is that human ecosystems are integrated and complex, such that the physical environment is central to human development (e.g. clean water) and economic growth can undermine both the environment and the quality of the human development SDGs. For example, chasing economic growth prior to addressing the environment can cause major water contamination problems with serious quality of life implications, thus human development through SDG #6 on clean water deteriorates because it has not been addressed. Courvisanos (2012, p. 120) shows that innovation by a transition path towards sustainable development is a complex interaction of all three aspects of development via collaborations, networks and clusters across the public-private-social sector space. This leads to the necessity to approach SDGs as a complex adaptive system that leads to resilience and away from chaos (e.g. an NGO cleans the water in one place, but water overall becomes even more ‘dirty’ as growth is maximised). A resilience approach to policy making allows for the SDGs to be tackled in an integrated manner (Sotarauta and Srinivas, 2006).

Limitation # 6 – SDGs not established in the communities

Formulation of the SDGs and setting out the roadmap does not seem to have been understood or appreciated in the wider diverse TL communities. When these communities in a nation recognise the need to adopt sustainable practices, then there will be discernible improvements to their living, then cumulative effective demand will build a momentum for sustainable development. Geels (2005) notes the need for cumulative growth in effective demand (beginning with niche markets) allows strong potential for demand expansion to emerge. There are three aspects to this lack of grass roots support for the SDGs:

1. The large subsistence farming community has no links to modern growth and its unsustainable counterpart which is seen as an “outsider” influence (Trindade, 2008). In this ancient subsistence culture, there is a strong sacred unity in the stewardship of land and obligation to community based on what Trindade (2008) calls the “Lulik Circle” in

which traditional values are at the centre. There has been no attempt to link these sacred *uma lulik* and self-reliant traditions to the SDGs.

2. The small fledgling private sector community lacks a sustainable development focus, reflecting the rent-seeking oil-led development in the rentier State of TL. This creates a mentality of seizing what the land (and sea), as well as the public purse, provide financially without consideration of social ethics and ecological consequences (Karl, 2004). Examples in TL are: (i) a Lospalos venture rejected due to not meeting environmental impact regulations; (ii) Pelican Paradise's massive social and ecological dislocation plans; and (iii) lack of a renewable energy component from TL Cement's factory in Baucau after initially strongly promoting this component.
3. The "commodity fetishism" of Western values that has come with the opening up of TL to the West's consumer capitalism has resulted in a "social amnesia" (Billig, 1999). East Timorese communities, scarred by war and violence, lack self-confidence and are enticed by consumerism (from cheap non-nutritious Indonesian food to social status seeking conspicuous consumption), thus forgetting traditional cultural values of stewardship, while waste and rubbish disposal accumulates. As Fridell (2007) argues, in developing economies where survival out of poverty (for the poor) and social status seeking (for the rich) dominate, thus ethical and "sustainable" consumer behaviour is not on the agenda and instead result in retail market-driven commodity fetishism.

Investment strategy planning

The central investment strategy in TL is large physical infrastructure. Construction is ubiquitous. Given the tragedy and devastation at the very end of the last century, it is not surprising and, in fact, essential that infrastructure investment is at the core of the TL development strategy. Roads, ports, internet, electricity, water and sewage, and the building of schools and medical facilities are all basic infrastructure that enables sustainable development to be viable. In Table 1 the six listed major public sector projects lead the economic stimulus for a country that lacks a viable private sector. This has been a successful approach in other countries that required strategic investment after crisis; for example, when Singapore seceded from Malaysia on 9 August 1965 (Krause et al., 1987). Complementing this major projects initiative has been four other investment strategies: (i) Creating the sovereign wealth fund called "Petroleum Fund" with an Estimated Sustainable Income (ESI) formula to ensure oil/gas financial returns are not all spent immediately with nothing left when oil revenues cease to exist; (ii) As part of "deconcentration" of governance, foreign investment in municipal development (called "ADM") has been set up; (iii) A legal framework for environmental impact statements (EIS) and their regulation has been set in place; (iv) NGOs are plugging an investment gap in the populace-dominated agricultural sector by providing both hard and soft investment required to build sustainability.

Column 2 in Table 1 lists nine limitations from the findings that raises concerns with the implementation of the investment strategy outlined above. From the sustainable development viewpoint there is a significant challenge in addressing these limitations. If this challenge goes unheeded or only tentatively directed, then the public funded policies (and donor-supported practices) will remain solidly within the existing rigid domain of the purely quantitative economic development path. In this scenario, the SDGs will endure only as a rhetorical checklist and not able to guide policy efforts on the ground.

Limitation # 1 – Large infrastructure projects boost import dependency

The six large physical infrastructure projects listed in Table 1 are so heavily import dependent that it has resulted in 70% of all State spending being imports, as at March 2016 (La'o Hamutuk, 2016e, slide #33). This import dependency is recognised as a challenge by the government's own external trade statistics (RDTL, 2015, p. 33). Scheiner (2015, p. 87)

argues that many of these projects are too big and drain import dollars from the declining export oil-based revenue and subsidise growth in future imports; for example, the Tibar port project near Dili is aimed at handling “an eight-fold increase in imports”; also major large road construction heading to the Indonesian border encourages greater import of Indonesian consumption goods (see Limitation #5 in Column 3), making it harder for local production to compete (La’o Hamutuk 2016f).

Any major infrastructure project needs to take a strategic development perspective. To develop agriculture, food processing and small manufacturing, there needs to be imported inputs for plant and equipment (to set up) and various ongoing supplies (to keep going). Two benefits are required to be strategically structured into such projects. One is technology transfer with appropriate technology to build absorptive capacity (Kumar et al., 2007). The other is to develop the “local infrastructure (rural roads, proper market halls, transport facilities, etc.), which would allow farmers to integrate into local markets” (Hoering, 2013, p. 16). In early stages of development, there will be a trade deficit with high imported investment inputs to set up industries. Small and local based import substitution activities are the best to start with, which require relatively lower imported inputs than any over-large infrastructure projects that benefit mostly foreign contractors and local power elite. Thus, a well calibrated infrastructure investment strategy will create the conditions for building critical mass in local production and export production (like coffee).

Limitation # 2 – Minimal private sector entrepreneurship

There are many small traders in TL, from “shoulder sellers” of bananas on the beach at *Areia Branca*, to stall holders and kiosks. Such business enterprise shows ‘necessity’ to obtain some cash to survive in the urban environment. Others find it necessary in a rural environment to sell some of their subsistence farming produce in order to buy rice for the young people from their village who demand it. The above are done by direct imitating competitors and offering the same service as the next seller. Both provide very limited exposure to the market that is only barely existent in TL. These traders do not have the entrepreneurial orientation needed for development identified with innovation, motivation, proactive, independence, risk-orientation and focus on achievement (Lumpkin and Dess, 1996). Some TL studies provide reasons for this entrepreneurial deficiency, coming from an acute lack of:

- ...familiar examples and financial skills (Xavier et al., 2014),
- ...experience running business, having only employment experience mainly with NGOs (Murta and Willetts, 2014),
- ...opportunities in low productivity agriculture (Dasvarma, 2011),
- ...exposure to markets with safety net support; thus people are risk-averse and thus business owners are diverted to safer government contracts (Willetts et al., 2016), and
- ...government policies in moderating above ‘lacks’ (Soares et al., 2014).

From such dearth of entrepreneurial orientation emerged in TL an alternative to innovative behaviour for “doing well”, and that was predatory behaviour (Galbraith, 2008). Consistent with the pattern in all highly oil dependent poor economies (Karl, 2004), TL lacks a private sector that is innovative and supportive of the local communities. Instead TL relies on rent-seeking activities through government contracts (inherited from colonial times) and corruption (inherited from occupation times). Thus, there is widespread predation that has led to much red tape, government contract collusion, and corruption, as noted by the President of TL ‘TMR’ (Ruak, 2016). This has stunted the size of the private sector and also limited the scope of those business enterprises that manage to emerge.

Limitation # 3 – Exceeding the ESI formula

As noted in a submission to the 2017 Budget Proposal:

La’o Hamutuk has repeatedly expressed concerns about the Government’s policy of withdrawing in excess of ESI. Now that the Government recognizes that petroleum revenues are rapidly coming to an end, it should re-evaluate spending plans, deciding whether each capital-intensive project should be carried out...Meanwhile, the money spent in them comes from a finite total, and is no longer available for necessary projects, sustainable economic development, equitable projects, and social services for everyone. (La’o Hamutuk, 2016d, pp. 7-8)

Provision in the Petroleum Fund (PF) to expend above the ESI formula was explicitly for what the National Parliament considers are “...reasons that it is considered in the long-term interest of Timor-Leste”. With reduced oil revenue and excess of ESI spending, the Banco Central de Timor-Leste (2016) presentation shows in slide #12 that for 2015 and 2016 the revenue going into the PF was much less than the spending from it. As La’o Hamutuk (2016d) show, this will again occur in 2017, and the President of TL signalled this as the major economic concern at the opening of the session of Parliament in which the 2017 budget was being approved (Ruak, 2016).

Limitation # 4 – Difficult to attract FDI in public sector investment

For public sector led development in a country starved of a private sector, it is essential that ‘footsure’ Foreign Direct Investment (FDI) – committed to development of TL – is strongly attracted on the basis of large public sector infrastructure investment projects. Inder and Cornwall (2016) spell out the advantages of FDI in an infant economy with little private sector; but these FDI advantages will only be realised if FDI firms are ‘footsure’ by locking them into ‘place’ as part of the country’s sustainable culture and institutions consistent with the SDGs. This has not occurred in TL. First, the EIS regulation has not been strictly enforced (see La’o Hamutuk, 2016a). Second, there are a series of negatives in TL Government that make it difficult to attract ‘footsure’ FDI. As Inder and Cornwall (2016, p. 41) note:

Investors will find the biggest obstacle will be in knowing ‘how things work’. In an Infant economy with gaps in markets and few examples to follow, a new arrival will have a very steep learning curve. [This is the experience in TL, with a high-level of interest by foreign investors] but conversion to actual activity on the ground is much more difficult to achieve. For example, the 2005 World Bank report on Investment opportunities documents at least 6 potential foreign investors with discussions that had reached the stage of formal agreement (such as memoranda of understanding). It appears that 11 years on, none of these came to fruition.

This “knowing” obstacle has even affected the ‘leading light’ in public sector-led development, Tasi Mane. South Korean giant Hyundai withdrew in June 2016 from its agreement for “design and construction of the Suai Logistics Base” (a central element of the Tasi Mane project) after one year of delays in receiving approval from the nation’s courts due to problems it had in the legitimacy of its own contract with the government (La’o Hamutuk, 2016b). Add to this the uncertainty of the whole oil project (La’o Hamutuk, 2016e), the ‘footloose’ character of much global FDI (Courvisanos, 2012), and the difficulty in effective transference of ecological, social and technical skills with the capacity building required in an infant economy (Inder and Cornwall, 2016). The total negatives are a huge limitation in the investment strategy inbuilt in the SDP. Despite these negatives, with goodwill on all sides, there are some positive signs. First, TradeInvest was restructured in November 2015 to provide a more effective ‘one stop shop’ for FDI. Second, the two largest FDI plants in TL are under construction, Heineken beer in Dili and TL Cement in Baucau (notably neither is a public sector-led investment, although the latter has a 40% government share).

Limitation # 5 – No prudent plan for repayment of funds from international lenders

TL was fortunate to begin life as a Sovereign State without any debt. Resisting overtures to borrow, TL has been able to use its oil-based export to fund its development. In November

2011 the National Parliament approved the Budget and Financial Management Law, and Public Debt Regime, while authorising the first international borrowing for investment. In the 2015 budget only 3% (\$7m.) of State revenues was planned to be sourced from international lenders, but as petroleum revenues decline pressure will inevitable mount to borrow. As Karl (2004, p. 667) notes from studies on other oil-dependent economies: “To avoid unpopular reforms, governments use their oil as collateral for borrowing abroad or intensify the squeeze on the export sector. Petrodollars simply permit more scope for cumulative policy error.” The result is a “debt trap” for developing economies (Payer, 1974) and particularly for oil-dependent developing economies like Nigeria (Okonjo-Iweala et al., 2002). As suggested by Kretzmann and Nooruddin (2005) there is a debt limitation (or ceiling) when drilling for oil and this is especially serious limitation in poor developing economies. To address this, a prudent plan through adoption of hi-tech imported renewable energy technologies together with local indigenous simple technologies in energy-saving innovations is required because “[t]hese technologies will provide energy for those who need it, while tackling poverty, debt, and climate change.” (Kretzmann and Nooruddin, 2005, p. 5)

Limitation # 6 – Lack of effective linkages in Social Market Economy

In terms of public sector-led development, after the huge billion dollar Tasi Mane project, the next largest is ZEESM TL, having already spent \$544m. (2014-2017). ZEESM TL aims to establish “special areas of social market economy that will function as incubators for governance policies that can be implemented as tools to drive the global and integrated development of the Democratic Republic of Timor-Leste” (RDTL, 2016c). This “Social Market Economy” top-down public sector-led model has its pilot project set up in the poorest municipality of TL, Oé-Cusse, an enclave on the north coast in the western part of the island of Timor. The model is described as “an integrated approach to sustainable and sustained growth, combining the dynamism in trade sectors, industry and social components” (RDTL, 2016c). The President of the ZEESM TL Authority, Dr. Mari Alkatiri, is quoted in the brochure as explaining that the “Social Markey Economy is a concept that challenges the paradigms and development models already sold out, even those more advanced ones.” (RDTL, 2016c)

For a full critique on the application of this model to Oé-Cusse, see Meitzner Yoder (2015), with an update in Meitzner Yoder (2016, p. 2) which notes: “For many Oecusse residents, the excitement and positive expectations they felt when the project was announced in 2013 turned to disillusionment, anger and fear as the ZEESM project implementation began in earnest in mid-2015.” This section focuses on one significant limitation of the model. There is one limitation identified in the data analysis of the ZEESM TL project; the lack of precise tools to ensure the private sector is attracted to create a valid and viable markets on the foundations literally built by the State through the windfall oil revenue. Many public sector works are being built in a very impressive manner; notably highway, airport, hotel, large bridge, irrigation system, commemorative park, and sports complex. The problem is how all this is coordinated and linked to a socially and ecologically sustainable market economy that is economically viable. There is no coordination from the foundation of this project that links the private sector to all that is being built. From economic history, there is only one successful reference to the “Social Market Economy” and it was a very special model of market economy developed by ordo-liberal (not neoliberal) German economists and implemented in an already capitalist West Germany after the Second World War. The essence is effective coordination linking the market that is free of cartels and monopoly power, together with a set of social programmes (i.e. anti-trust, redistribution, compensation and labour market intervention) to protect from the worst excesses of the market (Wrobel,

2010); such coordinated linking seems to be completely missing in the ZEESM TL project at this stage.

Limitation # 7 – No renewable energy

Investment in renewable energy is a massive priority for TL given: (i) the earlier identified need for divestment in oil/gas, (ii) three renewable energy targets in the SDP (#3, #4 and #5 in Appendix D), (iii) commitment to SDG #7 for affordable, reliable, sustainable and modern energy for all (see Appendix A), (iv) commitment to the 2015 Climate Change Paris Accord. There are many very small excellent renewable energy projects dotted over the TL countryside thanks to the efforts of NGOs and service clubs (e.g. Rotary and Lions). Yet there are deep concerns with the limitation on willingness and ability of the government to deliver on renewable energy. Two old technology diesel power plants is not a good start. Also, TL is one of the very few countries not to specify their Paris Accord carbon emissions target (as of June 2017) despite virtually all TL exports being an energy source that increases carbon emissions globally. Further, there is no evidence of any State investment spending in renewables. With SDP #10 having been achieved by setting up the Climate Center for Climate Change and Biodiversity at UNTL, the hope is that this centre will drive a renewable energy agenda in the future. In the meantime, massive funds have been released from the PF and invested in Tasi Mane on the basis that, as Petroleum Minister Alfred Pires states, oil is for the “human development” SDG goals, which is seen on the roadmap as a priority over SDG #7 (which has to wait for the 2021-2030 time frame). In this way the SDGs are not seen as “integrated” or “indivisible”. Instead, from the investment strategy perspective, Minister Pires conflates the human and environment SDGs by putting forward the notion that LNG is “clean energy”.

Limitation # 8 – Lack of certainty in access to land for investment

For investment by locals and FDI in TL, there is need for secure land tenure and access to land after colonial and invasion occupations distorted ownership from traditional claims. All international studies show that clear and unambiguous land tenure legislation (individual and/or collective) provides the security of a human right, as well as the freedom to use the land as a long-term economic asset. As the President of the National Parliament stated when opening it on 20 September 2016: “...land law is essential for the development of the country. It will create the necessary legal reliability for the property ownership regime to ensure investment and the integrated and sustainable development of the country.” (da Costa, 2016) Further, any access to land with tenure in TL must take account of East Timorese culture “...such as family and kinship ties and wider affiliations” (Thu, 2008, p. 157). Such requirements have resulted in this limitation. It took 14 years after restoration of independence for a broad land tenure framework legislation and registration system to be put in place in early 2017. This is the first step in a long process towards certainty. Registration will allow determination, through the new law, as to who owns the land where there are even up to three legitimate registration claims (customary, Portuguese, Indonesian) on the same block of land. There is a further aspect to this limitation even once land tenure is secured. The individual temptation, or State forcing of owners with small parcels of land, to sell the land, leaving the household without this valuable asset and money that is easily ‘fritted away’. From this perspective, Assies (2009, p. 59) argues the following:

A security or rights oriented approach, inspired by a broad human rights agenda, is more likely to take into account the needs and rights of the most vulnerable groups and contribute to their legal empowerment, beyond empowering them to dispose of their land in a market context.

A successful method of achieving empowerment for long-term sustainability – which leads to stewardship of the land that recalls traditional times – is by community ownership (i.e. cooperatives) which creates scale and mutual cluster of support amongst farmers with

different aptitudes and skills (Moore, 2016). The Kdadalak Sulimutuk Institute [‘streams meet to become one river’] (KSI) cooperative system developed by Antero Benedito Da Silva has enshrined this land cooperative system which provides information, legal advice, and regular KSI meetings across all the cooperatives on effective access, entitlement and use of the land.

Limitation # 9 – Severe underfunding of education

“We invest more in construction than in knowledge” (Ruak, 2016). La’o Hamutuk (2016e) calculate that for the period 2011-2017, TL budgeted \$5.1b. for infrastructure and only \$0.97b. for education. Construction is critical in the short-term to link markets in food, commodities and tourism; but for the long-term development of new markets and a transition away from oil that is eco-sustainable, then education is *the* priority investment strategy, both in terms of physical buildings, but also teachers, books and other ‘soft’ investment. As well, sustainable education requires the type of investment made in health and nutrition of the children being educated and their mothers; an investment driven by the excellent strategic approach of the Cuban medical model (Walker and Kirk, 2013). This education investment needs the absorptive capacity to (i) deliver effectively without corruption, and (ii) build social learning that is broader than just textbook learning. As Szimari (2013, p. 239) states:

If the efficiency of investment is low and absorptive capacity (skills, education, capability, experience, incentives) is lacking, capital productivity and total factor productivity will be low and the impact of accumulation on growth will be limited.

Szimari (2013) shows that in Sub-Saharan Africa, substantial increases in education investment spending did not build absorptive capacity and thus development did not eventuate.

Due to the underfunding of education in TL, most of it is textbook learning without the resources for researchers to access journal databases, without the skills and experience from practical activities, without experienced teachers in language and mathematics, without a holistic understanding of the ecosystem, and even without an adequately publicly funded school feeding programme for students to have the energy to absorb any education. Public investment in education has been decreasing over the years 2012-2016. This has produced in TL an underfunding of education with limited learning from the State budget, while leaving the rest to fragmented learning from a small resourced incongruent set of (i) profit-driven private education suppliers and (ii) non-profit NGOs. This is the most serious limitation in the list on investment commitments. There needs to be a serious commitment of education investment in social learning from a holistic ecosystem perspective (e.g. Ego Lemos and his PERMATIL NGO which teaches permaculture techniques, see Wigglesworth, 2016, p. 108), so that knowledge can drive human, economic and environmental sustainable development in TL.

Support implementing investment strategies

The critical public investment strategy and related donor investment commitments have been identified in the previous section above. For investment to become established and be used effectively there needs to be supporting implementation strategies that operate as separate core activities within one broad-based SDG strategy by public (State), private (corporate) and social (cooperative) organisations. Such organisations need to operate in a coordinated manner to support programmes that reinforce the investment committed and provide cumulative growth in the use of invested equipment (e.g. machines and workspace) and other physical objects (e.g. plant seeds and electronic software) in commercial (for profit), social (for equity) and environmental (for conservation) contexts.

Column 3 in Table 1 identifies six distinct core activities that lend support to economic strategies in TL that operate across the sustainable development space. The primary support

mechanism is the international donor/NGO capacity (INGO) building activities and projects undertaken since the vote for independence in 1999. These activities are very broad-based across all sectors of the domestic economy of TL, and are driven by deep social and environmental conscience from the mission statements of the various INGOs. Their focus can be ‘social’ in terms of supporting health and education initiatives (e.g. Cuban medical model, school gardening), ‘economic’ by creating market facilitation for small local based businesses in tourism, hospitality and manufacturing (e.g. salt, fuel efficient stoves), or ‘ecological’ by building strong physical environmental habitats (e.g. protecting coastal mangroves, sustainable farming practices).

There is also an ardent indigenous cooperative movement documented by da Silva (2011, p. 310) in Lospalos region as “fulidaidai”, meaning “working together” or “to be together in building houses and farming” (the same philosophy but with different names exists in other regions of TL). Da Silva (2011, p. 223) sees this as an economic strategy of *Ukun rasik-an* in which each member of producer, distributor and consumer cooperatives makes a contribution in money or work to signify their own voluntary individual participation that benefits all through intensification of work practices that ensure greater collective self-reliance. This cooperative practice in the past assisted the survival of the FRETILIN resistance during the Indonesian occupation, and in the present operate as registered cooperatives (MCIA, 2013) through agricultural producers (38), multisectorals (25) and credit unions (74).

Three other specialised supporting mechanisms have also arisen. With a proposed budget allocation in 2017 of nearly as much as the total education budget allocation, veterans spending allocation (\$105m.) has the potential to be a source of capital funding for construction activity. Also, the TL Government has committed to decentralisation programmes driving application of investment to all corners of TL with participation and empowerment at municipal, *suku* and *aldeia* levels that aim for sustainability in terms of economic strength (reduction in poverty), social equity (priority needs from the community) and ecological (technical impact audits). Caetano (2016) sets out these State sponsored programmes, of which the two major ones are PDIM and PNDS (only \$11m. and \$1.2m. respectively, from total capital spending of \$247m. in 2017). Add to this the strong grass roots organic 39 Australia-TL Friendship groups which provide support to local communities throughout the 13 municipalities of TL (AusTimorFN, 2016). Final support mechanism is yet to be implemented, but much has been developed in what the TL Government calls its “Fiscal Reform Program” with the aim of increasing domestic fiscal State revenue collection to 15% of non-oil GDP by 2020 by broadening the tax base. This consists of a 10% Value Added Tax (VAT), removing tax exemptions, reform corrupt customs administration system, “tier 2” 15% income tax rate (instead of flat 10%), and higher excise taxes (Borges, 2016).

However, Column 3 in Table 1 lists seven limitations from the findings that raises concerns with the ability of the public policies, organisations and groups which have been identified immediately above to be able to support this investment in sustainable development. These limitations further undermine the sustainable development programme of the government and its public servants. The challenge facing TL as a community (and *not* the government alone) is to find how to address these limitations in a manner that can build on the hard-won gains in development made by this country since the restoration of its independence in 2002. Identifying these limitations as set out below may hopefully be the first step to addressing them.

Limitation # 1 – Donor budget decline

The annual \$200m.plus financial disbursement support from multilateral and government donors (with assistance from INGOs) is critical in two respects. One is the social and

environmental conscience of such donor organisations, and the other is the dependence of the State in donor contributions to bolster the funding over and above State budgets. Both provide the State with “room to move”. The fossil fuel dependency has encouraged the focus on massive big project spending, while deflecting any criticisms of any abrogation of State responsibilities by noting the role of donors in filling this gap through sustainability and capacity building activities. However, there are severe limitations to this “gap filling role”. One is the top-down maximising economic growth approach of the large multilateral and government donors which has resulted in 80% of their spending going to imports, as at March 2016 (La'o Hamutuk, 2016e, slide #33). The other is the long-term relative decline of donor support in the economy from 80% of combined sources budget in 2002 to only 10% in 2016, due to the massive expansion of State spending over this period (La'o Hamutuk, 2016e, slide #30).

The challenge is for both the State and domestic NGOs to contribute in crucial local-based sustainable development activities with the relative decline from donor disbursements. The oncoming dramatic reduction in State oil/gas revenue and continued big major spending projects, makes the State’s role in sustainable development activities extremely difficult. Indigenous NGOs are slowly formulating their own capacity building roles, but with much more limited resources than INGOs. For example, Raebia is a domestic NGO committed to sustainable agriculture, with great outcomes in the farming villages they support. But, Raebia is operating on a very small scale in only a few villages in Manatuto and Aileu, while still largely dependent on funding from the external USC-Canada donor (Martins, 2016).

Limitation # 2 – Cooperatives within a largely subsistence-based economy

Ardent, the cooperative movement it is; but strong, it is not. Even though the RDTL Constitution in Section 138 under “Economic organisation” sets out the “co-existence” of cooperatives and social sector ownership in the economy together *with* the public and private sector means of production (RDTL, 2002), the reality is much more modest with 53% of producer cooperatives and 32% of credit unions being “inactive” (MCIA, 2013). This lack of success remains, despite efforts to restructure the TL National Directorate of Cooperatives with credit union capacity building support from the Credit Union Foundation Australia (CUFA) in the period 2011 (OCCUL, 2012) to 2014 (OCCUL, 2014). The most successful credit union in TL, the Credit Union of Baucau (CUB) reflects in its strength the underlying precarious condition of all cooperatives which leads to lack of resilience against any potential or actual crises. The CUB has a strong surplus built up of \$5.5m. as at October 2016 (Cabral, 2016) with emphasis on savings and relatively high interests rates to support their investments (e.g. renovations of the Pousada of Baucau). The problem is that the emphasis on savings in a largely subsistence-based economy reinforces a cultural agreement where locking funds away is more important than lending out to activities that have the potential to develop the economy. This leads CUB to “invest” the surplus in assets that provide safety (e.g. Pousada) with renovations that are costly and with high leasing costs to the community.

The agricultural producer cooperatives in TL are even more precarious than the credit unions, with subsistence-based activity dominating to the extent that it is difficult for the cooperative movement to grow outside its limited culturally determined vision from the hills (*Foho*) people (Silva, 2012). In the similar context in Ethiopia, Chagwiza (2014) identifies that cooperative members are usually somewhat poorer farmers with low levels of assets, education and experience. To overcome such limited cultural and economic conditions, da Silva (2011) explains how the KSI farmer’s education institute has been established in one of the very poorest municipalities in TL, Ermera, to promote land reform, improve quality, develop international market links, and in this way provide these farmers with greater control over their own means of production. Observation of KSI farming cooperatives shows market

gardening to benefit greatly, but limited by the supermarket size and prices in Dili; while coffee plantations have only short-term perspective of stripping the coffee beans, without investment in new trees and better agricultural practices. This indicates that it is difficult to build viable commercial farming on the basis of short-term activity without greater long-term control of the agricultural production system. Sahlins (1972) shows how a subsistence economy can be a strong viable development strategy built on reciprocity and altruism, and not aiming to copy commercial capitalist structures.

Limitation #3 – Small enterprises lack critical mass and essential economic focus

The donor efforts to create markets are limited from two sides of the equation of business development (BD). On one side such BD is considered less glamorous than big investment projects discussed in this report as part of maximising economic growth (Scheiner, 2015). This limits government business policy support to the margins. On the other side, there is not a culture of accountability from the business operators and their supply chain (Soares, 2015). Despite small tangible results with such small enterprise gaining some traction in their sectors, these two BD limiting factors prevent transformation of these sectors into strong viable economic, social and ecological sustainable markets. The issue is that while the focus is still on the ‘big side of town’, these small firms will not be able to gain the momentum needed to change the trajectory towards a SDG economic model.

Limitation # 4 – Finance sector very limited and risk-averse

The private and social (cooperative) sectors require finance to allow investment to thrive in plant, equipment and human resources. Finance from retained earnings (profit or surplus) is impossible in both these sectors, given their very small and totally underdeveloped condition. Thus, what is needed is an external supportive financial system within TL. A UNDP Timor-Leste report on access to finance analyses the supply and demand of small and medium enterprises financing in TL (Wronka, 2015). In essence the report notes the supply requirements and criteria for financing enterprise activities is “not conducive” to new entrepreneurs because all parts of the TL financial system is extremely risk-averse due to a lack of a safety net support on both the demand and supply sides. While the report notes on the demand side there is mostly ‘necessity’ (out of poverty) motivation in business. There is only a few with opportunity-oriented intention to start and expand, but there is very limited finance for these new entrepreneurs because own funding is inadequate, while lacking skills, ability and rationale to access external funds.

From the supply side, the TL financial system consists of four types of risk-averse providers. The largest finance providers are the very conservative commercial banks that seek collateral and support established “safe” companies, especially with construction contracts (including the TL Government-owned BNCTL which prioritises civil servants). The two microfinance institutions (MFIs) are Moris Rasik and Kaebauk Investimentu no Finansas [KIF] and focus on microcredits, especially to women, in order to reduce poverty and not start-up innovative enterprises. KIF (formerly Tuba Rai Metin) gained the required ODTI (Other Deposit Taking Institution) status in April 2016, with the assistance of its international Kiva NGO underwriter (based in San Francisco), but the vast majority of KIF loans are for kiosks that serve as ‘mini-markets’ that dot the whole TL landscape (Moxham, 2005). Moris Rasik (initiated with support from Grameen Bank) has a broader client loan base than KIF but fell into a financial crisis in 2011 and is still trying to convert from NGO to ODTI as required. Wronka (2015) criticises both MFIs in “misleading” their clients with “flat” interest rate loan information, yet “effective” interest rates paid are around 30% or more per year. Also, the focus on reducing poverty limits the role of MFIs and ignores the critical need to provide start-up and expansion finance for innovative growth-oriented enterprises in areas needed for

sustainable development in TL, like permaculture (integrated multiple product farming), renewable energy (solar and wind), waste reduction (recycling and organic cleaning). The third type of provider are the minuscule 73 credit unions (except CUB) and savings groups that focus on the saving function and not to support investment at all. Finally, there are the multiplicity of little government private sector development programmes with very small grants and (yet again more) capacity building with limited absorptive capacity being created. Each ministry having its own grants aligned to their respective priorities and political allegiances.

Limitation # 5 – Large leakages to Indonesia

Indonesia has achieved great inroads into the consumption goods market in TL. Mostly cheap products that the poor in TL can afford come from Indonesia (where scale production ensures cheapness). Many specialised services for the local population (not *malae*) also are set up and have employees from Indonesia (e.g. hairdressers, restaurants, construction). This results in much economic and social value leaking across the border to this large (now very friendly) neighbouring country, while environmental regulation and ecological motivation in Indonesia is extremely low (García et al., 2007). This is a particular concern for the large TL agriculture sector where an inadequate supply chain (e.g. poor roads, unstable internet, weak networks, and lack of distribution cooperatives) does not allow small farmers to have their products sold in accessible retail locations. A guide to overcome the agricultural leakage (and also other smaller leakages to Australia, Malaysia and Vietnam) is the seven point multi-track approach to sustainable agriculture proposed by Pretty (2006, p. 4) which essentially aims to connect producer to consumer in an ecologically and socially sustainable value chain. This approach to agriculture is considered appropriate in TL by Braithwaite et al. (2010, p. 185) when they argue “...institutions that simultaneously strengthen village subsistence economies and market economies, as opposed to forcing a choice between traditional production and modernity” is the way to build a strong value chain with greatly reduced economic and social leakages.

The Pretty multi-track approach to the value chain can also be advantageous to non-agricultural sectors that are dominated by foreign commercial interests (especially China – the vastly expanding importer). Up until now all TL imports have had very little FDI transfer of technology and skills in sectors like construction, hairdressing, and hospitality (see RDTL, 2015). This issue needs to be a priority issue in any discussions relating to TL’s accession to ASEAN membership, otherwise such a free trade agreement will create leakages which will result in social and ecological unsustainability concerns (Hague et al., 2011).

Limitation # 6 – Decentralisation delayed and restricted

Decentralisation of governance is critical to addressing local based issues, and not having the centre determine all governance issues in this geographical landscape that is challenging to connect closely together. As noted briefly in Limitation #1 under Planning Framework, decentralisation allows social learning and building absorptive capacity at the level of municipalities and sub-municipalities so that local governance can be effective. Yet, there is a long history (since restoration of independence) in which continual delays have limited any chance of this decentralisation supporting structure providing the enabling mechanisms for public investment (especially huge infrastructure spending) to be effectively applied and discharged fairly throughout the country. Despite the positive tone of Caetano (2016) in setting out the government’s complete decentralisation programme, there is only restricted minimal decision-making accorded at the municipal and sub-municipal levels; with only the four most populace municipalities granting the non-elected “President” (in reality still the “Administrator”) to control 10% of the centrally allocated budget. This very limited effort is called “deconcentration” by the TL Government, and led to grandiose ceremonies in October

2016 to mark the change to Presidency, with white suits for all other administrators; nothing more. These ceremonies exemplified “top-down” with no opportunity for the community to fully participate in decision-making at municipal and sub-municipal levels, which undermines the social equity aspect of sustainable development. Shoemith (2017), in his study West Timor’s experience as a disadvantaged region with radical rushed decentralisation by Indonesia in 1999, found large inefficiencies and political problems in the region due to significant lack of absorptive capacity. Shoemith reflects that maybe TL is unintentionally achieving a better outcome with its deconcentration approach.

On the other hand, there is much bottom-up building of absorptive capacity since independence that is being ignored and not strongly supported by central government. There are two very effective, but very small, grass roots activities of PNDS and the Australia-TL Friendship groups. Conspicuously, both lack any “bottom-up” governance support or input into decision-making from central government. Thus, while both empower the locals at their *suku* and *aldeia* levels, they do not undermine or diminish from the centralised control of governance that still is embedded with the Dili political elite.

Under centralisation, both social fragmentation and ecological destruction concerns inevitably take second (or third) place to the demands of economic growth from both neoliberal international organisations (requiring ‘responsible economic management’) and major FDI firms (requiring ‘responsible market management’). In this situation, the SDGs are inevitable compromised for the one goal of ‘economic progress’, and the SDGs are merely a “legitimation” instrument for the politically powerful to maintain and increase their power without creating political and social unrest (Habermas, 1998). The 18 August 2016 Dili Declaration from the 5th Conference on Deconcentration, Administrative Decentralisation and Local Government is a very good example of the legitimation exercise conducted by central government. The declaration was being written while the most inspiring aspects of grass roots activity were being discussed on the floor of the conference; Ego Lemos on school gardening and Australia-TL Friendship group achievements. The Declaration itself provided strong decentralisation rhetoric without any specifics and also proclaimed “taking note” (which means what?) of SDG #17 Partnerships for the Goals, when in fact this goal did not appear anywhere on the 2016 version of the roadmap, and becomes a vague cross-cutting goal across all goals over the whole period until 2030 in the 2017 roadmap version (see Appendix B).

Thu (2008, pp. 157-8) argues that TL needs an “alternative form of governance” beginning with land decentralisation, in which:

...local historical knowledge of the village heads (*chefe suco*), hamlet chefs (*chefe aldeia*), together with the village elders (*concelho de suco*) can make an extremely valuable contribution to the formation of policy and alternative governance structures, allowing the state to work for its people.

There are also other local traditional leaders (*lian na'in*, elders who are keepers of the word; parish priests) that could be engaged in the process. Only with this form of alternative governance structure can SDGs be delivered in a truly effective manner. Noting particularly that the “Peace and Justice” SDG #16, which the TL Government was instrumental in composing, specifies the need for “accountable and inclusive institutions at all levels.” Such a goal can only be achieved by a stronger and more urgent participatory democracy; one which adds ‘mistake ridden’ absorptive capacity through social learning to the already strongly operating ‘capacity building’ through NGOs in TL (but which is *ad hoc* and has limited systemic evolution).

Limitation # 7 – Fiscal reform programme regressive and costly

Due to the long-term reduced output from the oil fields and the long-lasting fall in the oil price from the peak of early 2011, a large shortfall in State revenue from oil/gas royalties and taxes has emerged. The State needs to introduce a revenue source that can substantially support the public spending programmes of the government and be able to collect such revenue in a poor country which has inevitable lack of transparency in many economic activities. The Fiscal Reform Program described above is the TL Government's response to this issue. The 10% VAT is the chief tax proposal in this reform package, which has provoked serious and robust criticism from CSOs. La'o Hamutuk (2016c) in their submission to the draft VAT adopts the "Taxpaying Inefficiency Index" that reveals the number of person-hours a business spends preparing its current tax return for each one per cent of its revenues paid in taxes. Their submission calculates that TL index as four times larger than the world average. Thus, the administrative overhead for business is already crippling without adding the cost of VAT administration. UN-Women (2016b) notes that the VAT administration will particular affect business run by women. Further, UN-Women (2016b) calculate that 60% to 65% of all East Timorese liable to pay VAT will not have the ability to pay; this is because a VAT system is always regressive and to remove the 'regressivity' of the tax leads to complexities which then undermine the basic simplicity advantage of a VAT (Hyman, 1990). Finally, UN-Women (2016a) reports on the administrative cost to government of introducing the VAT (start-up, operating, software maintenance and compliance and audit) while emphasising the very large human resource needs required to skill up for this task. UN-Women (2016a) sets out alternatives to the VAT that include higher income tax rates and a low but slowly rising VAT rate.

More fundamentally, La'o Hamutuk (2016c) point out the basic economic truth that it is only through investment in supporting innovation and new enterprises that growth in the private sector will enable State revenue to increase in a stable and viable manner. To achieve the SDGs requires rejection of regressive fiscal reform, and instead develop a coherent and integrative adaptive system that is economically viable (as described by UN-Women) and strongly sustainable. This is a paradigm shift away from fossil fuels towards new modes of ecologically and socially sustainable coordination and cooperation.

Discussion: Challenges, Opportunities and Options

The issue raised by Table 1 is whether the three columns as a whole provide the basis for sustainable development in a country that historically has suffered significant conflict, war and dissension over a long period of time; yet has been able to exhibit extraordinary resiliency and self-efficacy despite these hardships. The challenge ahead for the TL Government, Parliament and public servants is to recognise the limitations as set out in Table 1 and chart a course that opens up new opportunities that address directly the issues raised within each limitation. Such a new course needs to be a paradigm shift to sustainable development. The consequences of remaining on the same unaltered SDP path, without any interactive perspective plan changes, is to keep failing due to the limitations the President TMR recognised when listing the existing four failures of current policies: dependence on fossil fuels, lack of promotion of national resources, not sufficient jobs, no citizen participation in transformation (Ruak, 2016, p. 22). Post conflict (pre-2000) and crisis (2006-08), the country of TL needs to exhibit the same extraordinary resiliency and self-efficacy in order to achieve SDG #16 Peace and Justice as identified by the roadmap as the ultimate goal (or cross-cutting across all goals over time, see Appendix B). To be able to show this resilience under the different hardships of peace requires the same flexibility in working on opportunities that directly address the limitations and offers new options to all under a SDG economic model.

The guide for this paradigm shift are the SDGs, but not in the way they are set out in the existing roadmap. There are too many limitations in attempting to “harmonise” the SDGs with the SDP (as noted in Table 1). The challenge is to adopt the SDGs as one coherent and integrative set of actions with resilience and self-efficacy (not merely tick box items that are only notionally ‘achieved’). These actions can act as a compass to either of two options. One is the reform option. This aims to alter iteratively, incrementally, and carefully the SDP, so that by 2030 both the SDGs and the broad aims of the SDP will be a lot closer to being achieved. Alternatively, if reform does not come from above, then the option is for a critical mass from civil society take the initiative and demand radical change based on an indigenous cooperative “fulidaidai” movement (with farmers, infrastructure workers, consumers, and urban trained public servants) that encompasses the SDGs as central to their economic, social and ecological pathway.

Importantly, in either option, the process of using the SDGs as the compass for new pathways needs to iteratively recalibrate economic policies to deliver a strong non-oil based diversified economy with both a viable profit-based private sector and a practical surplus-based social (cooperative) sector. Incremental adjustment steps are needed (see Appendix C for details of this approach), but only once the perspective is the SDG economic model as a priority, and not the maximising ‘big’ economic growth model.

Expounding on the SDGs is needed, but not as a harmonising tool. Instead the SDGs should be the stimulus for innovation that generates ecologically friendly private and social enterprises. These two types of enterprises can provide a counter balance to the current State led public sector and also enable checks and balances to work across the two new sectors. Inequality arising from the private sector can be contested through social (cooperative) enterprises that espouse and practice (unlike CUB) equity in treatment across the whole TL community. Such checks will prevent predatory and non-transparent behaviour from arising, because through the value chain both private and social enterprises will need to interact with each other openly and collaboratively. For example, the Timor Global private coffee processing company and its supply chain is interacting with NGOs on producing and distributing Timor Vita vitamin child supplement. Timor Global is also developing a sustainable supply chain with coffee farmers in Ermera.

There are some efforts within the TL Government that are moving in the sustainable development direction, notably in the Medium-term Coordinating Ministry (MECAE) which has responsibility for most economic policies outside of the large infrastructure projects. The MECAE is very committed to creating a business environment that encourages private investment and developing non-oil exports in domestic agriculture, community forestry and coffee exports.

Coffee is the major area of effort. MECAE together with the major TL coffee processors formed in 2016 the Timor-Leste Coffee Association (Assosiasaun Café Timor-Leste – ACTL), an industry association bringing together exporters, roasters, traders, farmers in order to expose the unique nature of Timor Coffee to western consumers who desire a luxury coffee. ACTL organised the first annual Festival Kafé Timor on 28 November–3 December 2016 as a weeklong celebration of Timor-Leste coffee traditions with a national cup quality contest judged by internationally renowned coffee cupping experts as judges. ACTL has the potential to improve coordination and increase the efficiency of the industry. Also MECAE is working with the industry to create within the next 18 months a national coffee rehabilitation scheme to address the dilapidated plantation situation.

In forestry, MCAE is working on a plan to develop community-based high-value timber plantations with rotation lengths of 15 years plus. The estimate is that it will take a minimum

of five years to set up this fledgling forestry sector. However, investment is impossible by farmers when there is no guaranteed land titles and/or contracts with no return on investment for 15 years. Thus, MCAE is coordinating the Ministry for Agriculture with significant donor funding from the Asian Development Bank (ADB) and the Europe Union for 30m. Euros to assist in seed funding in community forestry.

Taking positive steps towards coherent self-efficacy identified above, and away from “harmonising”, the SDGs *can* be integrated into the economic system of TL as the guide to a new alternative path. There is a kernel of hope in how it can be done. This comes from an concord across political and economic divides in the country that the SDGs should be followed. From top-down big scale development protagonists (central government, multilateral [e.g. World Bank] and government [e.g. Australia’s DFAT] donors, and local-based FDI drivers [e.g. Deloitte and TradeInvest]) and bottom-up community development activists (NGOs, CSOs and cooperative movement). The activities of MCAE show that there can be a meeting place in the middle. The top and bottom can integrate along SDGs lines by a serious non-harmonising commitment to the development issues raised in Table 1, notably:

- (i) participatory decentralisation (Thu, 2008);
- (ii) local-based formal and social learning (for farmers, cooperative managers, seasonal workers, nascent entrepreneurs) along the lines of the Cuban medical model operating in TL (Walker and Kirk, 2013), which means creating situations in which learning occurs practically and thus building absorptive capacity (at a basic level, in Becora the Senai NT English Language Centre provides Australian accredited Certificate 1 in Spoken and Written English for seasonal workers in agribusiness and hospitality – this allows young East Timorese to work in Australia gain experience and funds for productive activities back in TL, if the whole process is done ethically);
- (iii) financial system that supports eco-innovations of the type listed in (iv)-(ix) below, through appropriate risk-orientation;
- (iv) shift from subsistence to sustainable agriculture by implementing good farming practice in the era of global warming (Sahlins, 1972; as applied in TL by Raebia and by KSI market garden cooperatives);
- (v) localising food production that can “...create spaces for local companies, either private or cooperatives, to move up the ‘value chain’ by conquering the shelves in shops and supermarkets, so far occupied by the products of foreign companies.” (Hoering, 2013, p. 7), for example Agora, which is a Dili restaurant that serves only local products – many produced on the premises from local sources;
- (vi) shift from the current very limited demand for the ‘adventure tourism’ economic model to a larger demand (but still niche) ‘eco-tourism’ economic model along the lines of Costa Rica that avoids mass unsustainable tourism á la Bali (Courvisanos and Jain, 2006), with sustainable tourism on Ataúro Island as a small-scale prototype (Dutra et al., 2011), also the Jape family diaspora investment proposal in the *Pacific Beach Resort* as a medium-scale project;
- (vii) build historical tourism for domestic and foreign links to memory of TL’s past (colonial, World War II, occupation resistance and atrocities), in the same way that heritage plays a strong sustainable tourism role in Australia (Courvisanos, 2006);
- (viii) donors are most effective in using their professional work in partnership with local and foreign business experts, working through local-based organisations to create viable businesses, e.g. Australian Business Partnerships Platform; and
- (ix) local State and private base push for sustainable manufacturing with FDI support building on the newly restructured TradeInvest to provide effective ‘one stop shop’, and strong EIS with requirements for renewable energy by large power users to feed back into the national grid (e.g. original TL Cement proposal).

The above are merely suggestions from observation across all sectors and layers of TL, and endowed with prior research on sustainable development through eco-innovation. The one common dominator across all these suggestions is “fossil fuel divestment” and shift to public, private and social investment that enables nascent “competitive strengths” with potential for development (McCombie and Richardson, 1987). A more recent variation of this approach to development is the work on the “Foundational Economy” which is “...large, mostly unglamorous, rather heterogeneous, and is distributed across the country. It is an economy that meets everyday needs by providing taken-for-granted services and goods.” (Bentham et al., 2013, p. 3). The suggestions above are all such “unglamorous” activities compared to the large infrastructure projects (like Tasi Mane, ZEESM TL, Tibar port). These foundational competitive strengths are based on absorptive capacity and citizen welfare that can bring about paradigm shift through innovation towards sustainable development and address the SDGs ‘head on’ and not via some dubious “harmonisation” process.

The one proviso to the above alternative path of eco-innovation is the need for all actors on this development route to follow well established and clear ‘rules of the road’ which guide behaviour. This proviso needs to start with settling land tenure effectively and removing red tape and corruption. For the economy to be viable, legal protection of property and contract are critical, especially for entrepreneurial activities whether by joint social ownership in cooperatives or individual rights protection. Such structures allow opportunities to blossom and grow. Entrepreneurship is all about opportunities, but they cannot be taken without legal protection due to the risks of launching enterprises. Further, these rules must be established by an inclusive processes in governance which includes traditional customary values, but only if they do not clash with the principles of the SDGs. Thus, negotiating across both power relations (rentier State elite and customary hierarchical practice) is critical to any genuine alternative pathway for achieving the SDGs.

In a new country as is TL, there is huge need for facilitation to guide entrepreneurs and cooperative managers through the maze of all the new ‘rules of the road’. Provision of mentors, advice, idea identification, network contacts and incubation facilities to start-up ventures and cooperatives is required. Such provision is carried out by the Chamber of Commerce and Industry Timor-Leste (CCITL) which should be much better resourced and promoted. Facilitating finance is needed for start-up and continuing growth in identified innovations with competitive strength that also meet SDGs, as this is a major limitation in the current system that must be overcome. Further, clear SDG-based regulations on many aspects of economic life (e.g. land tenure, environmental impacts) need rulings to remove institutional uncertainty. Finally, building local clusters (systems) with supply chain connections and value added processing should be added to the facilitation process in order to link risk-oriented activities to financial institutions, universities, associations, networks, media, and regulatory authorities.

The issue remains as to whether communication has been effective in driving the SDGs into the mindset of all East Timorese in order to bring about transformation, from politicians, public servants, businesspeople, farmers. The term “all East Timorese” must crucially engage with two groups in society that in the past have had relatively little input into the governance of the country. These are the youth which now forms the majority of the population, and women who have been excluded from customary and formal State governance, despite their critical diverse roles in the effective functioning of this society in the microcosm. Both groups are specifically represented in the TL Constitution (RDTL, 2002) in terms of rights, duties and initiatives under Sections 17 (women) and 19 (youth). What is referred to in developing economies as the large “army of the young” needs to be included in any dialogue of the future path as it is the young generation which is pushing strongly the sustainability

issue into the social, environmental and political spheres (Zvavanyange, 2015). Women and development in the context of the SDG #5, gender equality, is a different matter. The issue here is economic, social and political empowerment collectively, focusing on addressing structural inequality with the primacy of women's own agency in generating opportunities and choice (Chopra and Müller, 2016). One example of such collective empowerment is the promotion and support for female entrepreneurship that facilitates the firm growth process (Jomaraty and Courvisanos, 2014), and the role of family embeddedness in business performance (Mari et al., 2016). Which explains why this SDG #5 is seen in the 2017 roadmap version as cross-cutting across all goals through the whole period (see Appendix B).

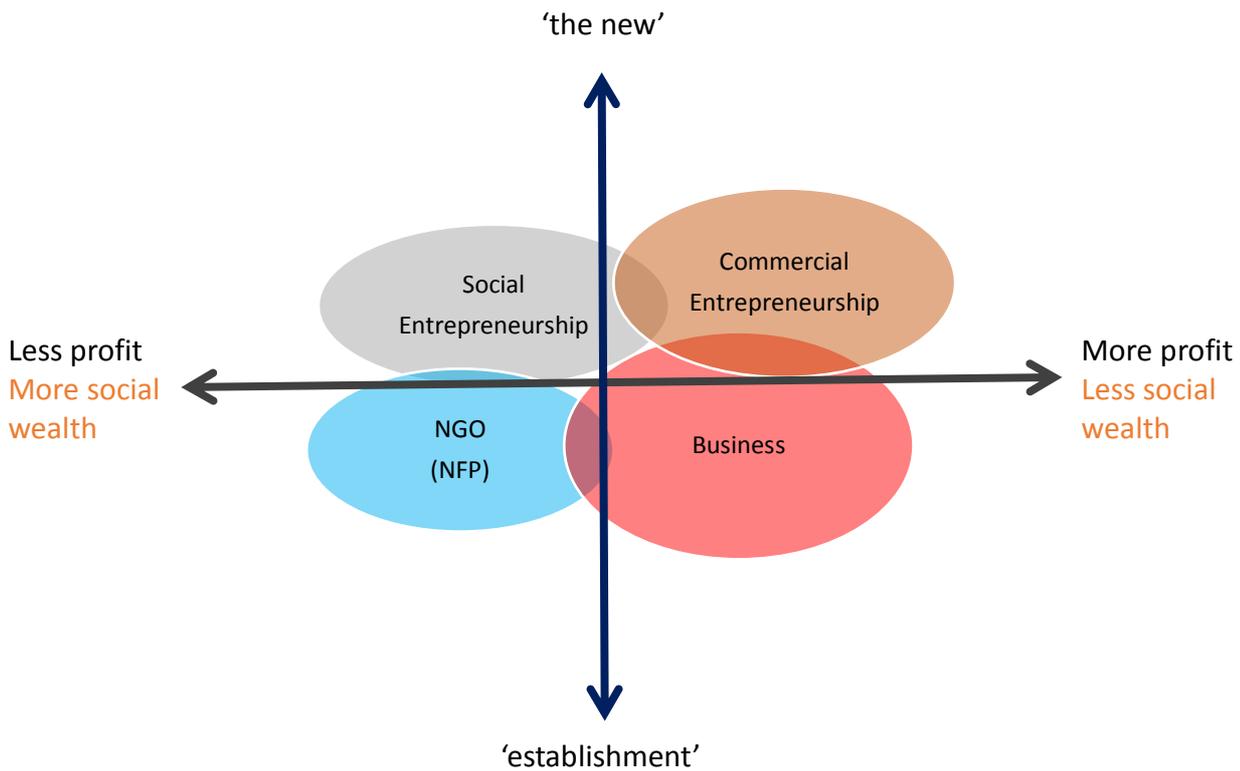
The alternative pathways to sustainable development build on public sector investment with participatory local-based social learning that allows farmers, cooperative managers, and necessity entrepreneurs to discover opportunities that propel entrepreneurial orientation in a sustainable development direction. Thus, entrepreneurship provides a change agent path to development by a dynamic path along SDGs lines. Such pathways, based on the foundational economy, will have community support and regional resilience in a world of uncertainty in which the real chance of failure needs to be embraced, supported and social learnt. Figure 2 shows the paradigm shift envisaged by this alternative SDG economic model. TL currently lies below the horizontal line with profitable business being largely public sector led and socially valuable activities being driven NGOs (mostly INGOs). This is all established economic activity that has not altered one iota since the restoration of independence. The entrepreneurial driven opportunity-based paradigm shift proposed in general terms needs to move the TL economy above the horizontal line to whatever "the new" the TL community chooses through participatory democracy. This entrepreneurship approach needs to be grass roots inspired with NGOs transforming into social enterprises above the line (e.g. KIF, Raebia, PERMATIL) and public sector fossil fuel-based business transform into sustainable private enterprises above the line (e.g. Fulton Hogan Desousa on road maintenance and Barry's Eco-Lodge on Ataúro). Hard (physical capital) and soft (human resource) infrastructure needs to be provided to such enterprises in a coordinated planned approach by the State together with donors, with the aim of them growing to critical mass for effective development.

Currently social and private entrepreneurship is very small in TL with limited absorptive capacity and social learning about business activity, a culture of short-termism that lacks change agency, complete top-down control that dissuades any long-term sustainable grass root activity, and lack of regional drive above the level of subsistence *suku* and *aldeia* activity. This non-sustainable activity observed in TL has been identified as short-term myopia which Vercelli (1998, p. 274) succinctly defines as:

One of the main reasons for the deterioration of environmental problems may be ascribed precisely to the myopia of economic agents increasingly obsessed by very short-run objectives. Short-run rationality produces a profound irrationality in the longer run. Only a broader long-run rationality may produce a process of sustainable development avoiding deep regrets.

The source of this problem is the very strong petroleum dependence in TL which is a "two-edged sword". On one side of the sword, this fossil 'fuelled' the Western economies throughout the 20th Century and underpins the existing oil-based production structures for energy and consumables that oil has been responsible for, and TL is basing its economic growth ambitions on. On the other side of the same sword, it is this oil-based global economy that has (along with coal) created global warming and resulted in all countries coming together for the climate change agreement in Paris 2015 and now all signed up in Morocco 2016 (USA withdrew in May 2017).

Figure 2: Business Approaches



Source: Adapted from Seymour (2012, p. 4)

From a national policy perspective, the resolution of this ‘two-edged sword’ is clearly spelt out by Vercelli (1998, p. 268) when he states: “...development could be considered sustainable only when generations are guaranteed a set of options at least as wide as that possessed by the current generation.” The power of this statement as a policy guide is that it underscores the need to keep viable options open, but not necessarily the continuation of any level of material consumption. The danger is that fossil fuel resource dependence creates path-dependence (or ‘lock-in’) on strategies that are unsustainable into the future.

For TL, a sustainable development policy strategy requires adoption of the type of alternative economic model suggested by Ramos-Horta and Mahar (2016). The current TL policy strategy that is clearly embedded in the 2011 SDP is based on continued dominance of an oil-based global economy. However, what has emerged starkly since 2011 is that this is an unsustainable economic development path in the context of the global oversupply of oil and gas (and related much lower oil prices), as well the 2015 Paris agreement commitments to reduce greenhouse gases. Further, the indeterminacy of accessing future oil and gas reserves by TL highlight the need in an uncertain world to broaden the options in policy strategy. As the World Bank (2016b, p. 155) has identified (perhaps optimistically in terms of the timeline):

With no new oil fields under development and current wells depleting rapidly, Timor-Leste is expected to be a post-oil country in as little as five years’ time. Oil production, exports and gross value added from the offshore oil sector will decline rapidly each year for the next few years.

In Courvisanos (2012) a paradigm shift is argued from theory. Now the observations in TL show that practically the future lies in terms of sustainable development due to limitations of the extractive industry in TL. Also with limited available oil reserves TL is facing significant

challenges to access any new oil fields. In fact the strong positive economic impacts identified by the ACIL Allen Consulting Tase Mane Report (ACIL, 2016) depend on the crucial assumption that the Greater Sunrise field will be available for TL to extract and have infrastructure investment ready for value added LNG processing once the field is legally available. The report assumes it will be legally available with employment and State revenue that begins to start flowing by 2025 (see ACIL, 2016, Figure 3.23, p. 42). However as Strating (2016) points out, “Timor-Leste appears confident that it would win in a court of law, but Australia’s intransigence renders this an increasingly moot point.” This intransigence has been long-held and ignores the basic sovereignty issue that all TL Governments and its community are united in holding sacrosanct (Cleary, 2007). For this reason, as the World Bank (2016a, p. 154) argues “Timor-Leste must employ its finite resource effectively and implement key reforms to support a more diversified economy”, thus building sovereignty from another angle; by creating a new non-fossil fuel economic structure. This will only occur if the populace is empowered to develop sustainable activities. TL must employ its finite resource effectively and implement key reforms to support a more open diversified economy with various policy options, both import-substitution and export-orientation, as set out in the suggested list above. This enables failures to be included with successes and as Winnett (2005 p. 92) argues cogently: “[w]hat society acquires by keeping options open is not just the negative avoidance of bad outcomes but also the positive good of maintaining options for future learning as more information accrues.”

Conclusion

The three questions set up at the beginning can now be briefly answered:

1. How has the Timor-Leste Government been able to harmonise the United Nation’s Sustainable Development Goals with the existing 2011-2030 Strategic Development Plan that guides policy in the economy?

Answer: SDGs are being harmonised with the SDP in a linear approach, with a short-term focus on the most critical goals as seen by the TL Government (top-down), without acknowledging the interconnected ecosystem of TL (and also interconnected with the rest of the global ecosystem). This effectively leaves the SDP unaltered from the more recent perspectives and information available since 2011, while ignoring that the world is integrated and complex across all 17 SDGs.

2. Has the harmonising process been able to specify a new transformative and innovative sustainable development path for the economy, or has the development path as set out in the 2011-2030 Strategic Development Plan remain unaltered?

Answer: No observed transformation towards a new diversified fossil fuel disinvestment future is evident. Innovation outside of fossil fuel and construction works are virtually non-existent. Import dependency continues to rise (La’o Hamutuk, 2016e, slide #33) and no increase in GDP per capita from agriculture, hospitality, manufacturing, trade and transport, and real estate sectors from 2003 to 2014 (La’o Hamutuk, 2016e, slide #43). The SDP has not been modified since 2011 (six years ago) despite additional data and information (e.g. state of climate change and continued underlying weakness of agriculture) and a new perspective (acceptance of the SDGs resolution). Well-intentioned directive for each line ministry to have their own priorities aligned to all the SDGs has remained largely ignored. There is an internal TL Government review of the SDP being undertaken in 2017, and it needs to address these concerns and modify the plan to become much more consistent with the commitment to the SDGs with a more sustainable development path emerging.

3. What are the achievements and limitations of the SDG roadmap, and how does this identify the challenges, opportunities and options to be negotiated in progressing towards

a transformative and innovative sustainable development path as specified by the Sustainable Development Goals?

Answer: Table I specifies all the achievements and limitations identified in this research. The limitations heavily outweigh the achievements. The challenges are great in driving a sustainable development agenda that would attain the SDGs, not merely as a checklist tick-box exercise, but as an instrument for transforming the TL economy. The challenge begins with taking on opportunities like the examples of small enterprise (commercial entrepreneurship) and cooperative ventures (social entrepreneurship) mentioned in this report, and building on them incrementally, based on the SDG economic model, not the SDP-based economic model. This needs grass roots entrepreneurial motivation at cooperative and individual levels for the TL economy. This must come with concerted TL Government commitment to support such a shift away from one based on fossil fuels to one based on sustainable development, or else civil society demands a new pathway based on the SDG economic model.

A question that was asked in the seminars when this report was presented needs to be addressed. The question raises the issue of why TL should even adopt the SDGs and aim for sustainable development when the rich developed world (and the ASEAN countries) have ignored all such dictums and purely aimed successfully (to some extent) in maximising economic growth. Given the very poor state of the TL economy and its microscopic carbon emission footprint, are the SDGs merely a political correct agenda by people who are well enough off to afford to feel angry about social inequality and ecological destruction?

The answer to this question has a series of critical issues that need to be addressed:

- First clause of the Vision statement of the National Development Plan 2002, and replicated in SDP states: “East Timor will be a democratic country with a vibrant traditional culture and a sustainable environment.” This clearly sees traditional culture as stewardship of the people and the land under subsistence economy which needs to be sustained in a vastly different setting from the past big growth models; a setting based on major social unfairness and huge environmental disasters existing in the world today.
- Global push for sustainable development in an interconnected world (when melting of the ice caps affects all land masses) cannot be left to others, especially when TL is one of the most dependent fossil fuel economies of the world. Further, TL’s leadership of SDGs in the g7+ fragile group means TL has ability, and indeed the moral courage, to lead much weaker economies like the Central African Republic away from corrupt violence and unsustainable greed. All such activity undermine the global ecosystem’s viability on this planet. However, the g7+ agreed indicator monitoring shows lack of long-term integrated planning by ignoring the ecological-based SDGs, acceding to the political pressure of fossil fuel dependent growth.
- Rejection of violence of all types must be the signature mark of TL given its own tragic history. The violence during colonial/exploitation and invasion/occupation times reflects global powers’ economic push for maximising economic growth (underpinned by Cold War armament production and continued militarism). USA’s own rapacious economic growth priorities underscored the need to support Indonesia during its occupation of TL. Sustainable development in TL must be seen in the context its local culture and strong memory built on a harsh past; a context that rejects axiomatically violence, both socially and ecologically.
- In economies which operate significantly through the market system, maximising economic growth can only be achieved with a massive shift of income towards the top of the income share profile of a country. That is why economic growth is pushed so strongly

by monopoly capital interests and their supporters in the State. Addressing social equality is a vital aspect of sustainable development.

- Lock-in mechanisms are built into maximising economic growth that results in lack of transformation, making it very difficult for economies to be flexible and change directions as issues arise (e.g. increased storms, rising waters, increased predatory corrupt behaviour). This is where large rich economies and global corporations who have the power and ability to address lock-in mechanisms need to provide massive technological (e.g. R&D innovation) and communal (e.g. NGO capacity building) support to poor economies like TL.
- Sustainable development changes the economic model from one solely dependent on the one capitalist market rule instrument, to a solidarity economic model (Matsui and Ikemoto, 2016). This model depends on all people in the economy performing mutual help, developing networks across communities and building dialogue and connections across the social, private and public sectors with markets operating “...as if people mattered” (Schumacher, 1974).

What unites the country – from bottom to top, west to east, female and male – is a “common civic identity” exemplified in TL in many ways, but particularly the self-determination ballot in 1999. This civic value is described by Kingsbury (2009, p. 14) as “...voluntary public identification with and cohesion around a national identity”. Soares (2016) calls this civic identity value a sense of ongoing revolution begun by the older generation in terms of “the fight to free the country” and is continuing by the younger generation in terms of “the fight to free the people”. “Now the fight to free the people from poverty and illiteracy has become a great concern for the State and all the people of Timor-Leste.” This second fight needs to be fought on a unity ticket that is underpinned by the SDGs, which all sectors of the TL society actually do support. Ramos-Horta and Mahar (2016) have argued that such an alternative economic model is essential. This report identifies the limitations of the current roadmap towards the SDGs and sets out the challenge to develop this alternative economic model for economic, social and ecological equity. Not addressing this matter immediately in this unified approach will undermine its identity forged as a historical civic value. It opens the country and its citizens to the accusation of what Soares (2016) calls “the lazy revolution” in which everyone considers the alternative too hard and simply defends the current unsustainable development positions.

Finally, exploring new modes of coordination and cooperation between the actors implied in the challenges set up above will contribute to building a socially and ecological sustainability model of innovation. This alternative SDG economic model will organically emerge from which public policies can be combined with niche private sector and cooperative investments to develop new sectors of the economy related to sustainability. Such an approach needs to be applied to TL for the necessary paradigm shift (or transformation) from the top-down ‘autocratic’ Strategic Development Plan 2011-2030 to the bottom-up ‘democratic’ power of the September 2015 SDGs. There are two pathways to this SDG economic model, via government reform or via civil society demanding change. The exact details of how this challenge is executed is up to the people of TL itself.

Appendix A: The 17 SDGs

- Goal 1. **No Poverty:** End poverty in all its forms everywhere
- Goal 2. **No Hunger:** End hunger, achieve food security and improved nutrition and promote sustainable agriculture
- Goal 3. **Good Health:** Ensure healthy lives and promote well-being for all at all ages
- Goal 4. **Quality Education:** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- Goal 5. **Gender Equality:** Achieve gender equality and empower all women and girls
- Goal 6. **Clean Water and Sanitation:** Ensure availability and sustainable management of water and sanitation for all
- Goal 7. **Renewable Energy:** Ensure access to affordable, reliable, sustainable and modern energy for all
- Goal 8. **Good Jobs and Economic Growth:** Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- Goal 9. **Innovation and Infrastructure:** Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
- Goal 10. **Reduced Inequalities:** Reduce inequality within and among countries
- Goal 11. **Sustainable Cities and Communities:** Make cities and human settlements inclusive, safe, resilient and sustainable
- Goal 12. **Responsible Consumption:** Ensure sustainable consumption and production patterns
- Goal 13. **Climate Action:** Take urgent action to combat climate change and its impacts
- Goal 14. **Life below Water:** Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- Goal 15. **Life on Land:** Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
- Goal 16. **Peace and Justice:** Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
- Goal 17. **Partnerships for the Goals:** Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

Appendix B: The Roadmap

On the 10 August 2016 at Caicoli Campus of UNTL the Prime Minister, His Excellency Dr. Rui Maria de Araújo (PM) articulated the roadmap for the SDGs and how they are prioritised in the context of the existing 2011-2030 Strategic Development Plan (SDP). As stated in this speech (and repeated many times by the PM during late 2016) the roadmap consists of:

1. Short-term 2011-2015: Human development goals (SDGs N° 2, 4, 9; with 5, 3, 6)
2. Medium-term 2016-2020: Economic development goals (SDGs N° 8, 10, 11, 12)
3. Long-term 2021-2030: Environment protection goals (SDGs N° 7, 13, 14, 15)
4. Ultimately, we want to eliminate poverty, strengthen the basis of our economy and coexist in harmony with our environment.
5. Achieving all these goals will necessarily result in poverty elimination, Goal 1.
6. Achieving these goals will also ensure peace and stability, creating a positive feedback that will strengthen the foundations of our development. Education and good health leads to productive workforce, stronger institutions, and economic growth, which then reduces the risks of conflict and instability, creating the conditions for further improvement in human development, economic development, and so on. Ultimately, when we have a well-educated and healthy population, when we have strong economic foundations and growth, we will be more effective in our measures to protect our environment and arrest climate change trends.
7. However, this does not mean that we will wait until that day in that distance period to focus on other goals, on the goals for our planet. This is the plan for the government as a whole, the joint effort between whole of government. Individually, each of our line ministries also have their own priorities, aligned with the SDGs, which I will present to you later.
8. Then again, as we are currently looking into revising our SDP, this roadmap may change. But we can be certain that the goals for the short-term, the human development goals, will stay more or less the same.

(de Araújo, 2016)

At the g7+ global conference on 21-23 May 2017, the TL Government said in its press release (Pereira, 2017) that it is was “launching” the roadmap and presented a slightly nuanced version of the 2016 roadmap. The essential new aspects in this 2017 version compared to 2016 version, are:

- (i) The three specified time periods still appear in the explainer (RDTL, 2017), but not on the infographic version. The latter only has the 2030 end date.
- (ii) The infographic roadmap shows a linear approach with “People” first, “Prosperity” second and “Planet” third, on the way to 2030 (the three “Ps”).
- (iii) SDG #5 “Gender Equality” comes out of “Short-term” and is placed as a cross-cutting goal across all goals over the three “Ps”.
- (iv) SDG #16 “Peace and Justice and Strong Institutions” is no longer the ultimate goal but another cross-cutting goal across all goals over the three “Ps”.
- (v) SDG #17 “Partnerships for the Goals”, which was completely missing in the 2016 version, is yet another cross-cutting goal across all goals over the three “Ps”.

Appendix C: Detail of the Three Elements in the Eco-sustainable Framework and its Application to Timor-Leste

Each of first three rows in Figure 1 represents one of the three elements that are required for sustainable development to be introduced into a specific region or country. Each element and its planning and implementation is explained below in the context of TL. The fourth row illustrates how to apply this three element framework to public policy. The flowchart shown on the bottom of Figure 1 indicates the direction of policy deliberations and forms the basic structure of Table 1 when analysing the achievements and limitations of TL's roadmap for the SDGs.

Below are the three elements described in detail in relation to the circumstances in TL:

Element #1 – Social and ecological sustainability rules

A country needs to have agreed sustainability rules to be able to operate this framework. TL is an outstanding country example of this initial element. The TL Government resolved to adopt the UN SDGs as the country's sustainability rules two days before it came into operation by the UN. In this respect, the country's leaders showed the same "self-efficacy and autonomy" praised by Kihara-Hunt (2016) at the Nobel Peace Centre in Oslo when referring to the East Timorese struggle during the 20 year Indonesian occupation. Accepting this element of the framework is the origin of the review covered in this report.

Investment planning criteria: Moving across to the centre column, this part of the framework takes the sustainability rules (SDGs) and identifies how the rules can be applied to the planning mechanism that drives the investment in the public sector. For the (SDGs) rules to be applied, the public infrastructure investment and complementary development projects are required to meet three specified criteria that are included in the planning process. First, from a social inclusion perspective, the rural/urban divide needs to be addressed in a way that is seen as fair across the country, given the inevitable disadvantages suffered by rural vis-à-vis urban communities. Second, planned investment needs to be sustained over a long period into the future (i.e. life of the investment). Wallner et al. (1996) describe this as "sustainable long-term carrying capacity" which measures the ability of infrastructure or other resources to function without social overloading (e.g. severe traffic congestion) or ecological limits (e.g. pollution). Third criteria aims to ensure that investment in new capital stock has strong resource-saving capacity through effective maintenance and repair of equipment and infrastructure, best utilisation of the stock through skilled human operation, economical use of raw materials, and elimination of faculty operations or products (Kalecki, 1992).

On an initial scan of the TL situation in respect to the investment planning criteria, there are significant challenges in addressing all three criteria. The rural/urban divide is huge as the poverty figures note. Carrying capacity of infrastructure has been difficult to sustain with roads, power, internet, and more; the difficult terrain and weather adding greatly to this challenge. On resource-saving the evidence is mixed. The ability of East Timorese to be ingenious with limited resources by repairing and recycling is remarkable, but lack of human capacity skills and less than economical use of resources through waste and faulty operation undermine the resource-saving efforts.

Supporting implementation strategies for innovation: The major task is to develop and communicate the appropriate and agreed sustainability rules. In TL these rules have been approved and legislated as the SDGs, and the PM is a great advocate of the SDGs, speaking around the country personally and passionately on how the country needs to address them and that the government is committed to them. A media release by the PM (RDTL, 2016b) is indicative of this strong commitment when it states:

...the budget had been developed mindful of six key factors: fiscal sustainability, the capacity for quality budget execution, the continued implementation of the second phase of the Strategic Development Plan, integration of the United Nations Sustainable Development Goals, the impact of next year's Presidential and Parliamentary elections and the global economic outlook for 2017.

Element #2 – Perspective planning

After the rules have been agreed to, and the criteria and communication of these rules have been established, it is time to plan how to implement the sustainability rules. The Figure 1 eco-sustainable framework has built into it an instrumental approach to planning (see Lowe, 1976) which is based on working backwards from the agreed sustainable development vision. Ask where the country should be

in 2030 when the SDG Agenda ends, then work backwards locking in tasks and targets to be achieved at various intervals back to the present. In TL, if 2030 will see SDGs #1 and #16 being achieved, then there will be no poverty and a peaceful and inclusive society will be a reality. Appendix B shows the TL roadmap to sustainable development. This roadmap has a clear instrumental approach. The roadmap identifies three sets of SDGs: human (social), economic and environmental with each set marked out for achievement in the short- (to 2015), medium- (to 2020) and long- (to 2030) terms, consistent with the SDP strategy to 2030 also. This is a solid planning approach; except that by breaking down the SDGs into three separate levels of activity over three time periods, the approach loses the critical “integrated and indivisible” holistic ecosystem that is expressed specifically in the UN SDGs resolution.

In the eco-sustainable framework, the Lowe instrumental approach is set within a perspective planning strategy which requires short-term adjustments, as required over time (Kalecki, 1992). Perspective planning necessitates that any long-term plan must be subject to incremental adjustments once the “perspective” becomes clearer as the plan progresses forward. Over time, as more information is known about the future and evaluation of the plan’s achievements so far as they can be assessed, the perspective of the plan and the attainment of the targets need to be adjusted. A perspective plan must be continually assessed at every short-term end-point to learn from the success and failures at these points and build in better strategies based on this learning. Thus, a perspective plan is a social learning exercise itself. The next two columns in Figure 1 provide the means by which to assess social learning in the TL SDGs.

Investment planning criteria: The centre column of the framework under perspective planning identifies what is required as criteria in investment planning. There are two criteria. The first is iterative flexible *ex-ante* planning (Kalecki, 1992). All plans are ‘*ex-ante*’, in that they look into the uncertain future. Assessing at various short-term end-points and then flexibly adjusting the strategies (or short-term policies) will allow more accuracy in achieving targets. Such accuracy can occur because the future is better known as the country moves forward, and learning from past planning can also be achieved and built in to the next short-term end-point. In the context of TL, two issues can be noted in terms of investment planning that are a challenge to be able to plan iteratively. One, the uncertainty of the oil/gas revenue into the future, both in terms of prices which are determined by a global demand and supply situation, and the availability of oil/gas from existing fields and legal access to new reserves. Two, is the commitment by all in government (both Parliament and the Executive) to the long-term SDP which extends to 2030. In this plan there is no provision for adjustment or flexibility and it was devised four years before the SDGs were ever thought off.

The second criteria in investment planning is “bottom-up” in both monitoring and evaluating the policies implemented in the plan and their outcomes (Wallner et al., 1996). As Hodge and Midmore (2008, p. 36) state in the conclusion to their study of policy evaluation in rural development and environmental systems:

Perhaps this is the fundamental challenge to combine local level evaluation that fully reflects the complexity and diversity of rural areas, and yet to convey the critical information back up to higher levels to permit balanced and informed decisions to be taken about resource allocation across different regions and even countries.

This is how social learning occurs, through the bottom-up approach to planning. By seeking the ‘crew’ to provide feedback on how the sustainability rules are being implemented. Also by trialling activities with feedback from users as to whether they meet their needs. Such bottom-up evaluation works better than using top-down bureaucratic based intelligence evaluation. This criteria leads to the next step in the framework which is evident across in the right-hand column of Figure 1.

Supporting implementation strategies for innovation: To gain the information necessary for monitoring, evaluating and adapting the policies implemented by the sustainability rules, the government needs to establish local authorities and regional bodies, as well as support from already established community centres, CSOs and university research. These bodies, organisations and researchers should be encouraged to provide critical bottom-up assessment and social learning on the success and failure of actions by public, private and NGOs in addressing the SDGs. The test from the standpoint of the TL Government is whether such a perspective planning approach to implementing and evaluating the

SDGs is viable and realistic in the context of past and current policies for development that have locked in mechanisms which dictate a certain path 'big' economic growth path, and what this lock-in implies for future possible crises. This is a critical aspect of the review report.

Element #3 – Cumulative effective demand

Elements #1 and #2 focus on the supply side of the economy; in other words, the government sets up to 'produce' the sustainable development it is committed to. However, as the saying goes: "You can lead a horse to water, but you cannot make it drink." This means the 'horse' must want to drink; or to actual 'demand' what sustainability aims to deliver. For example, does the public want SDG #12 on responsible (or sustainable) consumption? How does the public feel about not throwing waste on the street (carrying waste with them) or not accepting plastic bags for shopping (instead bringing their own bags). There is much on the supply side the government can do by setting up waste recycling bins and centres, and having shoppers pay for plastic bags. However, the public needs to support such activities, instead of contaminating recycling bins and accepting the extra cost of shopping bags which then exacerbates poverty in the country.

Borrowing from the 'cumulative causation' literature (Ricoy, 1987), the eco-sustainable framework provides an approach for growth of demand that is "effective" (i.e. people are willing to buy). Effective demand is latent and always waiting for the entrepreneur to exploit. This happens when the entrepreneur taps into need or desire by the consumer. Demand is stimulated by new enterprise spending on investment in plant and equipment to produce, and by public redistributive policies to ensure the surplus does not remain in a few hands. Then this will enable spending by the people you want to buy. A "niche" market arises, but the skill of the successful entrepreneur (and his employees) is to cumulatively build on that market to create strong demand expansion (Geels, 2005). Creating stronger demand happens by the evolution of the market from small niche, to one with a large critical mass that provides import-substitution and export demand. This is what is needed in TL so as to build a private sector that is virtually non-existent (Inder and Cornwell, 2016). However, given the commitment to the SDGs, this cumulative demand build-up needs to be along guidelines for sustainable development discussed in Element #1 above.

Investment planning criteria: The centre column of the framework under cumulative effective demand identifies the two criteria for investment planning by the nascent private sector. One is the need to build a strong niche market base for a product or service that has potential to grow cumulatively. As a good example of the opposite, there is no strong market base for yet another small kiosk to open in TL, yet many small loans are provided for such an enterprise. Investment through the TL financial system should be focused on lending to potential new markets that can expand the private sector. The other criteria is to build up experience for new customers who are prepared to try the new eco-sustainable innovations and provide feedback as users that can lead the market on a path to expansion, but with sustainable development guidelines across the nation that the broad community helps to create and maintain.

Supporting implementation strategies for innovation: To be successful in investing in new niche markets and build cumulatively strong demand (both in the country and externally), public policy needs to support strategies that enable such markets to arise and grow. The TL Government needs to develop and manage public network systems for private and social venture adoption (examples: Timor Coffee Association to create national coffee brand, agricultural cooperatives that shift farming from unsustainable subsistence to sustainable commercial, women's centres to develop new market ideas). Further public support is required through encouraging and supporting finance availability (particularly microfinance for new sustainable ideas) and user feedback from customers back to sellers and producers to improve markets in concert with the SDGs.

Appendix D: 2011-2030 SDP Sustainable Development Targets

1. The National Development Agency to be responsible for ensuring the allocation of carbon credits necessary for projects to develop.
2. Install solar and wind projects that could be providing 10% of Timor-Leste energy needs by 2012.
3. Office of Renewable Resources to be established
4. By 2020 at least half of energy needs to be provided by renewable energy sources
5. Linking sites that already have diesel generators and small local networks to the nationwide network and providing renewable energy supplies to more remote areas unable to access the grid
6. Current environmental laws and regulations to be enforced
7. Prepare comprehensive environmental protection and conservation legislation meet our constitutional and international obligations
8. National Program of Adaptation to Climate Change
9. Designated National Authority for the Mechanisms of the Kyoto Protocol operational by 2012
10. National Climate Change Centre to be established by 2015
11. Forestry Management Plan to be prepared to promote reforestation and sustainable land management practices
12. A National Bamboo Policy and Marketing Strategy to be prepared to include the promotion of bamboo cultivation for reforestation and erosion control purposes
13. Community-based nurseries to be supported to plant one million trees a year
14. Policy for managing watershed areas and coastal zones to be developed
15. Introduce special forestry legislation backed by improved land tenure arrangements
16. Undertaking reforestation in all degraded areas, especially in sloping areas surrounding Dili
17. Introduce programs to reduce forest or grass burning practices during the dry season
18. Replace firewood use with other energy sources
19. Enforce environmental laws and forest laws to control forest degrading activities
20. Establish an environmental laboratory to conduct tests and carrying out environmental auditing, monitoring and evaluation of pollution for all activities in all districts
21. Regulations to be introduced so that polluters can be fined for damage caused by their actions
22. Air pollution in Dili to be addressed by campaigns to reduce forest fires around the city
23. Household rubbish bins to be provided for waste collection in urban areas
24. Heavy oil to be collected by tanks for reuse, recycling or disposal in the regions and in Dili
25. Campaign to reduce the amount of plastic bags with alternative paper bags
26. Recycling scheme developed for plastic bottles
27. 75% of Timor-Leste's rural population by 2020 to have access to safe, reliable and sustainable water
28. 40% of rural communities by 2020 to have significantly improved sanitation facilities
29. Installation of approximately 400 water systems for 25,000 rural households in the next five years (at 80 systems per year)
30. Construction of community owned latrines
31. Recruitment of 80 sub-district water and sanitation facilitators for suku
32. Major investment in rehabilitating and extending irrigation systems and improving water storage in rural areas

Appendix E: Summary of Primary Data Collection Sources

Below are set out interviews, field trips and events in Timor-Leste during the period, 25 July to 31 November 2016. The lists are all set out in chronological order covering this period.

Interviews

Professor Doutor Francisco Miguel Martins, Rector, UNTL: 26 July

Fernando Baptista Anuno, Dean, Economics and Management, UNTL: 27 July

Vicente de Paulo Correia, Director, Centro Nacional de Investigação Científica (CNIC) [National Center for Scientific Research], UNTL: 1 August and 2 September

Antero Benedito da Silva, Director, Peace, Conflict and Social Studies Institute (Peace Centre), UNTL: 12 August

Jerry Desousa, Executive Director, Fulton Hogan Desousa: 23 August and many subsequent discussions

Domingas dos Reis, Lecturer, Economics and Management: 26 August and 14 October

Pat Walsh, Advisory to TL Government on Centro Nacional Chega! (Centro Chega!): 29 August, 8 October and 17 November

Alex Tilman, Coordinator of the PM's SDG Implementation Strategy Working Group: 29 August and 2 December

Xisto Martins, Executive Director; Mateus Soares Maia, Program Director, Raebia Timor-Leste, 5 September

Helen Hill, Professor, UNTL; Sandy Fitz, PhD student, University of Technology Sydney: 5 September

Deborah Cummins, United Nations Population Fund (UNFPA): 5 September

Noemí Perez-Vásquez, PhD student, SOAS University of London: 12 September

Francis Thomas, Managing Director, Deloitte Unipessoal Lda, Country Managing Partner (Timor-Leste), Deloitte Touche Tohmatsu: 13 September

Harry Hall, Second Secretariat, Australian Embassy: 13 September

Abel dos Santos, PhD student, Lisbon and Community Development Lecturer, UNTL: 13 September

Augusto Da Conceição Soares, Rector; Jviano Xavier, Head, Department of Development Studies; Domingos Pedro, Lecturer, Entrepreneurship, East Timor Institute of Business (IOB): 14 September

Sam Porter, Economic Advisor, Office of the Minister of State, Coordinating Minister of Economic Affairs (MECAE): 16 September

Tracey Morgan, British lawyer formerly with Organization for Migration, Dili: 22 September and 6 December, as well as and many other informal discussions

Senora Aguida Mendonca, Ainaro Municipal Administrator: 23 September

Sr. Jose Pina Cardoso (late), Cova Lima Municipal Administrator: 23 September

Alberto Barros, Director, Centro Comunidade, Cova Lima: 23 September

Paulo da Cunha, Artist, Arte Ramelau, Ainaro: 24 September

Brett Inder, Economist, Monash University, Australia: 26 September

Gianna Bonis-Profumo, PhD student, Charles Darwin University, Australia: 26 September and 3 November

Dionísio Babo Soares, Minister of State, Coordinator of State Administration Affairs and Justice, and Minister of State Administration: 29 September

Bruno, Chief Engineer, Tono Bridge Construction, Pante Macassar, Oé-Cusse: 30 September

Helen Hill, Professor, UNTL: 2 October and many subsequent discussions

Anwar Alsaid, Jordanian aid worker at World Bank Group: 3 October and many subsequent discussions

Bob Quiggan, former Australian aid worker at Ministry of Finance: 9 October

Merve Hosgelen, Project Manager Human Development Report, UNDP: 19 October

Jenito Santana, CEO of KSI farmers' cooperative: 20 October

Alfredo Pires, Minister of Petroleum and Mineral Resources: 20 October

Jennifer Knox, Leli Institute English teacher: 20 October

Victor Soares, Public Policy lecturer, UNTL: 25 October and many other informal discussions

António Augusto Guterres, Baucau Municipal Administrator (next day installed as Baucau President): 25 October

Padre Mario Cabrel, Manager, Credit Union of Baucau: 25 October

Margie Beck, Co-ordinator, ICFP (Marist Brothers primary teaching education college): 25 October

Father Rui, Manager, Salesian Higher Secondary School, Fatumaca: 26 October

Chris R. Walker, PhD student, University of Halifax, Canada: 27 October and many subsequent discussions

Father Martinho G.S. Gusmão, Parish priest, Manatuto: 28 October

Francisco da Costa Monteiro, CEO Timor Gap EP: 31 October

Mark Notaras, co-owner and founder of Agora restaurant and Timor Food Lab: 10 November

Bobby Lay, CEO of Timor Global Company: 10 November and 13 December

Arcanjo da Silva, Executive Director, TradeInvest Timor-Leste: 11 November

Niall Almond, researcher, La'õ Hamutuk: 13 November and many subsequent discussions

Stephen Judson, former finance officer, MorisRask: 24 November

Fatima Elsheikh, PM's SDG Implementation Strategy Working Group and UNDP: 2 December

Juvinal Dias, researcher, La'õ Hamutuk: 9 December

Tomas Freitas, UNTL economic teacher: 12 November

Alberto Martins Guterres, Vice President UNAER (KSI) and coordinator Batista at Maudio cooperative market garden: 13 December

Bento Salsinha, Coordinator Sakoko coffee plantation: 13 December

Adao Soares Barbosa, Director, Center for Climate Change and Biodiversity, UNTL: 16 December

Field Trips

20-21 August: Ataúro Island just off Dili by Dragon Star riverboat, stayed at Barry's Eco-Lodge. Examined tourism and general development on the island.

2 September: Village outside Hera (which wants to be called Manulori). Conducted by Department of Community Development, UNTL and Professor Antero da Silva as part of a presentation to ten International Relations students visiting from Japan.

17 September: Visit with Matias to Raebia project village Faturasa, in sub-municipality of Remexio, municipality (district) of Aileu. View and appreciate resilient agriculture with biodiversity in a village which is basically subsistence farming. Dominggos, as the champion in the village, explained all the processes through the village.

23-24 September: Trip to Ainaro and Suai with Matias. Discussions with municipal administrators of Ainaro and Cova Lima, Director of Cova Lima Centro Comunidade and artist Arte Ramelau. Viewed relative development in both municipalities (very different).

30 September-1 October: Trip to Oé-Cusse by Dragon Star riverboat to view ZEESM TL developments and state of underdevelopment of the enclave. Discussions with Chief of Police Arnaldo, Chief Engineer Tono Bridge, Bruno and Microlet hire driver.

12 October: Travelled to Waterfall Fatisi on the new road to Ailieu with driver Matias to view new massive road constructions.

25-26 October: Trip to Manatuto and Baucau with Matias. Discussions with municipal administrator of Baucau, Manager Credit Union of Baucau, Primary Education College and Salesian College. View developments, including site of Cement Factory. Observe inauguration ceremonies of President of Baucau region and regional administrator of Manatuto (26th).

29 October: Tour of Dili with Matias Boavida: First round of *suku* elections; Tibar port facilities; Pope John Paul II park/statute that commemorates his visit in 12 October 1989; Tasitolo (Taci Tolu) lakes (three seas) and beach; Nicolau Lobato, 1978 dead Falantil leader; Santa Cruz massacre statute; 5th May 1999 statute representing decision to have a referendum in August same year.

2-4 December: Trip to Lautém municipality with Carmel Hurley, Chris Walker and Shayla Babo Ribeiro. Spoke to young student's group at Manatuto with Victor Soares (2nd). View Lospalos, Lene Hara Cave, Pousada at Mehara, Tutuala, Jaco Island and Com to check out development, accommodation and tourism.

13 December: Trip to Timor Global coffee processing and KSI cooperative farms in Ermera with Daniel Carmo (coordinator of KSI farms in Ermera): Visit Timor Global with Bobby Lay on the processing of coffee and Timor Vita vitamin child supplement. Then two KSI farms – Maudio market gardens at Gleno and Sakoko coffee plantation. Also visited Department of Community Development (UNTL) student tourism project at Lihulu Lake and Bandeira Waterfall at Era-Ulu village.

Events

26 July: Rotary Club of Dili weekly meeting at Timor Plaza 5th Floor, 7pm with Helen Hill; appreciation for the extensive work of many Australian Rotary clubs are doing in TL in many community development small projects (clean beach, set up recycling, assist in local hospital, etc.), and talk on need to bring Portuguese *malae* into the Rotary Club of Dili

27-28 July: 2nd International Conference on the Production of Scientific Knowledge in Timor-Leste, Liceu Campus, UNTL.

1-5 August: ACSC/APF ASEAN People's Forum 2016 held at various locations in Dili. Notably participated in La'o Hamutuk organised theme session on *Implications of ASEAN Membership and Joining the ASEAN Economic Community for Timor-Leste* (1st). Auditorium, Liceu Campus and Closing Ceremony at Ministry of Sports, 6-8pm with José Ramos-Horta speaking and Ego Lemos singing.

2 August: Rotary Club of Dili weekly meeting at Timor Plaza 5th Floor, 7pm with Helen Hill; Ego Lemos as guest speaker on the School Gardens program he is implementing in TL primary schools.

9 August: Inaugural TL Social and Solidarity Economics (SSE) meeting at La'o Hamutuk offices, 7pm. Presentation by Malaysian researcher, Jun-E Tan on nature of SSE.

10 August: Seminar on Sustainable Development and Timor-Leste, 9.30am Caicoli Campus, UNTL. Speakers: Prime Minister, Dr Rui Maria de Araújo on *The Implementation of the Sustainable Development Goals (SDGs) in Timor Leste*, and Jerry Courvisanos on *A Framework for Economic and Sustainable Development Policies in Developing Economies*.

13 August: Batak Cultural Event, Delta Nova, 7-10pm – Batak is a region around Lake Toba in North Sumatra, Indonesia. Guest of honour Xanana Gusmão (CNRT President, Minister of Planning and Strategic Investment and Leader of the TL Timor Treaty Negotiations Team).

16 August: Seminar by Lil Chen, PhD student, University of Florida on *Silence of the Women in Peacekeeping at Timor-Leste*, Peace Centre, UNTL, 10-12am.

17-18 August: 5th Conference on Deconcentration, Administrative Decentralisation and Local Government (Power), Hotel Timor, Dili.

25 August: Adjunct Associate Prof. Edmund Sim (lawyer for Appleton Luff who advises TL Government on TL's application to accession into ASEAN). Department of Foreign Affairs (Sala Nobre do MNEC), 9.30-11.30am. Lecture to UNTL law students: *The Role of Law in ASEAN and its implications for Timor-Leste's application to join ASEAN*.

26 August: Adjunct Associate Prof. Edmund Sim on *Update on TL's application to join ASEAN*, The Asia-Foundation Policy Leaders Forum, Asia-Foundation offices, 2-4.30 pm.

29 August: Referendum Day ceremony on Caicoli Campus, UNTL, 2-3pm.

30 August: Referendum Day evening dinner and dance at Acaite Restaurant with Jerry Desousa (inviter) and niece Leila, Matias, Harry Hall and wife Vrenda (Australian Embassy)

3 September: Pat Walsh book launch *Stormy With a Chance of Fried Rice: Twelve Months in Jakarta*, Hotel Central book shop, 10am.

6 September: Workshop on Fiscal Reform in Timor-Leste: Draft VAT Law and Revised Tax Direct Act, Directorate General Office, Tax Office Conference Room, 9.30am-4.30pm. Presentation by Fernanda Borges, Fiscal Reform Coordinator, Fiscal Reform Commission, Ministry of Finance.

7 September: Seminar by Noemí Perez-Vásquez, PhD student, SOAS London, *The Impact of the UN on Women's Access to Justice in Post-Conflict Societies*, Peace Centre, UNTL, 5.30-7pm.

8 September: Presentation by Jerry Courvisanos to the PM's SDG Implementation Working Group, *SDG Implementation Framework: Possible Application to Timor-Leste*, 10am-12noon Palacio Governo, Dili (15 participants).

9 September: First meeting of all researchers in the new restructured CNIC. Introduction on research by Jerry Courvisanos, CNIC seminar room Cialcoli Campus 10am-12noon.

12 September: Recording at the Resistance Museum of RTTL TV debate on *Higher Education in Timor-Leste and its Relevance to the Labour Market*, 10am-12noon. Chair: Matias Boavida.

13 September: Start of Tour de Timor from in front of the Palacio Governo, 7.15am with Matias Boavida.

_____ : Second SSE meeting, Fiorentino Soares Ferreira from ANPM (manages energy and petroleum) presentation on *Mapping out the Potentials in Timor-Leste: A Case Study from Natural Resources Sector*, Knuva Buka Hatene LifeSkills room, Mandarin, 6-8pm.

15 September: Ha'u hananu Samba, Brazilian samba band, Esplanda, 8-10pm.

20 September: Opening of the Fifth Legislative Session, at Palacio Governo, Parliament Building, 10am-12.30pm; with the President Taur Matan Ruak (TMR) presiding with speeches from the President of the National Parliament (Adérito Hugo Da Costa), Bench leaders of the four parliamentary political parties, and TMR.

22 September: Seminar on the Draft VAT Law organised by La'õ Hamutuk at HAK Association offices, Farol, 9am-12.30pm. Two presentations: Juvinal Dias from La'õ Hamutuk (*The VAT Law should not prevent poor people from accessing the economy*), and Camille Wauters from UN-Women (*Impacts of the VAT Law: a gender perspective*); response from Fernanda Borges. (*Advantages of the VAT Law for Timor-Leste*).

27 September: Seminar by Prof. Brett Inder (Monash University), *Measuring Undernutrition among Young Children in TL*, Sparrow Force House, Dili, 9.30-11.30am.

7 October: Presentation by Jerry Courvisanos, *Research Methodology*, workshop for CNIC researchers, CNIC seminar room Caicoli Campus, 10am-12noon.

_____ : Opening Plenary Session of International Conference in Celebration of the 20th Anniversary of the Nobel Peace Prize to Two Sons of Timor-Leste (Ramos-Horta and Belo), Department of Foreign Affairs (Sala Nobre do MNEC), 3-5.30pm. Muhammad Yunus (Noble Peace Prize 2006), Rev. Bishop Gunnar Stålsett (Norwegian Nobel Committee and Organisator of all churches in support of TL independence), Dr. Adama Dieng (UN Special Adviser for the Prevention of Genocide), Sir Richard Roberts (Noble Physiology and Medicine Prize 1993), Prof. Martin Hellman (cryptologist, Turing Award 2015), Prof. Finn Kydland (Noble Economics Prize 2004) and Kailash Satyarthi (Noble Peace Prize 2014); with José Ramos-Horta responding at the end.

8 October: Roundtable Discussion on Business, Economics and Finance, Timor Plaza Hotel, 4th Floor, 9.30am-12noon. Speakers, Yunus, Kydland, Dr. Roger Moser (Associate Professor of International Management and Timor Foundation board member) and Prof. Jenny Gordon (Productivity Commission advisor, ANU).

_____ : Seminar by Dr. Adama Dieng, *Management of Diversity by the State: Vital to Avoid Genocide*, Hotel Novo Turismo, 3-4pm.

18 October: Third SSE meeting, Prof. Antero Benedito da Silva on *Fulidaidai, the local Maubere cultural version of the cooperative movement*, and Jerry Courvisanos on *Definition and Meaning of Social and Solidarity Economy*, Knuva Buka Hatene LifeSkills room, Mandarin, 6-9pm.

21 October: European Film Festival, *Karol* (Polish: Life of John Paul II prior to becoming Pope), Fundação Oriente, 7.15-10.15pm.

22 October: First national student conference organised by Organização Popular de Juventude Timor – Eskola de Maubere (OPJT-EM). Presentation by Jerry Courvisanos, on *The New Place of Socialism and its Contemporary Challenges* with Elisa (Uka) Pinto translating into Tetum; Armindo Maia on *Four Phases of Education and Nationalism in TL*; and panel discussion, Secretary of State for Youth and Sport building, Dili, 10am-1pm.

_____ : European Film Festival, *Horizon Beautiful* (German: On corrupt FIFA official in Africa), Fundação Oriente, 7.15-9.15pm.

27 October: Seminar by Chris Moore (US land dispute lawyer) on *Challenges of Addressing and Resolving Post-Colonial and Post-Conflict Land Issues and Disputes*, America House, Liceu Campus, UNTL, 3-5pm.

29 October: Anwar Alsaïd farewell at Casa do Sândalo dinner with Jennifer Knox, Bangladesh “Doctor”, Proga, Peter and Tammy, and Casa manager Lassina Toure, 7-9pm.

31 October, 1-2 November: Mexican Exhibition at Casa do Sândalo organised by owner Mexican Consulate Ivan (Brazilian) and Andreas (Mexican at UNDP).

3 November: Seminar by Victoria Mack on the *Role of Landcare in Developing Economies*, Knuu Buka Hatene LifeSkills room, 4-5.30pm.

9 November: Seminar at by Prof. Adrian Schoo (Flinders University) on *Training Health Professionals: Is there a fitting formula for TL?* Liceu Campus, 4-5.30pm.

10 November: Presentation by Jerry Courvisanos, *Building Entrepreneurship in TL*, Institute of Business (IOB), Dili, 9.30-11.30am.

_____ : Seminar by Prof. Chris Hocking (La Trobe University) on *Australian Universities and Sustainability Curricula: Sustainability Education in Universities*, Liceu Campus, 4-5.30pm.

11 November: Presentation by Jerry Courvisanos, *How to Submit a Research Proposal to CNIC*, workshop for CNIC researchers, CNIC seminar room Caicoli Campus, 10am-12noon.

12 November: Commemoration Ceremony Santa Cruz Massacre at the Cemetery with Chris Walker and Prof. Antero (who translated). Speaking in English: Allan Nairn (US journalist) and Max Stahl (British cameraman), 9.30am-2.30pm.

13 November: Screening of Max Stahl’s uncut one-hour film of the Santa Cruz Massacre, Xanana Reading Room, 6-8.30pm.

16 November: Opening of the US Embassy room for study and research at UNTL, “Uma-Amerika” by the US Ambassador to TL, Karen Clark Stanton, 3-3.30pm.

_____ : Competition “What’s Your Big Idea?”, Women’s Entrepreneurship Week organised by Chamber of Commerce and Industry Timor-Leste (CCITL), CEO Kathleen Goncalves and six female students (5 UNTL; 1 IOB) present entrepreneurial ideas using the Business Model Generation Canvas template, Resistance Museum, Dili, 3.30-5pm.

17 November: 16th Anniversary of the establishment of UNTL, Rector, Francisco Miguel Martins, Central Campus, Dili, 3-4pm.

18 November: Presentation of certificates to graduates from the Department of Public Policy, with Victor Soares and Antero da Silva, Caicoli Campus, 2-4pm.

19 November: Wedding Antonio Crisanto Barreto Mota (Santo) and Natalia Pinto (Nata), St. Antonio Motael Church and Nelio Restauarant (reception), 10am-5pm. Santo is administrator of CNIC.

23 November: g7+ Technical Meeting: Progress on the Implementation of the SDGs, led by Dr. Helda da Costa (g7+ General Secretary) and Xanana Gusmão (g7+ Eminent Person), Novo Turismo Resort & Spa, Dili, 9am-5pm.

24 November: Postgraduate Graduation Ceremony, Signing of MOU between FedUni and UNTL (Jerry Courvisanos and Francisco Miguel Martins), Dili Convention Centre, 10am-12noon.

25 November: Undergraduate Graduation Ceremony, Jerry Courvisanos presents Oratio Sapientia (Wisdom Speech), Dili Convention Centre, 10am-12noon.

29 November: Public Lecture by Gavin Briggs (Curtin University) on *Living Among Energy Giants: What are Timor-Leste's Energy Opportunities?* Regional House seminar room, Kuluhun Kraik, Audian, Dili, 3-4pm.

30 November: Launch of Report – *Midwives Against Violence* (UNTL and La Trobe University), Auditorium, Liceu Campus, 10am-12noon.

6 December: 2017 Budget Analysis organised by La'õ Hamutuk, HAK Association, Farol, Dili, 9am-1pm. Presenters: Juvinal Dias (LH), Niall Almond (LH), Tobin Ferriera (BCTL).

10 December: KSI Meeting with Antero da Silva, Daniel Carmo and Elsa Pinto, Peace Centre, UNTL, 9am-1pm.

15 December: Seminar by Jerry Courvisanos on *Review of the Roadmap for Sustainable Development in Timor-Leste: A Preliminary Economic Policy Report*, Liceu Campus, 4-5.30pm.

16 December: Seminar by Jerry Courvisanos on *Review of the Roadmap for Sustainable Development in Timor-Leste: A Preliminary Economic Policy Report*, The Asia-Foundation Policy Leaders Forum, Asia-Foundation offices, 2-4.30 pm.

Additional information provided during a short visit, 25 June to 5 July 2017

Niall Almond, researcher, La'õ Hamutuk: 27 June

Victor Soares, Public Policy lecturer, UNTL: 27 June

Sam Porter and Harry Hall, Australian advisor and embassy official: 28 June

Ann Wigglesworth and Abel dos Santos, Seminar on Seasonal Workers in Australia: Auditorium, Liceu Campus, Dili: 28 June, 4-6pm

Fernando Baptista Anuno, Dean, Economics and Management, UNTL: 3 July

Detaviana Madalena Guterres Freitas, National Community Research Coordinator, Ministry of Agriculture and Fisheries: 3 July

Sixth TLSA 2017 Conference, Liceu campus (including Jerry Courvisanos presentation of Achievements and Limitations in Roadmap): 29-30 June

Michael Leach Book Launch, *Nation-Building and National Identity in TL*, Xanana Reading Room, 1 July, 5.30-7.30pm.

UNTL/VU Biennial Conference, Institute of Diplomatic Studies (incl. Jerry Courvisanos presentation of Alternative Viable Development Model for SDGs): 4-5 July.

Feedback on the Preliminary Report distributed in December 2016 from:

Pablo Ahumada, Fatima Elsheikh, Helen Hill, Rosey King, João Noronha, Sam Porter, Duncan Poulson, Shayla Babo Ribeiro, Charlie Scheiner, Chris Walker, Pat Walsh, Ann Wigglesworth

References

- ACIL [ACIL Allen Consulting] (2016), *Tasi Mane Project: Potential Implications for the Economy of Timor-Leste*, Report to Timor Gap E.P., Brisbane: ACIL Allen, 30 August
- Allen, B., Hide, R.L. and Bourke, R.M. (1995), “The Sustainability of Papua New Guinea Agricultural Systems: The Conceptual Background”, *Global Environmental Change*, 5 (4), 297-312.
- Andersen, A.B., Pant, J., Thilsted, S.H. 2013. *Food and nutrition security in Timor-Leste. CGIAR Research Program on Aquatic Systems*. Penang, Malaysia. Project Report: AAS-2013-29.
- APF [ASEAN Peoples’ Forum] (2016), *Press Release: ASEAN Civil Society Appreciates Timor-Leste’s Democracy and Freedom of Speech*. Accessed 10 August 2016 from <http://aseanpeople.org/acscapf-2016-press-release-asean-civil-society-appreciates-timor-lestes-democracy-and-freedom-of-speech>
- Assies, W. (2009), “Land Tenure, Land Law and Development: Some Thoughts on Recent Debates”, *Journal of Peasant Studies*, 36 (3), 573-89.
- AusTimorFN (2016), *Australia Timor-Leste Friendship Network*. Access website from <http://www.austimorfn.org/friendship-groups>
- Banco Central de Timor-Leste (2016), *Jestaun Operasional Fundu Petróleu*, presentation by Tobias Ferreira at Public Meeting on the Proposed 2017 State Budget and Timor-Leste’s Economic Sustainability, HAK Association, Farol, Dili, 6 December.
- Barker, J.A. (1993), *Paradigms: The Business of Discovering the Future*, New York: HarperCollins.
- Baumeister, C. and Kilian, L. (2016), “Forty Years of Oil Price Fluctuations: Why the Price of Oil May Still Surprise Us”, *Journal of Economic Perspectives* 30 (1), 139-60.
- Ben Slimane, S., Courvisanos, J. and H’henni, M. (2016), “Paradigm Shift in Sustainable Economic and Ecological Development: The Case of Tunisia”, Binzagr Institute for Sustainable Prosperity, Working Paper No. 113, July.
- Bentham, J., Bowman, A., de la Cuesta, M., Engelen, E., Ertürk, I., Folkman, P., Froud, J., Johal, S., Law, J., Leaver, A., Moran, M. and Williams, K. (2013), *Manifesto for the Foundational Economy*, CRESC Working Paper No. 131, Centre of Research on Socio-Cultural Change, University of Manchester, November.
- Billig, M. (1999), “Commodity Fetishism and Repression Reflections on Marx, Freud and the Psychology of Consumer Capitalism”, *Theory & Psychology*, 9 (3), 313-29.
- Borges, F. (2016), “Fiscal Reform Program”, presented at the Workshop on Fiscal Reform in Timor-Leste: Draft VAT Law and Revised Tax Direct Act, 6 September, Directorate General Office, Dili, Timor-Leste.
- Braithwaite, J., Charlesworth, H. and Soares, A. (2010), *Networked Governance of Freedom and Tyranny: Peace in Timor-Leste*, Acton, ACT: ANU E Press.
- Cabral, M. (2016), Personal communication during visit to the Credit Union of Baucau, 25 October, Baucau, Timor-Leste.

- Caetano, A.J. (2016), “Municipal Investment Plan”, presented at the 5th Conference on Deconcentration, Administrative Decentralisation and Local Government, 17-18 August, Hotel Timor, Dili, Timor-Leste.
- CAVR [Comissão de Acolhimento, Verdade e Reconciliação de Timor Leste] (2013), *Chega! The Final Report of the Timor-Leste Commission for Reception, Truth and Reconciliation*, Five volume English edition, Jakarta: KPG (Kepustakaan Populer Gramedia) in cooperation with STP-CAVR.
- Chagwiza, C. (2014), *Engaging Cooperative Farmers in Agricultural Intensification: Case Studies on Honey, Dairy and Linseed Value Chains in Ethiopia*, PhD thesis, Radboud Universiteit Nijmegen, The Netherlands.
- Chopra, D. and Müller, C. (2016), *Connecting Perspectives on Women’s Empowerment*, IDS Bulletin, 47 (1A), March, London: Institute of Development Studies.
- Cleary, P. (2007), *Shakedown: Australia’s Grab for Timor Oil*, Crows Nest, NSW: Allen & Unwin.
- Costanza, R. and Daly, H. (1992), “Natural Capital and Sustainable Development”, *Conservation Biology*, 6 (1), 37-46.
- Courvisanos, J. (2005), “A post-Keynesian Innovation Policy for Sustainable Development”, *International Journal of Environment, Workplace and Employment*, 1 (2), 187-202.
- Courvisanos, J. (2006), “Study of Small Towns in Victoria Revisited, and its Application to Heritage”, in J. Schapper (ed.), *Historic Towns in the Landscape Forum*, East Melbourne: Heritage Council of Victoria, 11-15.
- Courvisanos, J. (2009a), “Innovation Policy and Social Learning: An Economic Framework for Sustainable Development in Regional Australia”, in J. Martin, M. Rogers and C. Winter (eds), *Climate Change in Regional Australia: Social Learning and Adaptation*, Ballarat: VURRN Press, 256-81.
- Courvisanos, J. (2009b), “Regional Innovation for Sustainable Development: An Australian Perspective”, *Journal of Innovation Economics*, 3 (1), 119-43.
- Courvisanos, J. (2012), *Cycles, Crises and Innovation: Path to Sustainable Development – A Kaleckian-Schumpeterian Synthesis*, Cheltenham, UK and Northampton, US: Edward Elgar.
- Courvisanos, J. and Jain, A. (2006), “A Framework for Sustainable Ecotourism: Application to Costa Rica”, *Tourism and Hospitality: Planning and Development*, 3 (2), 131-42.
- Cryan, M. (2015), “‘Empty Land’? The Politics of Land in Timor-Leste” in S. Ingram, L. Kent and A. McWilliam (eds), *A New Era? Timor-Leste After the UN*, Acton, ACT: ANU Press, 141-151.
- Dabla-Norris, E., Kochhar, K., Suphaphiphat, N., Ricka, F. and Tsounta, E. (2015), *Causes and Consequences of Income Inequality: A Global Perspective*, International Monetary Fund Discussion Note no. 15/13, 15 June.
- da Costa, A.H. (2016), Speech by the President of the National Parliament at the Opening of the Fifth Legislative Session, 20 September, Dili.
- Dasvarma, G.L. (2011), “Demography of Timor-Leste: A Brief Overview and Some Implications for Development and Security”, in V. Harris and A. Goldsmith (eds), *Security, Development and Nation-Building in Timor-Leste: A Cross-Sectoral Assessment*, London and New York: Routledge, 195-209.

- da Silva, A.B. (2011), *FRETILIN Popular Education 1973-1978 and its Relevance to Timor-Leste Today*. PhD thesis, University of New England, Australia.
- de Araújo, Rui Maria (Dr.) (2016), *The Implementation of the Sustainable Development Goals (SDGs) in Timor-Leste*, Speech at Caicoli Campus, Universidade Nacional Timor Lorosa'e, 10 August Dili, Timor-Leste.
- Duffield, M. (2012), "Challenging Environments: Danger, Resilience and the Aid Industry", *Security Dialogue*, 43 (5), 475-92.
- Dutra, L.X.C., Haworth, R., and Taboada, M.B. (2011), "An integrated approach to tourism planning in a developing nation: A case study from Beloi (Timor-Leste), in D. Dredge and J. Jenkins (eds), *Stories of Practice: Tourism Policy and Planning*. Farnham: Ashgate, 269-93.
- Evans, D. (2016), "East Timor's Gas Dream Is Doomed, ConocoPhillips and Woodside Have Failed", *Forbes*, 12 December. Accessed 23 December 2016 from <http://www.forbes.com/sites/damonevans/2016/12/12/east-timors-gas-dream-is-doomed/#2a0937fdff8a>
- factfish (2017): *Timor-Leste: CO2 emissions (kt)*, factfish GmbH, Munich, Germany. Accessed 4 June 2017 from <http://www.factfish.com/statistic-country/timor-leste/co2%20emissions>
- Fridell, G. (2007), "Fair-Trade Coffee and Commodity Fetishism: The Limits of Market-Driven Social Justice", *Historical Materialism*, 15 (4), 79-104.
- Galbraith, J. (2008), "Innovation and Predation", in B. Laperche and D. Uzunidis (eds), *Powerful Finance and Innovation Trends in a High-Risk Economy*, Basingstoke: Palgrave Macmillan, 13-18.
- García, J.H., Sterner, T. and Afsah, S. (2007), "Public disclosure of industrial pollution: The PROPER approach for Indonesia?", *Environment and Development Economics*, 12 (6), 739-56.
- Geels, F. (2005), *Technological Transitions and Systems Innovations: A Co-evolutionary and Socio-technical Analysis*, Cheltenham, UK and Northampton, US: Edward Elgar.
- Grünig, R. and Kühn, R. (2011), *Process-based Strategic Planning*, 6th edition, Heidelberg: Springer.
- g7+ (2017), "Monitoring the Sustainable Development Goals in g7+ Countries", Report to be presented at the High-Level Meeting on 'Implementing the 2030 Agenda in Fragile and Conflict-Affected States', March.
- Habermas, J. (1998), "Remarks on Legitimation through Human Rights", *The Modern Schoolman*, 75 (2), 87-100.
- Hague, C., Hague, F. and Breitbach, C. (2011), *Regional and Local Development*, New York: Palgrave Macmillan.
- Hamdouch, A. (2010), "Conceptualising Innovation Networks and Clusters", in B. Laperche, P. Sommers and D. Uzunidis (eds), *Innovation Networks and Clusters: The Knowledge Backbone*, Bruxelles: P.I.E. Peter Lang, pp. 21-63.
- Hodge I. and Midmore, P. (2008), "Models of Rural Development and Approaches to Analysis, Evaluation and Decision-making", *Économie Rurale*, No. 307, 23-38.
- Hoering, U. (2013), *Alternatives to Food Import Dependency*, FDCL Policy Paper, Berlin: FDCL-Verlag, May.

- Hyman, D.N. (1990), *Public Finance: A Contemporary Application of Theory to Policy*, 3rd edition, Orlando, FL: The Dryden Press.
- Inder, B. and Cornwell, K. (2016), *Private Sector-Driven Development in an Infant Economy*, Research Paper Series on Timor-Leste RP-TL4-English, Monash Centre for Development and Sustainability, Monash University, August.
- Jomaraty, M. and Courvisanos, J. (2014), “The Growth Process of Small and Medium-sized Manufacturing in Developing Countries: A Study of Women-owned Firms in Bangladesh”, in K.V. Lewis, C. Henry, E.J. Gatewood and J. Watson (eds), *Women’s Entrepreneurship in the 21st Century: An International Multi-Level Research Analysis*, Cheltenham UK and Northampton, MA, Edward Elgar, pp. 186-212.
- Kalecki, M. (1992), “Outline of a Method of Constructing a Perspective Plan (Based on Polish Experience)”, in J. Osiatyński (ed), *Collected Works of Michał Kalecki, Volume III: Socialism – Functioning and Long-Run Planning*, Clarendon Press: Oxford, pp. 221-31 [original published 1962 in Polish]
- Karl, T.L. (2004), “Oil-led Development: Social, Political, and Economic Consequences”, *Encyclopedia of Energy: Volume 4*, 661-72.
- Kemp, R., Schot, J. and Hoogma, R. (1998), “Regime Shifts to Sustainability through Processes of Niche Formation: The Approach of Strategic Niche Management”, *Technology Analysis & Strategic Management*, 10 (2), 175-95.
- Kemp, R. and Martens, P. (2007), “Sustainable Development”, *Sustainability*, 3 (2), 5-14.
- Kihara-Hunt, A. (2016), Unofficial Summary Record of the European launch of the English version of the *Chega!* CAVR Report, Nobel Peace Centre, Oslo, 25 January. Accessed 28 November 2016 from <http://home.patwalsh.net/activities>
- Kingsbury, D. (2009), *East Timor: The Price of Liberty*, New York: Palgrave Macmillan.
- Kinrade, P. (1995), “Towards Ecologically Sustainable Development: The Role and Shortcomings of Markets”, in R. Eckersley (ed.), *Markets, The State and The Environment: Towards Integration*, South Melbourne: Macmillan, 86–109.
- Krause, L.B., Tee, K.A. and Yuan, L.T. (1987), *The Singapore Economy Reconsidered*, Singapore: Institute of Southeast Asian Studies.
- Kretzmann, S. and Nooruddin, I. (2005), *Drilling into Debt: An Investigation into the Relationship Between Debt and Oil*, Washington D.C.: Oil Change International.
- Kumar, U., Kumar, V., Dutta, S. and Fantazy, K. (2007), “State Sponsored Large Scale Technology Transfer Projects in a Developing Country Context”, *Journal of Technology Transfer*, 32 (6), 629-44.
- La'o Hamutuk (2011), “Power Plant and National Electrical Grid 2011-13: Mega-project or mega-problem?” 3 June. Accessed 10 November 2016 from <http://www.laohamutuk.org/Oil/Power/2011/11PowerPlant2011.htm#sustain>
- La'o Hamutuk (2016a), “Implemenatsuan of Large Infrastructure Projects Which Continue to Violate Decree-Law No.5/2011 Environmental Licensing”, 31 May 2016. Accessed 10 June 2017 from <http://www.laohamutuk.org/Agri/EnvLaw/2016/LHbaPDHJAIA31May2016en.pdf>
- La'o Hamutuk (2016b), “Suai Supply Base Contract Cancelled: It’s time to cancel the project”, 29 June. Accessed 10 November 2016 from <http://laohamutuk.blogspot.com.au/2016/06/suai-supply-base-contract-cancelled-its.html>

- La'o Hamutuk (2016c), Commentary from La'o Hamutuk to the Fiscal Reform Commission on the Draft Value Added Tax (VAT) Law for Timor-Leste, 15 August. Accessed 25 August 2016 from www.laohamutuk.org
- La'o Hamutuk (2016d), Submission to Timor-Leste National Parliament on the Proposed General State Budget for 2017, 7 November. Accessed 10 November 2016 from www.laohamutuk.org
- La'o Hamutuk (2016e), "Rights and Sustainability in Timor-Leste's Development", November. Accessed 14 November 2016 from www.laohamutuk.org
- La'o Hamutuk (2016f), "Is the Tibar Container Port what Timor-Leste Really Needs?". Accessed 12 June 2017 from <http://laohamutuk.blogspot.com/2016/06/is-tibar-container-port-what-timor.html>
- Lowe, A. (1976), *The Path of Economic Growth*, Cambridge: Cambridge University Press.
- Lumpkin, G.T. and Dess, G.G. (1996), "Clarifying the Entrepreneurial Orientation Construct and Linking it to Performance", *Academy of Management Review*, 21 (1), 135-72.
- Mari, M., Poggesi, S. and De Vita, L. (2016), Family Embeddedness and Business Performance: Evidences from Women-owned Firms. *Management Decision*, 54 (2), 476-500.
- Martins, X. (2016), Email personal communication, 21 November.
- Marx, S. (2016), "Timor-Leste's Non-Oil Economy Must Look to Tourism", The Asia Foundation, 22 June. Accessed 24 August 2016 from: <http://asiafoundation.org/2016/06/22/timor-lestes-non-oil-economy-must-look-tourism/>
- Matsui N. and Ikemoto Y. (2016), *Solidarity Economy and Social Business*, Tokyo: Springer.
- McCombie, J. and Richardson, C. (1987), "Competitive Strengths and Regional Economic Growth: The Case of the Victorian State Economic Strategy", *Australian Journal of Regional Studies*, 1, 3-22.
- MCIA [Ministério Comércio Indústria e Ambiente] (2013), *Perfil Industria Ki'ik no Kooperativa* [Profile of Small Industry and Cooperatives], Dili, Timor-Leste.
- Meitzner Yoder, L.S. (2015), "The Development Eraser: Fantastical Schemes, Aspirational Distractions and High Modern Mega-events in the Oecusse Enclave, Timor-Leste", *Journal of Political Ecology*, 22, 299-321.
- Meitzner Yoder, L.S. (2016), "Oecusse's Special Economic Zone and Local Governance", *State, Society & Governance in Melanesia*, In Brief 2016/5, 1-2.
- MoH [Ministry of Health] (2014), *Timor-Leste National Nutrition Strategy 2014-2019*, Dili, Timor-Leste.
- Moore, C. (2016), Challenges of Addressing and Resolving Post-Colonial and Post-Conflict Land Issues and Disputes, Seminar presentation, America House, Liceu Campus, Universidade Nacional Timor Lorosa'e, 3-5pm, 27 October, Dili, Timor-Leste.
- Moxham, B. (2005), "The World Bank's Land of Kiosks: Community Driven Development in Timor-Leste", *Development in Practice*, 15 (3/4), 522-8.
- Murta, J. and Willetts, J. (2014), "Incentives for Enterprise Engagement in Timor-Leste", *Private and Social Enterprise Engagement in Water and Sanitation for the Poor*,

Working Paper 2c, Institute for Sustainable Futures, University of Technology, Sydney.

- Myhre, G. and Shindell, D. (eds) (2013), Chapter 8: Anthropogenic and Natural Radiative Forcing, in *Climate Change 2013: The Physical Science Basis*, Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge: Cambridge University Press, pp. 659-740.
- Noronha, J.M.D.R.C. (2015), *A Critical Analysis of Timor-Leste's First Two Strategic Development Plans: People's Views on Conceptualization and Process*, PhD thesis, Victoria University, Melbourne, Australia.
- OCCUL [Oceanic Confederation of Credit Union Leagues] (2012), "Timor-Leste: Credit Union Development", *OCCUL Newsletter*. March, 3-4.
- OCCUL [Oceanic Confederation of Credit Union Leagues] (2014), "Timor-Leste Training for Credit Union", *OCCUL Newsletter*. March, 2.
- Okonjo-Iweala, N., Chukwuma Soludo, C. and Muhtar, M. (2002), *The Debt Trap in Nigeria: Towards a Sustainable Debt Strategy*, New York: AmP.
- Pahl-Wostl, C. and Hare, M. (2004), "Processes of Social Learning in Integrated Resources Management", *Journal of Community and Applied Social Psychology*, 14 (3), 193-206.
- Payer, C. (1974), *The Debt Trap: The IMF and The Third World*, New York: Monthly Review Press.
- Pearce, D. and Atkinson, G. (1993), "Capital Theory and the Measurement of Sustainable Development: An Indicator of 'Weak' Sustainability", *Ecological Economics*, 8 (2), 103-8.
- Pereira, A. (2017), "Government Launches Roadmap for Implementation of 2030 Agenda" Media Release, Dili: Government of Timor-Leste, 22 May.
- Pretty, J. (2006), *Agroecological Approaches to Agricultural Development*, Background paper for the World Development Report 2008, Washington D.C.:World Bank, November.
- Ramos-Horta, J. and Mahar, A. (2016), "In the Mountains of Timor-Leste: A Small Success on Climate Change", *The Huffington Post*, 26 November. Accessed 26 November 2016 from <https://www.linkedin.com/pulse/mountains-timor-leste-small-success-climate-change-andrew-mahar-am>
- RDTL [República Democrática de Timor-Leste] (2002), *Constitution of the Democratic Republic of Timor-Leste* [English version], 20 May. Accessed 12 November 2016 from <http://timor-leste.gov.tl/?cat=37&lang=en>
- RDTL (2011), *2011-2030 Strategic Development Plan*, Dili: Government of Timor-Leste, 7 July.
- RDTL (2014), *Zero Hunger Challenge: National Action Plan for a Hunger and Malnutrition Free Timor-Leste*, Dili: Government of Timor-Leste.
- RDTL (2015), *External Trade Statistics: Annual Reports 2015*, General Directorate of Statistics, Dili: Government of Timor-Leste, December.
- RDTL (2016a), *Timor-Leste National Accounts 2000-2015*, General Directorate of Statistics, Dili: Government of Timor-Leste, December.

- RDTL (2016b), “Government’s 2017 General State Budget presented to National Parliament”, Media Release, Dili: Government of Timor-Leste, 24 November.
- RDTL (2016c), “ZEESM TL: Creating the Future”, brochure prepared for the 2016 International Conference on Emerging Tourism Destinations, 24-26 October, Dili: Government of Timor-Leste.
- RDTL (2017), “Timor-Leste’s Roadmap for the Implementation of the 2030 Agenda and the SDGs”, Explainer of the Roadmap, Dili: Government of Timor-Leste, 22 May.
- Ricoy, C. (1987), “Cumulative Causation”, in J. Eatwell, M. Milgate and P. Newman (eds), *The New Palgrave: A Dictionary of Economics*, Volume 1, London: Macmillan, 730-5.
- Ruak, T.M. (2016), Speech by His Excellency President Taur Matan Ruak to the National Parliament on the State of the Nation, 20 September, Dili.
- Sahlins, M. (1972), *Stone Age Economics*, Chicago: Aldine.
- Scambray, J. (2015), “In Search of White Elephants: The Political Economy of Resource Income Expenditure in East Timor”, *Critical Asian Studies*, 47 (2), 283-308.
- Scheiner, C. (2015), “Can the Petroleum Fund Exorcise the Resource Curse from Timor-Leste?” in S. Ingram, L. Kent and A. McWilliam (eds), *A New Era? Timor-Leste After the UN*, Acton, ACT: ANU Press, 73-101.
- Schumacher, E.F. (1974), *Small is Beautiful: A Study of Economics as if People Mattered*, London: Abacus/Sphere Books [original published 1973 by Blond & Briggs].
- Seymour, R. (2012), “Understanding the social in social entrepreneurship”, in R. Seymour (ed.), *Handbook of Research Methods on Social Entrepreneurship*, Cheltenham, UK and Northampton, US: Edward Elgar, 3-25.
- Shoesmith, D. (2017), “Decentralisation in ‘Disadvantaged Regions’: Lessons from West Timor for the Challenges to Decentralisation in Timor-Leste”, presented at the 6th Timor-Leste Studies Association (TLSA) Conference, Liceu Campus, Universidade Nacional Timor Lorosa’e, 29-30 June, Dili, Timor-Leste.
- Silva, K. (2012), “Foho Versus Dili: The Political Role of Place in East Timor National Imagination”, *Realis – Revista de Estudos Antiutilitaristas e Pós-coloniais*, 1 (2), 145-65.
- Soares, A., Moeljadi, Rohman, F. and Solimun (2014), “Effect of Entrepreneurial Orientation on Business Performance Moderated by Government Policy (Study on SMEs in Timor-Leste)”, *International Journal of Business and Management Invention*, 3 (8), 64-71.
- Soares, A. de J. (2015), “A Social Movement as an Antidote to Couption”, in S. Ingram, L. Kent and A. McWilliam (eds), *A New Era? Timor-Leste After the UN*, Acton, ACT: ANU Press, 203-212.
- Soares, V. (2016), “The Lazy Mentality Revolution within the National Development Process”, speech at the Manatuto Community Service Youth Workshop, Manatuto, 3 December, 2016 [In Tetum and Bahasa Indonesian, translated by Paul Ramos].
- Sotarauta, M. and Srinivas, S. (2006), “Co-evolutionary Policy Processes: Understanding Innovative Economies and Future Resilience”, *Futures*, 38 (3), 312-36.
- Statistics Timor-Leste (2015), *Key Census Results*, Dili, Timor-Leste: General Directorate of Statistics. Accessed 4 June 2017 from <http://www.statistics.gov.tl/census-2>

- Statistics Timor-Leste, (2017), *Census Publications: Employment Sector*, Dili, Timor-Leste: General Directorate of Statistics. Accessed 4 June 2017 from <http://www.statistics.gov.tl/census-2>
- Strating, R. (2016), “Time Running Out for Timor-Leste”, *New Mandala: New Perspectives on Southeast Asia*, 19 September. Accessed 15 March 2017 from <http://www.newmandala.org/time-running-timor-leste>.
- Szirmai, A. (2013), ‘Explaining Success and Failure in Economic Development’, in D. Prasada Rao and B. van Ark (eds), *World Economic Performance: Past, Present and Future*, Cheltenham, UK and Northampton, US: Edward Elgar, 227-67.
- Taylor-Leech, K. (2013), “Finding Space for Non-dominant Languages in Education: Language Policy and Medium of Instruction in Timor-Leste 2000–2012”, *Current Issues in Language Planning*, 14 (1), 109-26
- Thu, P.M. (2008), “Land Forgotten: Effects of Indonesian Re-settlement on Rural Livelihoods in East Timor”, in D. Mearns (ed.), *Democratic Governance in Timor-Leste: Reconciling the Local and the National*, Darwin: Charles Darwin University Press, 143-59.
- Trading Economics (2017), *GDP Per-Capita*, New York: IECONOMICS Inc.. Accessed 28 March 2017 from <http://www.tradingeconomics.com/east-timor/gdp-per-capita>.
- Trindade, J. (2008), “Reconciling Conflicting Paradigms: An East Timorese Vision of the Ideal State”, in D. Mearns (ed.), *Democratic Governance in Timor-Leste: Reconciling the Local and the National*, Darwin: Charles Darwin University Press, 160-88.
- United Nations (2015), *Transforming Our World: The 2030 Agenda for Sustainable Development*, Resolution A/RES/70/1, Washington D.C..
- U.S. Environmental Protection Authority (2017), *Methane: Sources and Emissions*. Accessed 4 June 2017 from <https://web.archive.org/web/20060712211252/http://www.epa.gov/methane/sources.html>
- Vercelli, A. (1998), “Sustainable Development, Rationality and Time”, in S. Faucheux, M. O’Connor and J. van der Straaten (eds), *Sustainable Development: Concepts, Rationalities and Strategies*, Dordrecht: Kluwer Academic Publishers, 259-76.
- Walker, C. and Kirk, J.M. (2013), “From Cooperation to Capacitation: Cuban Medical Internationalism in the South Pacific”, *International Journal of Cuban Studies*, 5 (1), 10-25.
- Wallace, D. (1995), *Environmental Policy and Industrial Innovation: Strategies in Europe, the USA and Japan*, London: The Royal Institute of International Affairs and Earthscan.
- Wallner, H., Narodoslawsky, M. and Moser, F. (1996), “Islands of Sustainability: A Bottom Up Approach towards Sustainable Development”, *Environment and Planning A*, 28 (10), 1763-78.
- Walsh, P. (2011), *At the Scene of the Crime: Essays, Reflections and Poetry on East Timor, 1999-2010*, Northcote Vic.: Mosaic Publishing.
- WCED [World Commission on Environment and Development] (1987), *Our Common Future*, Oxford: Oxford University Press.
- Willettts, J., Murta, J. and Gero, A. (2016), “Water and Sanitation Entrepreneurs in Indonesia, Vietnam and Timor-Leste: Traits, Drivers and Challenges”, *Enterprise in WASH*, Working Paper 4, Institute for Sustainable Futures, University of Technology Sydney.

- Winnett, A. (2005), "Natural Capital: Hard Economics, Soft Metaphor?", *Environmental Education Research*, 11 (1), 83-94.
- World Bank (2016a), *Poverty in Timor-Leste 2014*, Dili: World Bank with RDTL, September.
- World Bank (2016b) *Reducing Vulnerabilities: East Asia and Pacific Economic Update*, Washington D.C.: International Bank for Reconstruction and Development/World Bank, October.
- Wigglesworth, A. (2016), *Activism and Aid: Young Citizens' Experiences of Development and Democracy in Timor-Leste*, Clayton: Monash University Publishing.
- Wrobel, R.M. (2010), *Social Market Economy as Alternative Approach of Capitalism after the Financial and Economic Crisis* (mimeo), Westsaxon University of Applied Sciences, Zwickau, Germany.
- Wronka, S. (2015), *Mobilizing Social Business to Accelerate MDGs Achievement in Timor-Leste: Access to Finance Consultancy Report*, Dili: UNDP.
- Xavier, T., Vieira, F. and Rodrigues, C. (2014), "'Project Empreede' TIMOR. How to Promote Entrepreneurship among Students?" Proceedings of the *2014 International Conference on Industrial Engineering and Operations Management*, Bali, Indonesia, 7-9 January, 1457-66.
- Zvavanyange R.E. (2015). *Youth, Conservation Agriculture and Sustainable Development*, Lambert Academic Publishing.