

**Instituto Nacional
de Ciências e Tecnologia de Timor-Leste**



**Relatório de
Investigação Científica INCT 2025**

Reducing Trade Deficit
through Import Substitution Strategy in Timor-Leste

27 November 2025

Instituto Nacional de Ciências e Tecnologia de Timor-Leste



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Dili, 27 November 2025

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Declaration

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Reducing Trade Deficit through Import Substitution Strategy in Timor-Leste

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Abstract

Timor-Leste's trade balance has remained negative since its independence, with imports consistently exceeding exports. This research seeks to examine the underlying causes of the trade deficit, identify imported commodities that could potentially be produced locally, and provide insights to both government and the private sector on investment opportunities. It also aims to deliver policy recommendations to relevant government institutions to improve trade-related activities. Using a qualitative approach, the research team conducted interviews with selected officials from government ministries and both local and foreign companies, as well as focus group discussions with farmer groups in four municipalities: Baucau, Aileu, Bobonaro, and Dili.

The results indicate that Timor-Leste's trade deficit is primarily driven by four factors: the limited capacity to produce sufficient goods domestically, small domestic market high government spending and government policy. The study identified several agricultural products such as rice, tomatoes, and capsicum, along with livestock like pigs and chickens, as well as drinking water, as potential local products that could be developed to support import substitution in the future. Furthermore, the research highlights three key sectors: agriculture, livestock, and industry as priority areas for investment opportunities, by both for local and foreign companies.

This research proposed six recommendations for the consideration by the relevant institutions in Timor-Leste. This includes (1) Promote Agricultural Modernization, (2) Support Local Industries, (3) Capacity Building, (4) Improve Bureaucratic Procedure, (5) Encourage Public-Private Partnerships and (6) Gradual Approach.

Keywords: Trade Balance, Export and Import

Abbreviations

ACIAR:	Australia Center for International Agricultural Research
FAO:	Food Agricultural Organizations
FGD:	Focus Group Discussion
INE:	Institusaun Nasional Estatistika
LDCs:	Least Developing Countries
MAF:	Ministry of Agriculture and Fisheries
MDF:	Market Development Facility
NSW:	New South Wales
OEC:	Observatory of Economic Complexity
TB:	Trade Balance
TOMAK:	To'os ba Moris Di'ak
UNCTAD:	United Nations Conference on Trade and Development
WITS:	World Integrated Trade Solution

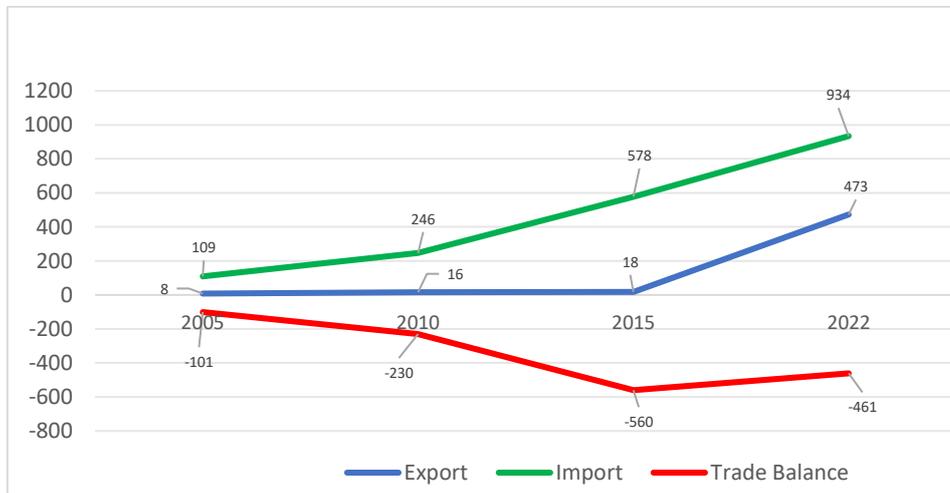
1. Introduction

1.1 Contextualization

Following after the referendum in 1999, Timor-Leste’s economy has been highly dependent on the funding assistance from international donors since its infrastructures were burnt and destroyed. As a country that started its economy from zero, Timor-Leste’s heavily reliance on external assistance, has become an ordinary situation where experienced by most of the post-conflict affected countries (Leach, 2017).

This situation has led to the country’s dependency on importation of most of basic needs from overseas and contributed to the negative trade balance. As shows in Figure 1.1, the country started with only a deficit of around USD\$101 million in 2005, this increased to USD\$230 million in 2010 and even widened in 2015 to USD560, however, it then declined to \$461 million in 2022 (UNCTAD 2023). The future trend will depend on the government intervention and policies around trade activities.

Figure 1.1: Timor-Leste’s Trade from 2005 to 2022 (USD\$ in Million)



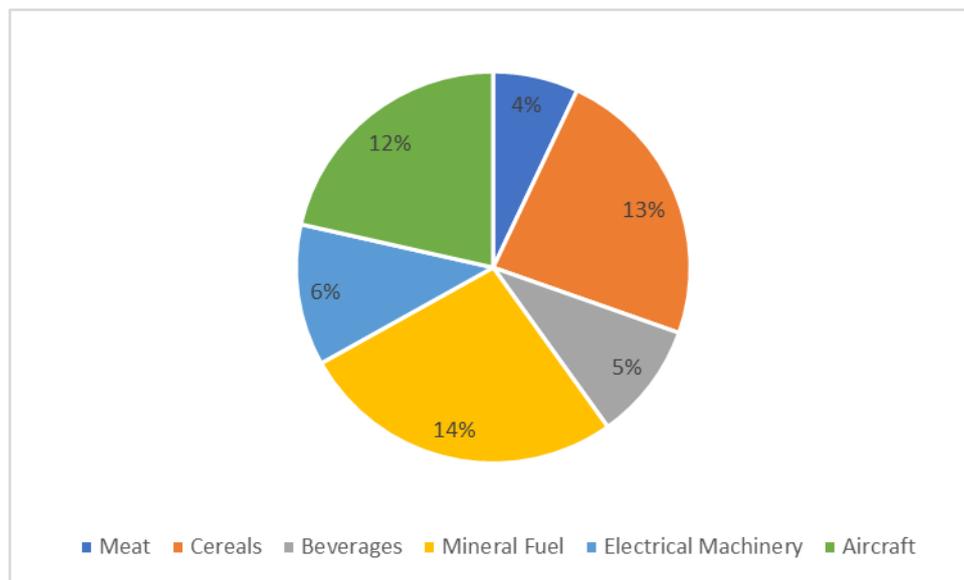
Source: UNCTAD (2023)

The decline in trade deficit from 2015 to 2022 was mainly caused by the inclusion of oil production as part of Timor-Leste’s export. Timor-Leste's economy has historically been reliant on oil and gas exports, which represent a significant portion of its revenue. While production levels from the country’s offshore oil fields had been declining, there were some adjustments in the oil sector that helped boost government revenues around 2015. The government used the

oil wealth to fund public spending in infrastructure and other development projects, which in turn supported other sectors of the economy. In 2015, the government also focused on diversifying its investments through the Timor-Leste Petroleum Fund, ensuring a steady stream of income even if oil production declines in the future (Scheiner, 2015).

Based on External Trade Statistics report from Instituto Nacional Estatistika (INE, 2024), based on Figure 1.2, Timor-Leste's importation of goods was dominated by 14% of Mineral Fuel, 13% of Cereals, 12% of Aircraft, 6% of electrical machinery in addition to 5% of beverages and 4% of Meat as the top six. Out of these commodities, beverages, cereals and meat become the particular interest for the research team to explore further to identify the potential that Timor-Leste may have the ability to produce it locally.

Figure 1.2: Timor-Leste's Imports Commodities (%)



Source: INE (2024)

Timor-Leste imports a wide range of beverage products, including Aqua mineral water in various sizes such as 330 ml, 600 ml, and 1,500 ml. The country also imports several meat products, notably frozen pork and frozen seasoned chicken. In addition, cereal products such as rice constitute a significant share of its imported food commodities (INE, 2024).

1.2 Literature Review

1.2.1. Underpinning Theories

Dependency Theory were originated from the work of both Prebisch-Singer-hypothesis in 1949. Singer's paper offered empirical proof and statistical support for the long-term decline in the terms of trade faced by underdeveloped nations, which became a central aspect of the hypothesis. Prebisch in his influential book outlined his version of the hypothesis and recommended that Latin American nations need to adopt import-substituting industrialization as a strategy to reduce dependence on raw material exports.

This theory has become one of the important frameworks for studying import substitution. It was argued that if a country continues to depend on rich countries for their needs, their economy, particularly least developing countries (LDCs), could not be developed (Velasco, 2002).

Many countries have achieved a satisfactory approach to development through an import substitution strategy. For instance, South Korea (Gelb, 2010), Malaysia (Yusof, 2013), even our neighbour Indonesia (Zen, 2012) applied an import substitution approach in the 20th century that boosted their country's industrialization in support of an economic diversification policy.

In addition to dependency theory, this research also utilized **theory of comparative advantage** by David Ricardo (1817). Ricardo argues every nation can gain from trade by specializing in the goods they produce most efficiently at the lowest opportunity cost instead of attempting to produce everything on their own.

1.2.2. Definitions

Trade is typically defined through imports (buying) and exports (selling) of goods and services. Imports can be divided into two categories: imports and re-imports. Imports involve purchasing goods from abroad, while re-imports refer to buying back goods that were originally produced domestically and then exported. In short, imports bring in foreign products, whereas re-imports bring back local products. Similarly, exports also have two forms: exports and re-exports. Exports involve selling domestically produced goods overseas, while re-exports mean selling

abroad goods that were initially imported. Put simply, exports are the sale of local products, while re-exports are the sale of foreign-made goods (United Nations, 2010).

Import substitution is an economic approach in which a nation seeks to manufacture domestically the goods it once imported, with the goal of lessening dependence on foreign products (Bruton, 1989). In other words, import substitution is a strategy to invest and promote more local production while reduce importation of good and products that can be produced locally. This is one of the strategies to prepare countries for self-sufficiency in term of food production in the future.

1.2.3. Factors influence Trade

There are number of factors that influence a country's trade balance. Majority of previous literature show economic factor become the most influential factors to a country's trade balance. The economic factors such as exchange rate (Zahangir, 2022; Ha et al, 2024 and Nepal and Thapa (2021), inflation (Zahangir, 2022), foreign direct investment, gross domestic product, government consumption expenditure (Nepal and Thapa (2021) have contributed immensely to a country's trade balance.

Figure 1.3: Theoretical Framework



Source: Nepal and Thapa (2021)

Therefore, the initial proposal for this research adopted the theoretical framework by Nepal and Thapa (2021) as the base for the research. They argued that for **exchange rate**, when a nation's currency depreciates (loses value), its exports become cheaper and more competitive in international markets, while imports become more expensive. This can lead to an increase

in export revenues and a decrease in import spending, thereby improving the trade balance. However, when the currency appreciates (gains value), exports become more expensive for foreign buyers, and imports become cheaper for domestic consumers, which can worsen the trade balance. In relation to **Foreign Direct Investment (FDI)**, when foreign investors increase the production of goods and services domestically, this can reduce imports if local production meets demand. However, the effect of FDI on trade balance depends on the type of investment and whether it stimulates domestic production or shifts consumption patterns. On **Gross Domestic Product (GDP)**, when GDP grows, it often leads to increased consumer spending and higher demand for goods and services, which can result in more imports if domestic production cannot meet the demand. The relationship between GDP and trade balance depends on the balance between domestic consumption and production. Another important factor is **Government Consumption Expenditure (GCE)**. When the government increases its spending on public services, infrastructure, and welfare, it can drive up demand for both locally produced and imported goods. If the increased government expenditure is directed towards domestic goods and services, it can reduce the need for imports and help improve the trade balance. However, if GCE leads to greater demand for imports, particularly for goods that are not locally produced, it may worsen the trade balance by increasing imports. The last factor influencing trade balance is **Inflation**, when a country experiences inflation, the prices of its domestically produced goods and services increase, which can make its exports more expensive and less competitive in global markets. This may lead to a decrease in export demand. At the same time, inflation can make imports cheaper, as foreign goods may become relatively less expensive in comparison to locally produced items.

However, there are also number of internal factors that contribute more to trade. These include low domestic production, makes a country to be more dependence of importation of goods from other countries. Low domestic production can negatively impact a country's trade balance by increasing reliance on imports to meet domestic demand. When local industries cannot produce enough goods or services to satisfy consumer needs, the country may turn to foreign suppliers, leading to a rise in imports. This can widen the trade deficit, as more money flows out of the country to pay for imported goods. In contrast, if domestic production were higher, the need for imports would decrease, potentially improving the trade balance. Ultimately, low domestic production creates an imbalance where imports surpass exports, exacerbating trade deficits (Kenrich, 2024).

In addition, the size of domestic market has served as significant factors that impacted in trade balance. The size of a country's domestic market can influence its trade balance by affecting the demand for both domestic and foreign goods. A large domestic market often leads to higher consumption and production, which can reduce the need for imports if local industries are able to meet demand. Conversely, a large market may also drive-up demand for imported goods, especially if domestic production cannot fully satisfy consumer preferences or if imports are cheaper or of higher quality. If domestic production fails to keep pace with market demand, the trade balance may worsen due to increased imports. Additionally, a larger domestic market can provide economies of scale for exports, potentially improving the trade balance if the country is competitive in global markets (Escaith, 2017).

1.3 Problem Formulation

Cash Outflow

If the government does not take serious action to address the trade balance, Timor-Leste may continue to experience significant economic losses, as the majority of the country's financial resources are spent on importing goods.

Unemployment

The lack of support for the country's local production, coupled with a continued reliance on imported goods, will not contribute to job creation, especially given the high levels of unemployment among young people.

1.4 Formulation of Hypothesis

There is no specific hypothesis, this research is simply to find out the answer to the following four objectives of the research. Qualitative research does not require a hypothesis. Instead, it is more focused on exploring a topic, gaining deep insights, and allowing the findings to emerge naturally from the data (Denzin & Yvonna, 2005).

1.5 Research Objectives

The general objective is to examine the factors influencing Timor-Leste's trade balance, evaluate the potential for local production to decrease imports, offer recommendations for

investment opportunities to both the government and private sector, and suggest ways to enhance trade policies and support economic growth.

This research has the following four specific Objectives:

- 1) To find out the causes of the trade deficit
- 2) To identify commodities of imports that Timor-Leste has the potential to produce locally
- 3) To inform government and private sector on the potential areas for investment
- 4) To provide recommendations to the relevant government institution for policy improvement related to trade activities

This research is developed with the following personal and professional motivation:

- Expand the PhD thesis area of the Principal Investigator for research project on trade, an important area for Timor-Leste's economy.
- Concern with the lack of production in non-oil sector considering that the country's continue dependency on the revenue from oil and gas, which is a non-renewable resources.
- Timor-Leste has potential to produce some of the raw materials for commodities that the country has been imported from abroad.
- Promote potential areas for investment by both local and foreign companies

1.6 The importance of Research

The adoption of imports substitution is important due to the following factors:

- Enables Timor-Leste to produce locally what it previously imported and promoting economic self-sufficiency.
- Fosters the growth of local manufacturing and industrial sectors in the country.
- Expanding local production which will generate new job opportunities.
- Lowering imports can help reduce trade deficits and improve trade balance
- Local industries can start adopt new technologies to stay competitive with imported goods.
- Reduced dependence on foreign products gives the country greater control over its economy, especially during international disruptions.

1.7 Organization of the Research

This preliminary report is organized into four different parts as follows: start with introduction which cover background information, literature review, problem formulation, research objectives, the importance of research and area of research.

The second part focus on the methodology for the research while the third part more on the data analysis and discussions of result from the research. The last part is on conclusion and with some recommendations for the relevant institution both government and private sectors.

1.8 Local Geography

This research is conducted at four different municipalities, while the interview with identified respondents only in Dili, the focus group discussion was organized in the other districts such as Bobonaro, Aileu, Baucau as well in Dili particularly in the area of Hera and Metinaro.

2. Methodology

2.1. Research Design

This research project primarily employs a qualitative approach, with a primary focus on conducting focus group discussions and interviews to gather in-depth insights. The focus group discussions will involve engaging with relevant stakeholders, such as farmer groups, to capture a range of perspectives on key issues. The interviews will be conducted with government officials, local and foreign companies, providing a deeper understanding of policies, strategies, and challenges within the relevant sector.

In addition to the qualitative data, the research also integrates secondary statistical data to support and contextualize the findings. This data will be sourced from a variety of reputable institutions, including the National Statistical Office of Timor-Leste and relevant government ministries, offering official data on agricultural production, economic indicators, and other related topics. Furthermore, data from international organizations, including from UN agencies, will be incorporated to provide a global context and allow for comparative analysis.

By combining qualitative methods with secondary statistical data, this research aims to offer a holistic view of the issue at hand, enhancing the depth and accuracy of the analysis and making the findings more robust and evidence-based.

2.2. Research Sampling

Since this a qualitative (e.g., interviews focus group discussion), a small sample is already appropriate, it does not necessarily need to represent the entire population. The goal is more to explore depth and gain insights rather than make broad generalizations (Lim, 2024)

The target sample for the interview is 13 respondents, representing from relevant government institution, local companies and foreign companies with detail of respondents as follows:

Table 2.1: Sampling for Interview

No	Target Sample	Number
1	Senior Government Officials from relevant Ministries	3
2.	Person in charge from different Local Companies	5
3.	Person in charge from different Foreign Companies	5
	TOTAL	13

In addition, the research also selected the following one farmer group from four different municipalities for focus group discussion:

Table 2.2: Sampling for Focus Group Discussion

No	Target Sample	Remark
1	Farmer Group in Baucau Municipality	1 group
2	Farmer Group in Aileu Municipality	1 group
3.	Farmer Group in Bobonaro Municipality	1 group
4.	Farmer Group in Dili (Hera) Municipality	1 group
	TOTAL	4 groups

These groups were selected based on purposive sampling from four selected districts (Dili, Baucau, Maliana and Aileu). The purposive sampling is a non-probability sampling method that is suitable for small samples like in the current research project. Despite the fact that this method may not represent the entire population, however, at least it provides the important information that is required by the researcher team (Lewis and Thornhill, 2012).

2.3. Data Collection

The team adopted Interview and Focus Group Discussion as the two methods for collecting the primary data.

- **Interviews:** Conduct semi-structured interviews with stakeholders, including government officials in addition local and foreign investor. These interviews seek to explore the government policy on trade in addition to local and foreign investor engagement in the local production and trade activities. The semi-structured interviews provide more flexibility since it goes with open-ended questions, it gives more freedom

to the respondents to provide their answer in comparison with the closed questions (Cameron & Price 2009).

An interview with a relevant government official involves a one-on-one conversation aimed at gaining insights into government policies, initiatives, and strategies related to the research topic. During the interview, the research team seek to find out more on topics such as government programs, challenges faced by the sector, government priorities, and plans for improving the sector. Questions about policy implementation, resource allocation, and the ministry's role in addressing issues like low production and trade deficit. This interview helps to understand the government's perspective on challenges and its efforts to enhance the sector, providing essential information for research, policy analysis, or program development.

- **Focus Group Discussion:** Organize a focus group discussion with selected group of farmers to seek more of their views and identify potential local products that they have been producing. It is tentatively planned to have around 6 to 8 farmers in a group for the discussion in each district.

A focus group discussion with a farmer group involves gathering a small group of farmers to engage in a guided conversation about specific question related to their activities, production, challenges, and opportunities. The discussion is facilitated by the principal investigator who asks open-ended questions to encourage respondents to share their experiences, opinions, and insights. This method allows for a deeper understanding of the farmers' perspectives on topics such as crop production, market access, or farming practices. The interactive nature of focus group discussions helps to identify common concerns, gather diverse viewpoints, and generate ideas for improving agricultural practices or policies. Insights gained from these discussions can inform decision-making, program design, or policy recommendations tailored to the needs of the farming community and improve the local production.

This research project target to have a focus group discussion with one farmers group in each Municipality. The research team coordinated with Municipality authority in the identification of the farmers group who involve in local production.

The use of secondary from various sources are simply to complement and support in the discussion of the position in this research.

2.4. Data Analysis

The data collected from interview and focus group discussion were analyzed using Nvivo15 software. The software is a powerful tool that has the ability to code and categorize all of the various responses from respondents based on the objectives of the research analysis (Bryman 2008).

Following steps at NVIVO (2025), these will be how the research team analyze qualitative information from focus group discussion and interview:

1. **Start by importing** respondents response from focus group discussion and interview into NVivo.
2. **Create a Project** with certain label name, where all of data will be stored and analyzed
3. **Organize Data into folders**, such as "Interviews" and "Focus Groups Discussion" to make it easier to navigate.
4. **Start Coding** data by highlighting relevant portions of text and assigning them to "nodes" This step allows to identify and tag specific patterns or ideas within the research data.
5. **Create Nodes** for similar data that represent a category accordingly to the research objectives
6. **Use NVivo's query tools** to explore patterns and relationships within the coded data. The tools such word frequency, or coding queries to uncover insights and deeper meanings.
7. **Analyze Relationships** through visualize relationships between different nodes or between data and specific cases (e.g., interviewees). Tools like "Node Matrix" or "Word Clouds" are used to map and analyze connections.
8. **Generate Reports** Once data are coded and analyzed, the Nvivo will allow to generate reports that summarize the findings. These reports can help to synthesize key themes, respondents insights, and relevant patterns.
9. **Interpret and Present Findings** based on analysis and interpret the data and draw conclusions. NVivo software allows for export data and visualizations to incorporate into reports or presentations.

3. Data Analysis and Discussion of Result

3.1. Profile Respondents

3.1.1 Focus Group Discussion with Farmer Groups

The research team conducted focus group discussion with four different farmers group in four Municipalities, namely Baucau, Aileu, Bobonaro and Dili. Number of respondents are in total of 30 people however, the participation from females is still very low, only 5, which is only around 16% from the target group for the focus group discussion.

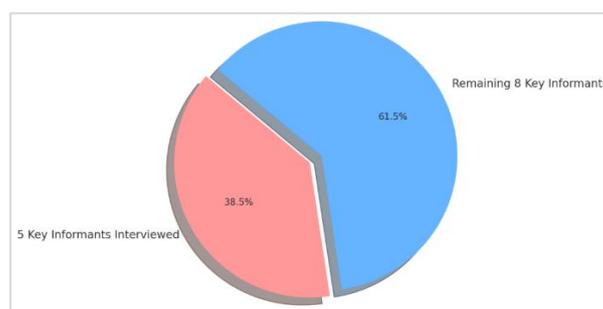


The target for having one focus group discussion with a farmer group in each of the municipality were met. The team had a discussion with one farmer group in each of the selected municipalities. During the group discussion, we received a lot of information about their local products, challenges and recommendations.

3.1.2 Interview with Key Informants

However, the interview with the selected respondents is quite challenging. So far, out of the 13 target key informants, the team only interview 5, which is only 38% of the target group for the interview. These 5 key informants include one senior official from relevant government Ministry, three representatives from local companies and one from international company. Despite of the participation rate was low, and considering of no response from the respondents' institutions despite of several attempt for a follow up, the research team decided to move ahead with the existing information. As a backup plan, the team collected secondary data to support the discussion of the result.

Figure 3:1: Key Informants for Interview

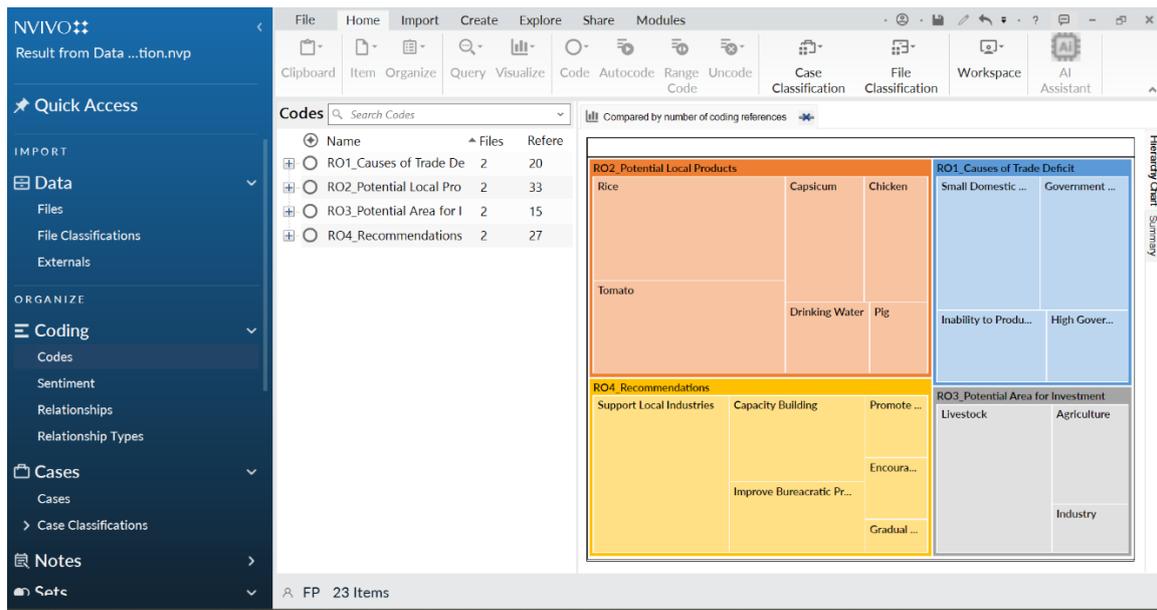


The pie chart in Figure 3.1, representing the proportion of 5 out of 13 key informants interviewed. The chart highlights the proportion of those interviewed versus the remaining informants.

3.2. Result from NVIVO Software

The result from focus group discussion with farmers group (File 1) and interview with key informants (File 2) were coded in NVIVO15 accordingly to the four Research Objectives (RO).

Figure 3.2: Compared by Number of Coding References from NVivo Software

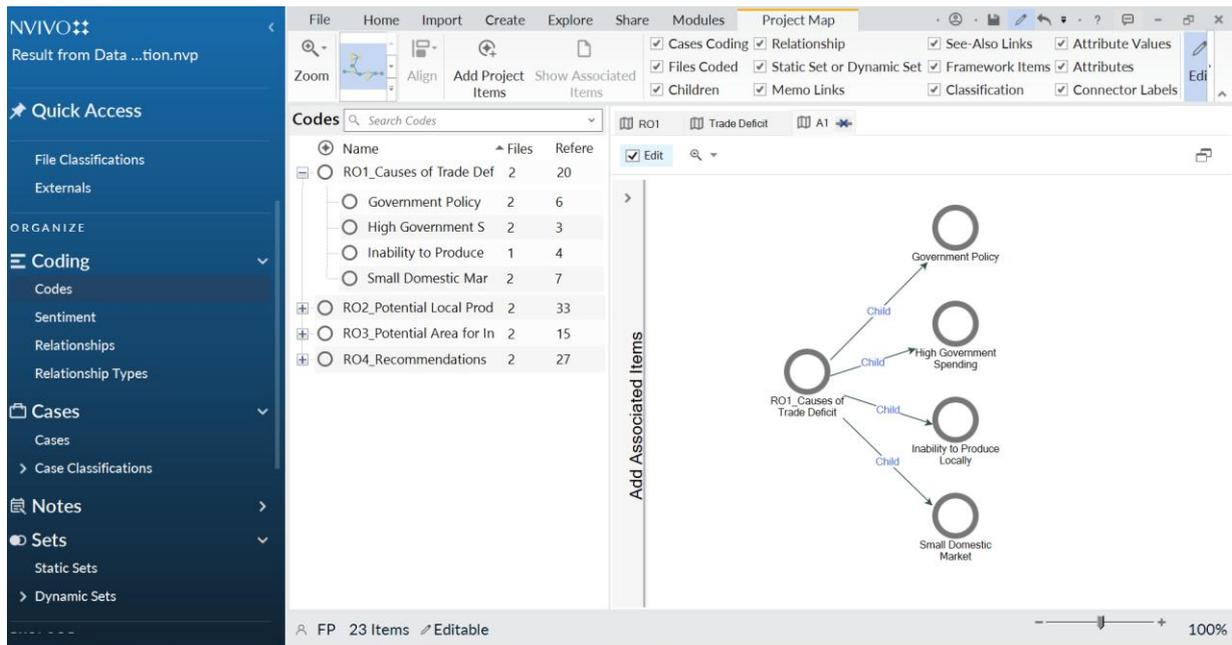


Source: Data Analysis from Nvivo 15

The figure 3.2 shows each research objective has different number of coded based on response from sample of the research. RO2 on Potential local products has a greater number of coding with 33, follow by RO4 on Recommendations with 27 and 20 for RO1 on Causes of Trade while only 15 codes for RO3 on Potential Area for investment.

In relation to research objective (RO1) on Causes of trade deficit, as shows in Figure 3.3, response from respondents shows that there are four important factors that contributing to the country’s deficit, namely: Government Policy, High Government Spending, inability to produce locally and small domestic market.

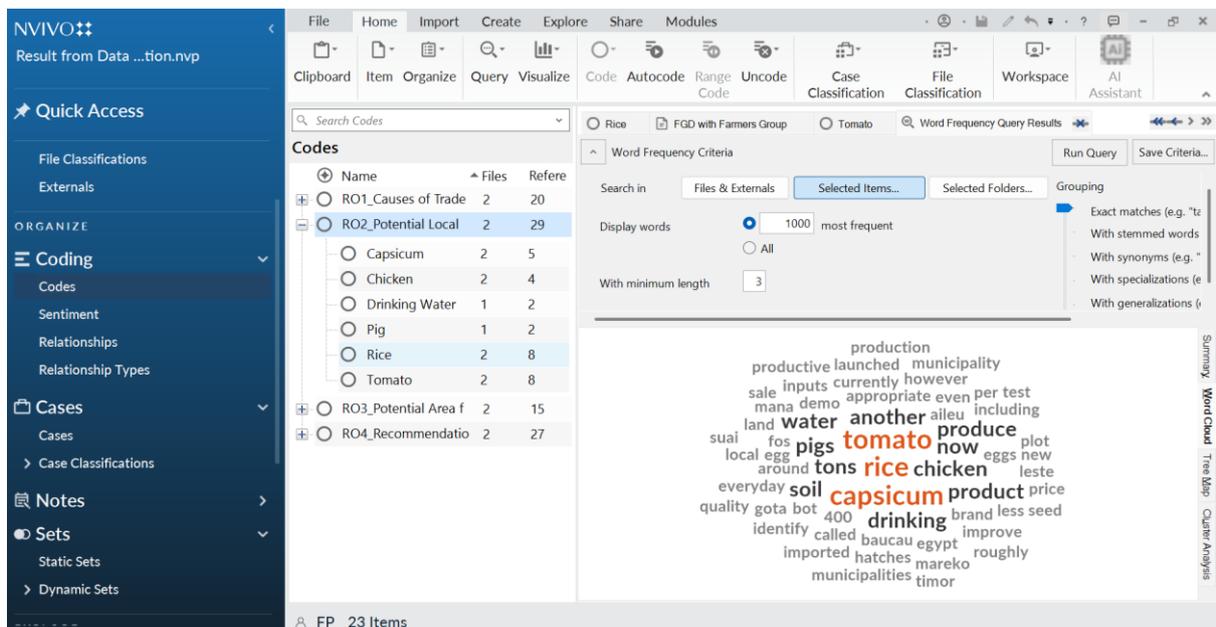
Figure 3.3: Projects Map for Causes of Trade Deficit



Source: Data Analysis from Nvivo 15

For research objective (RO1) on Potential of local products, as presented in Figure 3.4, rice, tomato, capsicum, chicken, pigs and drinking water are the local products that Timor-Leste has the potential to produce it locally.

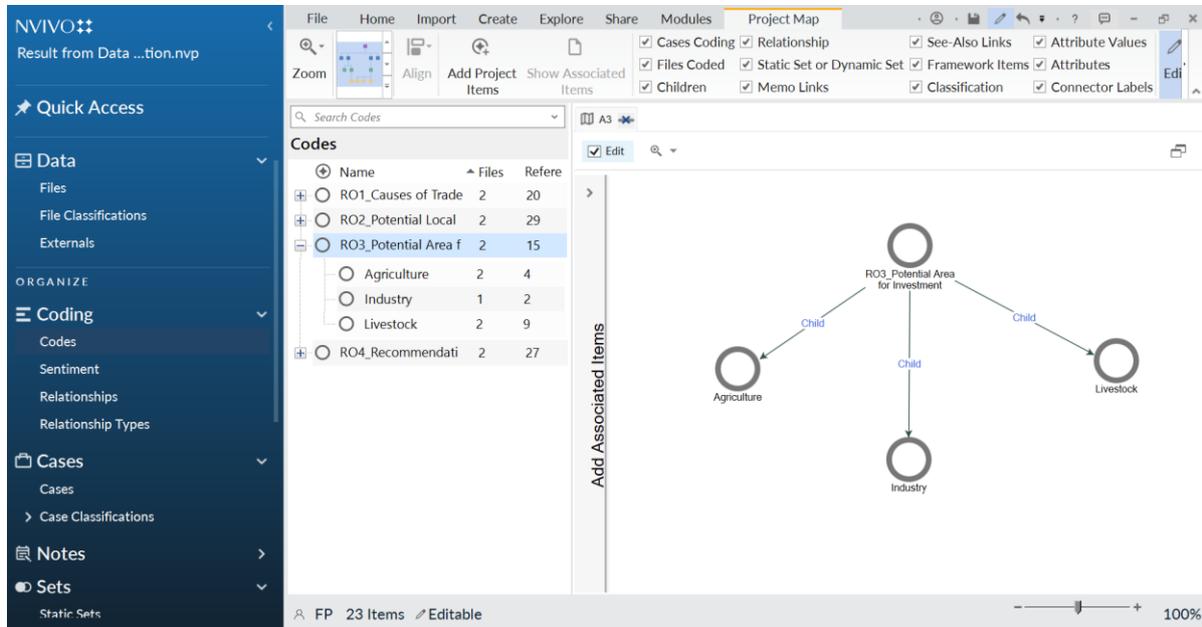
Figure 3.4: Word Frequency Query for Potential of Local Products



Source: Data Analysis from Nvivo 15

In relation to research objective (RO3) on potential areas for investment, Figure 3.5. shows that Agriculture, Livestock and Industry are the three potential area in the country.

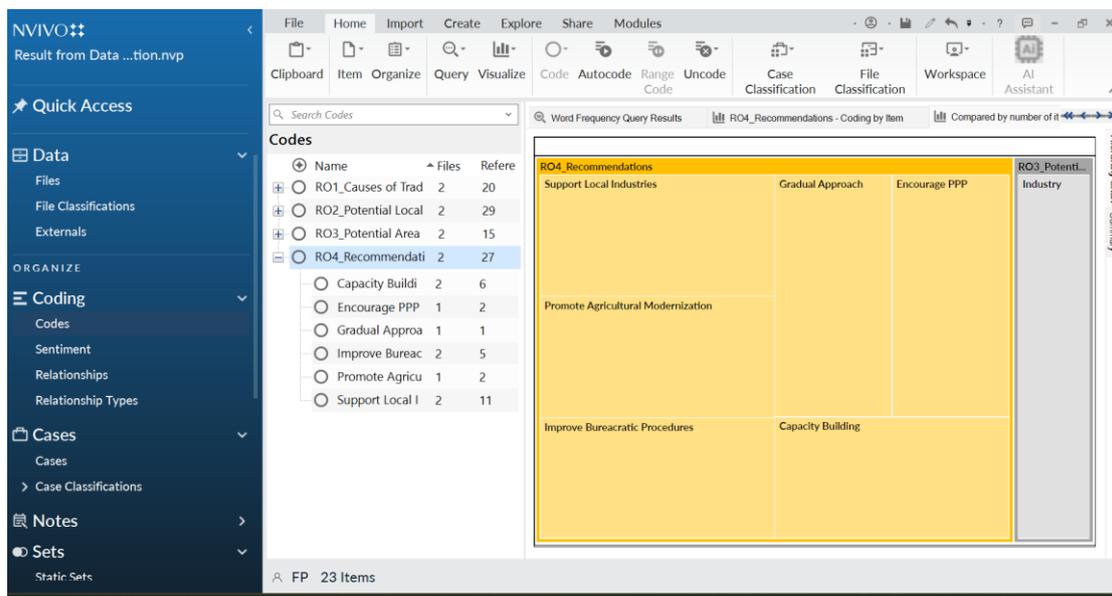
Figure 3.5: Projects Map for Potential Area of Investment



Source: Data Analysis from Nvivo 15

The last research objective (RO4) on Recommendation, respondents from both focus group discussion and interview proposed the following six suggestions as demonstrated in Figure 3.6, included: support local industries, promote agricultural modernization, improve bureaucratic procedures. Capacity building, encourage PPP and the need for a gradual approach.

Figure 3.6: Hierarchy Chart of Intersecting Code for Recommendations



3.3. Discussion of Result

3.3.1. Causes of Trade Deficit

Inability to produce enough goods and products domestically

There are number of factors that contribute to a country's trade deficit and the result from this research showed that there are four main factors. The first factor is the country's *inability to produce enough goods and products domestically* as one of the important factors that drive the government to imports more products from abroad.

This has been contributed by limited investment in developing domestic industries. Many local sectors, such as local manufacturing and processing, remain underdeveloped, leaving Timor-Leste reliant on imports for basic goods and services (Source: Interview with Respondent 3). There is a shortage of skilled labor in many local industries, including in agriculture sector. Education and training opportunities for local workers are limited, which impacts productivity and innovation (Source: Interview with Respondent 4). As a small island nation with a challenging geography, Timor-Leste faces logistical difficulties in transporting goods within the country. This makes harder for producers to distribute products efficiently and affordably (Source: FGD with Group 3).

The country's agricultural infrastructure is underdeveloped, with limited access to modern farming tools, technology, and irrigation systems. This impacts the efficiency and productivity of local agriculture. Timor-Leste is also prone to natural disasters like floods and droughts, which damage crops and disrupt food production. Additionally, land degradation and poor soil management practices affect agricultural yields (Source: Interview with Respondent 3).

Small domestic market

Another important factor is *small domestic market*, having only 1 million population, make it more difficult for local farmer to aim for bigger production. This has made their product become less competitive with imported products from abroad in the market. Due to the small size of the domestic market, there is limited local production to meet demand. This often leads to a higher reliance on imports, particularly for essential goods and consumer products, as businesses may find it more cost-effective to import rather than produce locally (Source: FGD with Group 2).

Many of local supermarket in Dili continue to rely more on imported goods and product due to quality and prices. One of the farmers groups during the discussion, informed that their focus

are more to get some money to support their family and children to school. Therefore, the attention to factors beyond prices and quality has not really as the priority of local farmers, which make them not sustainable in the long run (Source: FGD with Group 2).

A group of farmers in one municipality that the research team met for the discussion, they affirmed that:

“We can actually produce two times in a year; however due to no access to market, we limit the production to only once per year; there is no point to produce more if no one is going to buy our products, at the end of the day, we just throw away or feed animal”
(Source: FGD with Group 1)

High Government Spending

As a country heavily reliant on public sector spending and driven by strong economic growth fueled by revenues from the petroleum fund, high government spending has become a significant factor encouraging increased imports. The government’s focus on investing in the agricultural sector, such as by purchasing tractors to support farmers' groups, has led to the necessity of international procurement, as the country does not produce tractors domestically. (Source: FGD with group 2). This in line with the conceptual framework by Nepal and Thapa (2021) that identified government consumption expenditure as one of the contributing factors to a country’s trade balance.

Another respondent during the interview with the research team informed that the government continue to spent more money to other companies in overseas for many products that actually we can already produce locally. This has contributed to the increase in the country’s imports (Source: Interview with Respondent 3). The government often requires goods and services that are not produced locally, such as high-tech equipment, specialized vehicles, and foreign expertise. High government expenditure on such imports leads to an outflow of foreign currency, contributing to the trade deficit (Source: Interview with Respondent 1).

Government Policy

Some respondents consider that government policy for providing subsidy to communities discourage them to go for farming. It was easier for them to purchase rice in the supermarket rather than spent time for rice plantation that normally take number of months for harvesting (Source: Interview with Respondent 1). Other respondents stated that government bureaucracy procedures for exports were not really facilitate and encourage the company to do the export

since it took lengthy process and various different procedures that need to go through (Source: Interview with Respondent 2).

Number of respondents questioned about the government seriousness in protecting the local producers. One of the respondents stated that

There is no protection to local producer, the government authority continues to let some products including tomato coming through the border (Source: Interview with Respondent 4).

Another respondent also explained that:

The government policy that continues imported drinking water from other countries including one of the existing products has been banned the government authority due to its contamination based on the laboratory test (Source: Interview with Respondent 5).

3.3.2. Potential of Local Products

There are number of potentials of local products were identified during the data collection process. These local products including rice, tomato, capsicum in addition livestock particularly Pork and Chicken as well as beverages with focus on drinking water.

RICE

Rice production in Timor-Leste plays a crucial role in the country's food security and economy, as rice is a staple food for most of the population. However, the country faces challenges in achieving self-sufficiency in rice production due to country's topography and limited arable land for rice cultivation. Timor-Leste relies heavily on rice imports to meet its domestic demand. The production of rice is currently lower than the whole country needs, the country can only produce around 80,000 ton of rice while the country needs 150,000 ton per year for rice agriculture (Source: Interview with Respondent 1). As a result, Timor-Leste remains dependent on rice imports to fill the gap between local production and consumption.

The government through CLN (National Logistics Center) has been actively supporting rice imports to ensure food security. For example, in December 2023, the government allocated approximately US \$3 million to purchase around 4,000 tons of imported rice, adding to existing stocks to achieve a total of 6,000 tons in the warehouse (Timor-Leste, 2023a). However, this amount was less than in 2008, which the government spent around US\$6 million to purchase rice while it was US\$11 million in 2006/2007 (Timor-Leste, 2008). This shows that the budget allocation to purchase rice has declined within the period from 2006 to 2023.

The government has made efforts to boost local rice production by investing in irrigation systems, providing farmers with seeds and fertilizers, and encouraging better farming practices. Most rice is grown in the lowland areas, where irrigation is possible. In recent years, there have been initiatives to improve the productivity of smallholder farmers. In addition, the government has also introduced price-stabilising subsidies in October 2023 through signed agreements that set a maximum sale price of US \$12 per 25 kg bag (US \$0.50 per kg) for imported rice, and provided a subsidy of US \$5 per 25 kg bag to qualified importers to help achieve that price ceiling (Timor-Leste, 2023a).

The existing production of rice in Timor-Leste is on the average of from 0.5 to 1 ton and 1,5ton per hectare of land. However, a group of respondents from a farmer group stated that they actually produce two times in a year because they have water all years however due to no access to market, the limit the production to only once per year (Source: FGD with Group 1).

A recent assessment by a local group through soil test in a collaboration with one of organization from overseas, identified proper intervention for the soil, aiming to increase the production of rice per hectare of land, they expect to have the production more than 5 ton for a hectare of land (Source: Interview with Respondent 4). This show that Rice has the potential to produce locally, A study by National University of Timor Lorosa'e (UNTL) in cooperation with TradeInvest Timor-Leste and CNIC has also identifies rice as one of the top 5 products in the country (Correia, et al, 2023).

TOMATO

It is another product that the country has the potential to produce locally. There have been over productive in both Baucau and Aileu municipality however since there is no protection to local producer, some companies still imported tomato coming through the border from Indonesia because it has better quality and less price (Source: Interview with Respondent 4). Secondary data from WITS (2023), demonstrated that Timor-Leste imported around 15,000Kg of Tomato mainly from Indonesia.

A farmer group informed in one municipality that every time harvesting tomato, they can get up to 146 bucket full (a bucket of Kunci Mas of 20 Kg), which may equivalent of approximately around 2,900Kg of Tomatos. Tomato can be easily harvested in three months period and this can be done for more than two times in a year is there is a market. At the moment, the production is only one per year (Source: FGD with group 2). If one farmer group in a particular municipality that can produce up 2,900Kg, which around close to 20% of the total imports in

2023, this indicate already that Timor-Leste has the potential to produce more tomatoes in the future.

CAPSICUM

This local product is currently Timor-Leste imported from overseas, namely Egypt and Indonesia. There are actually already two municipalities that produce capsicum and supply to some of the local supermarket in Dili. Considering that it has good price in the market, around \$15/kg, investing more in this product, can boost local farmer's economy (Source: Interview with Respondent 4).

Data from OEC (2023) presented that Timor-Leste spent around USD\$11,000 simply to purchase Capsicum (dried, crushed and ground), which primarily from Indonesia, Malaysia, Singapore and Australia as well as from India.

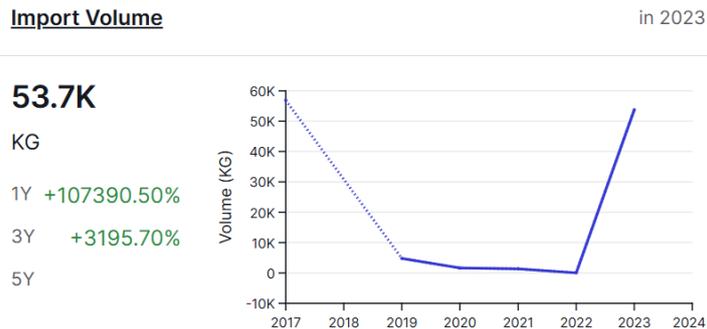
There has been an international company who started to explore this product in Timor-Leste. They have become the company that produce "Oleoresin Capsicum", which also offer number of health benefits to human being (Silverline Chemical, 2023). In other countries such as Australia, it used as Defensive Spray for law enforcement especially in riot and crowd control through irritate eyes (NSW, 2023). This show that the product has a number of potential benefits if the country can invest and manage it effectively.

PIG

It was identified as one of the livestock that often has value in the society, not only for commercial but also for cultural type activity purpose such as funeral and wedding. A local owner company who involved in the business said that there has been high demand for it, sometime they can accommodate all of the request simply because not enough stock of pig in their farm. Aside from that, they have also established contract with number of local restaurants in Dili to supply pork on regular basis (Source: Interview with Respondent 3).

Figure 3.7 showed that the import volume of frozen pork ham and shoulder has actually increased after the year of 2022 from below 10K Kg to around 55K Kg (equivalent to 60 Tons in 5 to 6 containers of 20 feet).

Figure: 3.7: Import Volume of Frozen Pork



Source: Tridge (2023)

The increase importation of frozen pork after 2022 is contributed by the increased in domestic demand. As Timor-Leste continues to modernize and develop its economy, urbanization and changes in dietary habits can lead to an increase in demand for meat products, including pork. Pork is a popular food item for cultural events and various ceremonies in the country, and as the population grows and incomes rise, more consumers may be seeking diverse meat options, including frozen pork, which is more accessible and affordable. Over the years, there has been a global shift towards more processed and convenient foods. Frozen meats, including pork, provide a more convenient, long-lasting option for consumers, especially in urban areas where refrigeration and storage can support the sale and consumption of frozen products (ACIAR, 2021).

Another important reason is the limited of local production: Timor-Leste’s agricultural sector, particularly its livestock industry, faces several challenges, including limited infrastructure, small-scale farming practices, and occasional issues with disease outbreaks (such as African Swine Fever, which has affected pork production globally). These factors hinder the ability of the country to meet domestic demand through local production alone, pushing the country to rely more heavily on imports (ACIAR, 2023)

However, this number can be reduced by providing necessary support to Timorese families and companies who involve in the pig farming. Since Pig is the most livestock that own by most of Timorese households, around more than 70% with at least a household has 3 pigs or less. Despite of challenges face in pig farming such as diseases, nutrition and market limitation however, through better husbandry, biosecurity measures, technical and financial support, these can increase the production of pigs in the country in the future (MAF, 2020).

CHICKEN

Considering that majority of households in Timor-Leste, around 70% own Chicken, and an increase of 32% in chicken population between the period of 2010 to 2015, made Chicken to be the second most important livestock after pig that has the potential for more production in the country (TOMAK, 2018).

In 2019, Timor-Leste imported fresh or chilled whole poultry of around 78,000Kg with total value of USD\$103,000, of which 65% coming from United States of America, follow by 34% from Indonesia and 1% from Malaysia (WITS, 2019).

If on average, a hen can produce 36 eggs per year and each household has at least 4.5 chicken (TOMAK, 2018). Meaning that if a farmer has 100 hens, they can get 360 eggs in every year. An owner of local company that the research team met, mentioned that the decline in the chicken's breeding and production were simply due to diseases, lack of farmer knowledge for the treatment and protection and predators such as dog and goats, however, these issues can be tackled to ensure the high number of survival rate of chicken, if extra care and investment in capacity building become the top priority (Source: Interview with Respondent 3).

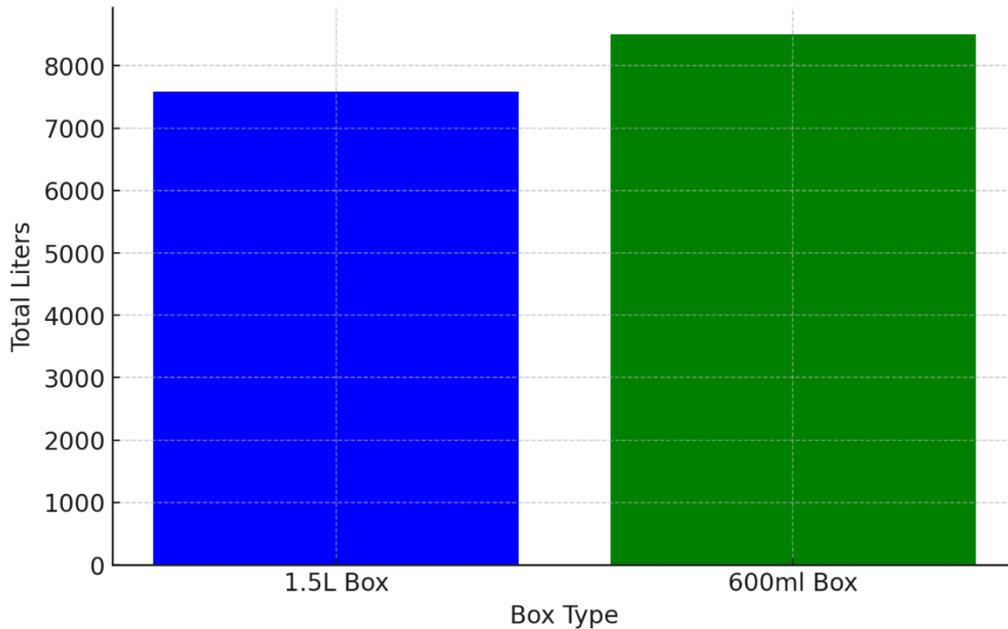
DRINKING WATER

Water is an important part of people live that the country has the potential to produce locally. Products of from local companies have demonstrated that the country's capacity to provide this product to the local market. Their production has been in several options, starting from 240ml cup, 330ml bottle, 600ml bottle, 1.5L bottle until 5L bottle and they have supplied the products number of local supermarkets in the capital of Dili and even exported to overseas. According to a respondent whom the principal investigator had a chance to talk to, he stated that instead of continuing with importation of other drinking water products from overseas, the current existing local should be promoted in the country (Source: Interview with Respondent 5). The research team has requested for data on production from both local companies, however, considering the confidentiality issues, the company can not shared the data.

Data from INE (2025) shows that out of beverages that Timor-Leste imported including drinking water with various brand. This ranges from Aqua Danone, Aqua Mountain Spring water and Aquase. Figure 3.8 presented that in 2024, based on availability of data, Timor-Leste imported Aqua Danone of 1500 ml with around 7,600 boxes while 600 ml around 8,500 boxes. The current price in the local market of 1500ml is US\$6 and for 600ml is US\$5, meaning that

those 7,600 boxes represent of US\$45,000 for and US\$42,500 for 122,400 liters, made up with total of US\$87,000.

Figure 3.8: Total Boxes of Aqua Danone Imported in 2024



Source: INE-TL (2025)

Instead of spending more money to overseas, purchasing the drinking water, a product that Timor-Leste has the potential to produce locally, Timor-Leste should consider gradually to reduce the importation based on the capacity to produce by local companies (Source: Interview with Respondent 5).

In addition to all of these potential products, the research team also identified another potential for production of Vanilla. Despite of the challenges of the volume of production, however the company owner has started with innovative products which has now available in number of local supermarkets in Dili including in in Dili and also as souvenir for Timor-Leste's high-level officials (Source: Interview with Respondent 2). This is another local product that can be explored further in the future.

3.2.3. Potential Areas for Investment

Agriculture Sector

Agriculture is one of the important sectors for investment in the future, considering that all local products that were identified during this research from the sector and potential land for agriculture production (Source: Interview with Respondent 1). Agriculture Census in 2019 showed that 66% of household in Timor-Leste depends on agriculture (Timor-Leste, 2019)

A report from TradeInvest Timor-Leste (2023) also showed that Agriculture become the third sector that receive around 16,75% of the total investment. Based on the government budget submitted to the National Parliament in 2023 showed that the allocation for Agriculture sector was USD\$21 million and out of this total, USD3.6 million for Laivai irrigation system (Timor-Leste, 2023). Overall, the agriculture, Forestry and Fishing sector has experienced an increase in growth from 5,5% in 2022 to 5,8% in 2023. There is an ambition to increase this by 10% in the next few years to come through increasing agriculture production locally particularly for rice. In 2025, the government has increased the allocation of budget to Agriculture sector to USD40,8 million, an increase of almost double that in 2023 (RDTL, 2025).

Livestock

Besides agriculture, livestock with particularly focus on the two products as discussed above, this becomes an important sector to be recommended as areas for investment. Considering that the current investment made, around 25% goes to this sector (TradeInvest Timor-Leste, 2023). The government of Timor-Leste through Ministry of Agriculture budget for 2025, has allocated around USD98,000 to livestock. According to Factsheet by TradeInvest (2025), the investment opportunities for this area included for poultry, eggs and even for the production and processing to meet the need at the local market. MDF (2023) has also invested in livestock particularly in pig farming in the beginning of 2015. Despite of the challenges face including on low production and limited sales however through the support from MDF, the farming managed to produce more and sale their products to markets. This has made livestock to be potential areas for attracting more investment in the future.

Industry Sector

This sector has attracted majority of the investment into the country, approximately of around 41% of investment in the country goes into this sector (TradeInvest Timor-Leste, 2023). Considering the country's potential for local products, there is a significant opportunity for

import substitution. Not only can the country focus on producing raw materials, but there is also potential for processing these products domestically, rather than solely exporting raw materials abroad. Establishing industries, such as food production, could include ventures like tomato sauce manufacturing."

4. Conclusion and Recommendations

4.1. Conclusion

In summary, Timor-Leste faces persistent trade deficits due to its heavy reliance on imported goods, particularly food, manufactured products, and fuel, while its exports remain limited and concentrated in raw materials such as coffee.

This imbalance weakens economic stability and increases dependency on external markets. Import substitution, producing domestically what is currently imported, offers a potential strategy to reduce the trade deficit.

By fostering local industries, supporting agriculture, and encouraging small-scale manufacturing, Timor-Leste can enhance self-sufficiency, create jobs, and strengthen economic resilience. However, the success of this strategy depends on improving infrastructure, enhancing human capital, and ensuring technology transfer to build competitive industries.

4.2. Recommendations:

This research would like to propose the following recommendation for consideration:

1. Promote Agricultural Modernization

Agriculture remains the backbone of Timor-Leste's economy, but productivity is limited due to traditional farming methods, poor irrigation, and limited access to technology. Investing in modern irrigation systems can help farmers move from rain-fed farming to year-round cultivation, reducing vulnerability to droughts and climate change. Introducing improved seeds, mechanized equipment, and sustainable farming practices can significantly increase yields. Additionally, providing farmers with training in modern techniques, pest management, and post-harvest handling would enhance food quality and reduce waste. These measures would help Timor-Leste reduce its reliance on imported food products and improve food security (Source: FGD with group 4).

2. Support Local Industries

A strong domestic industry is critical for reducing dependence on imports. By supporting SMEs in potential areas identified in this research, it can add value to its raw resources and create jobs locally. For example, instead of exporting raw agricultural produce, SMEs could process rice, tomato, and Capsicum into packaged food products that meet market standards. Policies such

as tax incentives, access to affordable credit, and technical support would encourage entrepreneurship and innovation in these sectors (Source: FGD with group 4).

3. Capacity Building

A skilled workforce is the foundation of sustainable economic growth. Strengthening vocational training and technical education would prepare young people and workers to meet the demands of emerging industries. Training programs should focus on practical skills such as food processing, ICT, and business management. Partnerships with international institutions could help upgrade curricula and align skills training with global standards. Equipping the workforce with technical expertise will reduce reliance on foreign labor and empower Timorese citizens to lead industrial development (Source: Interview with Respondent 1).

4. Improve Bureaucratic Procedures

Improving bureaucracy is critical for delivering better outcomes especially in the areas for trade activities because when administrative processes are leaner, service delivery improves. Digital or e-Governance push: Creation of a national ICT agency and deployment of e-government portals for public services so that citizens and businesses can access/licence/permits online, reducing face-to-face bureau. This will only facilitate the business activities but also can attract more investor coming to the country (Source: Interview with Respondent 2 and 3).

5. Encourage Public Private Partnership (PPPs)

Public-private partnerships can be a catalyst for attracting investment, sharing risks, and leveraging expertise. By creating clear legal frameworks and incentives for PPPs, the government can encourage both domestic and foreign investors to participate in projects aligned with national priorities, such as agriculture, food processing, and industry development. PPPs could also bring in advanced technology and management practices that accelerate the growth of local industries (Source: Interview with Respondent 1 and 3).

6. Gradual Approach

Import substitution should follow a phased and strategic approach. Initially, the focus should be on essential goods where Timor-Leste already has comparative advantages, such as rice, tomatoes, Capsicum, pigs, Chicken and drinking water. Once domestic production of these goods reaches sufficient levels, the country can gradually expand into more complex industries, such as processed foods. This approach minimizes risks, allows for learning and capacity-

building, and ensures that domestic industries grow at a sustainable pace (Source: Interview with Respondent 5).

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Appendix 1: Justification for Changes in Final Report

No.	Name of Evaluators	Feedback from Examiner	Our Response
1.	Dr. Cristovão dos Reis	Aumentar as informações na figura 1.2 e analisar.	We have included more information to explain Figure 1.2. in page 4 and 5
		Melhorar a metodologia.	More information is added to the page 9 to 12 including on steps for data analysis using Nvivo15 in page 12
2.	Dr. Helio Augusto	Rekomenda Peskizador Utiliza dados sekundáriu no presiza buka mos dados despeza governu hodi sosa hare'e (fos) armajena iha armazenamentu.	We have included the secondary data and data from government expenditure in page 19
3.	Dr. Lionel Xavier	Favor hare gráfiku konaba na'an fahi nian nee, sira dados loss ka lae no explika ho língua sientífika, simples no asesível.	The figure has been reviewed and corrected in page 22.

Appendix 2: Research Instrument

Guiding Questions for Focus Group Discussion (FGD)

1. Can you tell us about your group?
2. What products that your groups are working on?
3. How was the production? In terms of the volume?
4. What were the main challenges? And how you respond it?
5. What are the recommendation for future improvements?

Guiding Questions for Interview with Government Official

1. Can you tell us about the role of your institution relate to? (each of their responsibilities)
2. What were the main challenges? And how you respond it?
3. What are the recommendation for future improvements?

Guiding Questions for Interview with Companies

1. Can you tell us about your companies?
2. What products that your companies are working on?
3. How was the production? In terms of the volume?
4. What were the main challenges? And how you respond it?
5. What are the recommendation for future improvements?

Appendix 3: Inform Consent Form



INSTITUTE OF BUSINESS
Acreditação Institucional Concedida Pelo Diploma Ministerial Nú.:30/2022 de 3 de Agosto
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Formuláriu Konsentimentu Informadu

Titlu Peskiza

“Hamenus Défisit Komersial liu hosi Subtituisaun Importasaun iha Timor-Leste” (*Reducing Trade Deficit through Import Substitution in Timor-Leste*).

Objektivu Peskiza

Objetivu husi peskiza ne'e maka hanesan :

1. Buka hatene kona ba kauza husi defisit komersial
2. Identifika produktu importasaun ne'ebé Timor-Leste iha potencia atu produs iha rai laran
3. Informa ba Governu no seitor privadu kona ba area potencial ba investimentu
4. Oferece rekomendasaun ba institusaun governu relevante atu mellora politika relasiona ho atividade komersiu

Prosedimentu

Konkordansia para participa: Nudar respodenti ba Peskiza, ami sei husu ita nian konkordansia para ekipa bele halo grupo diskusaun/intrevista ho perguntas nebe maka partilha ona ho ita antes. Perguntas sira ne iha relasaun ho peskiza ida ne no ho area de responsabilidade husi ita bot nian rasik.

Partisipasaun Voluntario: Ita nian partisipasaun iha peskiza ne study is totalmente voluntario. Ita iha direitu para atu decidi atu dada an fali husi estudu ne iha kualker tempo sem iha konsekuensia ruma.

Konfidensial: Ita nian informasaun no resposta nebe nebe maka ami foin antes ona, sei rai konfidensial. Ami sei la mensiona ita nian identidade iha ami nian publikasaun no informasaun nebe ami foti, sei rai iha fatin nebe seguru, so, ema nebe iha autorizasaun maka bele asesu ba informasaun sira ne'e.

Gravasaun: Atu aseguira ekipa bele akumula resposta hotu nebe hatu, ami sei halo gravasaun lian. Wainhira kuandu ami transfer hotu ona, ami sei apaga gravasaun ne'e.

Durasaun: tempo ba intrevista, sei halo dentru de minimum 30 minutos no maximum maka 45 minutos, depende ba diskusaun no resposta nebe ita oferece.

Perguntas: karik ita iha prekusasaun ou perguntas ruma, bele komunika direita mai iha ami nian membru ekipa peskizador, Sra. Joasenita Hornay, iha numeru telefoni: +670 7812 8541

Konsentimentu

Partisipa iha peskiza ne'e, hau voluntariamente konkorda atu fornese informasaun. Hau kumpriende natureza husi peskiza ne no hatene hau nian direitu nudar partisipante.

Data...../...../ 2025

Naran Partisipante : _____

Pozisaun : _____

Asinatura : _____

Appendix 4: Calendar of Activities

Activities / Month	April		May				June				July				August				September				October			
Week	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1. Research Proposal	x																									
- Submit revised version	x																									
2. Data Collection	x	x	x	x	x	x	x	x	x	x																
- Identify, send letter of request & follow up	x	x	x	x																						
- Interview in Dili			x	x	x	x																				
- Focus Group in District							x	x	x	x																
3. Data Analysis											x	x	x	x												
- Transfer result of interview and FGD											x	x														
- Translate result from Tetum to English												x														
- Analyse result using NVIVO Software													x	x												
4. Writing up Report															x	x	x	x								
- Start drafting the report															x	x										

