Rebalancing Priorities to Harvesting Prosperity
Timor-Leste Economic Report

Rebalancing Priorities to Harvest Prosperity

July 2023
Acknowledgment

The Timor-Leste Economic Report (TLER) is a bi-annual World Bank report that assesses recent macroeconomic developments, outlook, and risks, as well as specific development challenges for the Timorese economy. In doing so, the TLER aims to inform the public policy debate and is geared towards a wide audience, including the general public, the government, the private sector, civil society organizations, and other domestic and international stakeholders.

The TLER is a product of the World Bank Jakarta and Timor-Leste office and receives strategic guidance from an editorial board chaired by Satu Kahkonen, Country Director for Indonesia and Timor-Leste. The report is prepared by the Macroeconomics, Trade, and Investment (MTI) Global Practice team, under the guidance of Lars Christian Moller (Practice Manager), Dina Umali-Deininger (Practice Manager) Bernard Harborne (Resident Representative), Habib Rab (Program Leader and Lead Economist), Achim Daniel Schmillen (Program Leader) and Vikas Choudhary (Program Leader and Lead Agriculture Specialist). The report production is led by Alief Aulia Rezza (Senior Country Economist) and Yus Medina Pakpahan (Research Analyst). Ana de Oliveira provided administrative support and coordinated the organization of the report launch event. The report was formatted by Arsianti.

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KEY INDICATORS

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Notes: Population and GDP data are for 2019. Poverty and inequality data are for 2014 (with revised PPPs).
Summary

1. Recent Developments

The economy continued its recovery in 2022, expanding by 3.9 percent, fueled by public consumption and investment. Private investment rose from an exceptionally low level while net exports continued to be a drag on growth. Despite the implementation of fiscal measures like the food basket program, thirteen-month salaries, and fuel vouchers, which led to increased government spending and a larger fiscal deficit, private consumption only exhibited weak growth.

The recently released 2021 Labor Force Survey reveals challenges that are consistent with weak private demand and recovery. Timor-Leste has the lowest labor force participation rate compared to peers. This can be partially attributed to a lack of vibrancy in the private sector, insufficient job opportunities being created, and the possibility of high reservation wages. Furthermore, structural factors also contribute to this issue, particularly due to the rising enrollment in secondary schools and the persistently high fertility rates, resulting in increased household responsibilities.

Headline inflation soared in March 2023 at 9.6 percent, spurred by significant increases in food and non-food prices. High inflation is part of a global trend driven by prices of tradable goods. Within Timor-Leste, the government’s policy of enforcing higher excise taxes on tobacco products, implementing import and sales taxes and applying excises to sugar and sugary beverages, partially drove the inflationary trend. A steady decrease in inflation was, however, noted for fuels and lubricants, reflecting the average decline in the global oil prices.

At close to 110 percent of GDP, the government’s approved budget for 2023 is slightly lower than the allocation for 2022 but remains significantly higher than the actual spending in 2022. Public transfers increased significantly, rising from 21.8 percent of GDP before the pandemic to 55.8 in 2023. Furthermore, the fiscal deficit has continued to grow and reached 58.9 percent of GDP in 2022, one of the highest in the world, considerably higher than the pre-pandemic average of 36.3 percent of GDP.

The cessation of oil and gas production in 2022 flipped the current account from a surplus in 2021 into a deficit in 2022. This situation highlighted the country’s dependence on hydrocarbon and coffee exports and its underdeveloped private sector. Despite trade and investment openness, attracting foreign direct investment (FDI) has been challenging. The country’s heavy reliance on imports has consistently strained its current account. Since FDI and other portfolio investments remain minimal, the country has resorted to using withdrawals from the Petroleum Fund to finance its current account deficit. The balance of the Fund decreased by 6.8 percent year-on-year by the end of Q1 2023.

2. Outlook and Recommendations

The economy is projected to grow at an average of 3.1 percent over the medium term. Political stability would facilitate an increase in private investment and a boost in consumer confidence, leading to higher private consumption. Furthermore, the government’s focus on reducing bottlenecks in infrastructure spending is expected to stimulate growth by improving the execution of various infrastructure projects.

Given the end of oil production and a tumultuous year for financial markets, the balance of the Petroleum Fund will experience faster depletion and is projected to be entirely depleted by 2034. Withdrawals from the Fund have been the key in financing persistent budget and current account deficits. The Fund is also critical for ensuring a consistent US dollar supply. As such, the depletion of the Petroleum Fund threatens long term macroeconomic stability and the continued use of the US dollar as legal tender.
Downside risks include political instability and natural disasters. Following the conclusion of the parliamentary election in May 2023, it is crucial for the new Government to maintain the consistency of high-level policies. Without the political gridlock and budget approval delays that plagued the country from 2017 to 2020, Timor-Leste's income per capita might have been higher by USD 300 to USD 500 annually (See Box 2.1).

The new constitutional government may want to consider institutionalizing fiscal consolidation through robust fiscal rules. Both revenue mobilization and expenditure rationalization efforts should not only be maintained but also enhanced. Given that significant increases in public spending have had a limited impact on Timor-Leste's medium-term economic growth, it is possible to sustain growth levels with a reduced budget.

Achieving the 7 percent growth target outlined in the government program is dependent on supporting private sector development and enhancing competitiveness. Efforts to improve the productivity of the agriculture sector will be vital (see Chapter 3). A flourishing agricultural sector ultimately holds the potential to stimulate rural development and alleviate poverty.

3. Special Focus: Rebalancing Priorities to Harvest Prosperity

Investing in agriculture plays a crucial role in fostering an inclusive economy that benefits a significant portion of the population. Agriculture has been consistently the biggest share of Timor-Leste economy outside the public sector for more than a decade. The latest 2021 Labor Force Survey show that 38 percent of employment is still in the agriculture sector making it the largest sector of employment in Timor-Leste.

Despite its significance, the agriculture sector in Timor-Leste is characterized by low remuneration for farmers and low productivity levels. On average, agricultural households in the country generate a meager economic value annually, resulting in unsustainable low returns. This situation has not improved significantly since 2014.

To achieve inclusive economic development and foster broad-based employment creation, it is imperative to prioritize investment in agriculture. However, maintaining the status quo in the agricultural sector will not suffice, as the prevailing low productivity levels make it impossible to support adequate livelihoods. Without substantial improvements in productivity, income levels, and commodity mix diversification, most agricultural households will remain trapped in poverty.

It is crucial to make concerted efforts to improve agricultural productivity and establish sustainable economic opportunities for agricultural households. These efforts should include increasing farmer incomes through enhanced productivity in small-scale agriculture, addressing the growing mismatch between demand and domestic supply of key food categories, shifting the focus from cereals to high-value commodities, emphasizing productivity improvements through the adoption of improved seed varieties, low-cost technologies, and better storage methods, as well as supporting the development of food processing, particularly through Micro, Small, and Medium Enterprises.
1. Recent Developments

1.1. Global growth projected to slow in 2023 whilst commodity prices remain at pre-pandemic levels

Amid persistent global economic challenges, the East Asia Pacific (EAP) region shows signs of recovery. The global economy remains in a precarious state amid the negative shocks of the pandemic, Russia’s invasion of Ukraine, and the sharp tightening of monetary policy to contain high inflation. After growing 3.1 percent last year, the global economy is set to slow substantially in 2023, to 2.1 percent. In the EAP region, growth is projected to strengthen to 5.5 percent in 2023 from 3.5 percent in 2022, largely driven by robust activity in China. While headline consumer price inflation has started to moderate, it remains above Central Bank targets in most countries in the region. Economic growth in Pacific Island countries has remained sluggish.¹

Despite a significant drop since last year, commodity prices remain higher than their pre-pandemic levels, impacting food security. The surge in prices after Russia’s invasion of Ukraine has largely been unwound on a combination of slowing economic activity, favorable winter weather, and a global reallocation of commodity trade flows. Nonetheless, prices of all major commodity groups and about four fifths of individual commodities remain above their 2015-19 average levels. Fertilizer prices reached an all-time high in real terms in 2022, while the food price index reached its second-highest level in real terms. The surge has contributed to higher consumer prices across the globe. The World Food Program estimates that 345 million people will face acute food insecurity.²

¹ Constraints to growth in the Pacific Island Countries include lack of connectivity and relative remoteness from international markets, lack of scale due to small land areas and populations, fragmentation through the dispersion of population and production, and environmental fragility.

² WFP Global Operational Response Plan (2023). The February 2023 Timor-Leste Acute Food Insecurity Snapshot shows a slight reduction, albeit still relatively high, of total population face high levels of acute food insecurity (IPC Phase 3 or above), from 22 percent to 20 percent.
1.2. Sluggish economic recovery and persisting negative output gap in Timor-Leste despite high government spending...

Timor-Leste’s economy continued its gradual recovery, expanding by 3.9 percent in 2022, higher than other small states in the Pacific (Figure 1.1). Growth was fueled by public consumption and public investment (Figure 1.2). The run-up to the 2022 Presidential Election momentarily disrupted government spending, but economic activity was strong following the first full year without COVID-19 restrictions since 2020. The end of the State of Emergency accelerated mobility, boosted domestic demand, and increased foreign arrivals. Public consumption and public investment rose by 8.0 percent and 44.2 percent, respectively.

Non-public sector demand, however, has remained sluggish. Though there has been some recovery in private investment, this is reflective of base effects from a prolonged period of declining private investment between 2018 and 2021. Private consumption grew by a modest 1.9 percent in 2022 but has been weak despite the sharp drop during the pandemic in 2020 and 2021, an uptick in remittance inflows in 2022, and various government support programs. Fiscal and quasi fiscal measures in 2022 to boost private consumption included the universal payment of thirteen-month salaries, fuel vouchers, Cesta Basica (the Food Basket program) and Bolsa de Mae programs, as well as increased funding to EDTL (Electricidade de Timor-Leste) to stabilize electricity prices.3

Private consumption growth has remained weak due to successive economic shocks. The political stalemate from 2017 to 2020 (See ), the COVID-19 pandemic (2020-2021), a natural disaster in 2021, and escalating domestic prices throughout 2022, have dented consumer confidence. Households have curtailed consumption and increased precautionary savings. Notwithstanding the small share of banked population, data from Banco Central de Timor-Leste (BCTL, the Central Bank of Timor-Leste) reveals continued year-on-year growth in demand deposits and savings deposits in 2022 (Figure 1.3).

The sluggish recovery has sustained a negative output gap that is closing slowly. Following the shocks of 2020 and 2021, potential GDP in Timor-Leste declined. COVID-related restrictions led to a large negative output gap (Figure 1.4), with actual output falling significantly short of potential. Despite very high public spending in 2021-22, Timor-Leste has not yet closed its output gap. The diminishing returns of government spending on overall growth is indicative of inefficient public spending.

3 Bolsa de Mar targets poor and vulnerable households with children.
Figure 1.2: Government spending drives recovery, but other private demand has been sluggish.
(percentage points of contributions)

Figure 1.3: Growth in consumer deposits may signalling precautionary savings
(end of period percent change, YoY)

Figure 1.4: Economic shocks have led to a decrease in Potential GDP, but output gap persists.

Figure 1.5: Lower unemployment in 2021 but larger working age population outside the Labor Force
(working age population by status, (thousand))

1.3 … consistent with significant labor market challenges.

Weak recovery and a negative output gap are consistent with labor market challenges. According to the 2021 Timor-Leste Labor Force Survey (TL-LFS) conducted during the pandemic in 2021, more than half of the Working Age Population (WAP, 15+ years old) was outside the labor force due to a scarcity of formal employment opportunities(Figure 1.5), forcing them into subsistence work. The labor force participation rate dropped from 67 percent in 2016 to 35 percent in 2021. Significant gender disparities also persist, with even fewer women participating in the labor force compared to men (Figure 1.6).

4 The 2022 TL-LFS is the third comprehensive standalone Labor Force Survey conducted in Timor-Leste since its independence in 2002, following the first in 2010 and the second in 2013. A smaller-scale labor force study was carried out in 2016 using data from a child labor survey, resulting in findings that may not align directly with those from the full survey years.

5 Individuals classified as being outside the labor force include those who are neither employed nor unemployed, such as students, senior citizens, and those occupied with unpaid domestic tasks or familial responsibilities.
While the global pandemic severely impacted labor market conditions across all countries, the situation in Timor-Leste stands out. Compared to other small states surveyed during the pandemic, Timor-Leste has the lowest labor force participation rate (Figure 1.7). There is a significant gap of nearly 15 percent between Timor-Leste and Mauritius, which has the second-lowest labor participation rate at 48.9 percent. Furthermore, Timor-Leste consistently ranks at the bottom when comparing labor force participation rates for younger age groups (15-24 and 25-54) in peer countries (Figure 1.8).

Weak growth and pandemic impacts aside, low labor force participation is in part attributed to structural factors. For example, low labor force participation among the youth could be due to the sharp rise in the secondary school enrollment ratio in Timor-Leste in recent years (Figure 1.9). However, this is a partial explanation since there has also been a steady increase in the number of youths who are not engaged in employment, education, or training (NEET) in Timor-Leste (Figure 1.9). The high levels of NEET youth suggest that many young people may be discouraged from studying or working, or they may lack access to education, employment, or training opportunities.

Factors such as a potentially high reservation wage and household responsibilities in Timor-Leste have partly contributed to the low labor force participation rate. Timor-Leste has one of the highest rates of social protection expenditure among developing nations (Figure 1.12). It also has a high ratio of average monthly earnings to per capita GDP (Figure 1.12), signaling a potentially high reservation wage. This could be linked to high levels of social protection. The reservation wage could also be associated with the rising remittance flows from abroad, further discouraging some members of the working-age population in Timor-Leste from seeking or accepting employment. Lastly, a combination of relatively high fertility rates and significantly lower women’s participation could indicate personal or family-related reasons for the low labor force participation rate, including taking on family or household responsibilities.

The 2021 Labor Force Survey highlights the growing role of the public sector as an employer in Timor-Leste. The proportion of public sector employment has increased from 14 percent in 2010 to 22 percent in 2021 (Figure 1.13). This trend aligns with the pattern of government expenditure on wages and salaries, which has consistently risen over the years, along with the expansion of public institutions. These findings may also suggest significant job losses in other sectors. Despite substantial government support for the private sector during the pandemic, the private sector has struggled to retain workers and adapt to new working methods in response to the pandemic.

These developments are reflective of the challenges and opportunities inherent in the country’s population structure. With nearly 40 percent of the population below the age of 15, the youth dependency ratio is relatively high, placing significant pressure on formal and informal safety nets. Over the next 15 years, approximately 480,000 individuals are expected to enter the workforce, a relatively high figure compared to Fiji, Guyana, and Bhutan. Among its peers, only Comoros has a slightly higher share of the population under the age of 15 than Timor-Leste. While this presents a substantial demographic opportunity, it also underscores formidable challenge in terms of the need to create jobs.

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6 Close to 8 percent of those who choose to remain outside the labor force stated that they neither need nor desire to work.
7 Among other comparator countries, Timor-Leste has the second lowest share of public sector employment, surpassed only by Bhutan. Meanwhile, Mauritius, Botswana, and Comoros have shares of public employment at 28 percent, 32 percent, and 33 percent respectively.
Figure 1.6: Low labor force participation, even more so among women. (percent)

Source: 2021 Timor-Leste Labor Force Survey, ILO

Figure 1.7: Timor-Leste's labor force participation is the lowest among selected small states… (labor force participation rate 2021, percent)

Source: ILO

Figure 1.8: … with persisting gaps across age groups. (labor force participation rate by age 2021, percent)

Source: ILOSTAT

Figure 1.9: Compared to its peers, Timor-Leste has a higher secondary enrolment ratio… (secondary school enrolment (gross, percent))

Source: WDI

Figure 1.10: … but also a high number of youths not in employment, education, or training (NEET) (percent of total youth NEET)

Source: 2021 Timor-Leste Labor Force Survey, ILO

Figure 1.11: Higher social protection expenditure as Percent of (non-oil) GDP in Timor-Leste … (share social protection spending of GDP)

Source: 2021 Timor-Leste Labor Force Survey, ILO; Social Protection Country Reviews and Assessment (Philippines and
1.4. Despite a decline in global commodity prices, headline inflation continues to rise and remains broad-based.

Headline inflation in Timor-Leste remained high, driven by food prices and the price of tradable goods. The average year-on-year inflation rate during the first three months of 2023 surged to 9.7 percent, compared to a 6 percent average during the same period in 2022. In comparison to other countries in the region, Timor-Leste stands notably above the Philippines and Indonesia, which recorded inflation rates of 7.6 percent and 5 percent respectively. However, Timor-Leste is at a similar level to other small states like Botswana and Mauritius, where inflation rates reached 9.9 percent and 9.1 percent respectively. The biggest contributor to inflation was an escalation in food prices (Figure 1.14). Alongside this, the price of tradable goods experienced significant increases, in stark contrast to the price of non-tradable goods which remained stable (Figure 1.15). Further analysis (Box 1.1) finds that global energy prices and the Nominal Effective Exchange Rate (NEER) have a positive and significant impact on headline inflation.8

The significant increase in the prices of rice, vegetables, oils and fats, sugar, jam, honey, and meat played a major role in driving up headline inflation. The broader range of goods experiencing higher inflation rates points to a wider economic impact. Rice prices increased by an average of 9 percent in Q1 2023 YoY, higher than the average of 5 percent over the same period last year (Figure 1.16). Rice, being the primary staple for most of the population, remains in high demand. Domestic rice production falls short of domestic demand. The country therefore relies heavily on imported rice, which covers approximately 45 percent of the national requirements (FAO Food Security Bulletin, March 2022). Changes in the price of imported rice is closely associated with price fluctuations in the local rice market (Figure 1.17).

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8 The Nominal Effective Exchange Rate (NEER) is a weighted average of a country’s currency exchange rates with the currencies of its trading partners.
At the same time, there was a continued decrease in fuels and lubricants inflation, extending from its previous peak in July 2022 and persisting throughout the first quarter of this year (Figure 1.18). This downward trajectory mirrored the average global crude oil prices, which have a direct impact on headline inflation as oil is a crucial component in the production of various goods and is involved in the supply chain of nearly all products. Conversely, electricity prices remained stable and had no impact on headline inflation, thanks to both direct and indirect government subsidies that were passed on to consumers (Figure 1.19).

Figure 1.14: Headline inflation remained elevated due to food price inflation. (point contribution and percent, YoY)

Figure 1.15: Tradable goods’ prices continue to rise while non-tradable goods prices are stable. (percent, YoY)

Source: DG Statistics, Ministry of Finance

Figure 1.16: Rice prices are one of main contributors to food price inflation (percentage point contribution to inflation, YoY)

Figure 1.17: Domestic rice price changes closely linked to imported rice prices (percent, YoY)

Source: DG Statistics, World Bank staff calculations

Note: International rice prices is the average prices of Thai rice 5% broken, Thai rice 25% broken, Thai rice A.1 100% broken, and Vietnam rice 5% broken.
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Figure 1.18: Persistent upward trend in tobacco prices, whereas fuel prices inflation declined (YoY change)

Figure 1.19: Amongst non-food inflation, tobacco prices is the largest contributor to headline inflation (percent and percentage point contribution to headline inflation, YoY)

Source: DG Statistics, Ministry of Finance

Box 1.11: Persistent Rise in Timor-Leste's Headline Inflation Linked to Global Energy Prices and Effective Exchange Rate

Timor-Leste's headline inflation has continuously risen since September 2020. The average inflation rate stood at 9.7 percent year-on-year in the first quarter of this year, more than double the annual average of 4 percent for the last two years (Figure B.1.1). The rise in headline inflation has been driven by higher inflation across a larger share of the CPI basket (Figure B.1.2). Historically, inflation across the CPI basket has been evenly distributed and low. This changed between January-March 2023 when a larger share of the CPI basket experienced rapidly rising inflation. A higher share of the CPI basket is experiencing double-digit inflation, ranging from 11 to 15 percent and 31 to 40 percent. In particular, the food and non-alcohol beverages as well as alcohol and tobacco prices experienced high inflation.

Figure B.1.1: Inflation has been increasing and remained above its moderate level (percent)

Figure B.1.2: Distribution of price component increase (percent distribution)

Source: DG Statistics

Source: DG Statistics, Ministry of Finance

Source: DG Statistics, World Bank staff calculations
Inflation can be driven by demand (e.g., increased government spending) or supply pressures (e.g., costs of production, natural disasters). An ordinary least regression (OLS) model is developed to investigate the drivers of inflation in Timor-Leste using 2014 to 2022 monthly data. Among potential drivers, the analysis looked at government expenditure, global food, energy prices, and the Nominal Effective Exchange Rate (NEER). NEER is a measurement that assesses the worth of a nation's currency in comparison to a selection of other currencies. In the specific case of Timor-Leste, which utilizes the US dollar as its official currency, fluctuations in the value of the US dollar against the currencies of Timor-Leste's trading partners will affect the relative prices of goods and services. Evaluating the impact of government expenditure, food and energy prices on inflation is crucial given the economy's reliance on government spending and imported commodities. Food prices were however excluded as they were non-stationary.

The estimation results find that global energy prices and the NEER have a positive and significant impact on headline inflation. The final model 6 (Table B.1) has a good fit, with an R-squared value of 0.56, indicating that 56 percent of the variation in headline inflation can be explained by the variation in energy prices, and NEER. This suggests that domestic headline inflation is driven by external supply side factors namely energy prices and the NEER, relative to domestic demand factors.

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Table B.1: Changes in energy prices and nominal exchange rate are persistently affecting inflation

Note: First difference natural log of “X” is calculated by taking the difference between natural log of “X” at month t with natural log of “X” at month t-12 (year on year difference). Each variable has passed the stationary test. Each variable is tested at 1%, 5% and 10% test of significance level. The symbol ** indicates that the observed variable is statistically significant at the 1% level. The symbol *** means that the observed variable is statistically significant at the 5% level, and the sign **** means that the observed variable is statistically significant at the 10% level.

1.3. Government spending remains significantly above pre-pandemic levels, with an increasing proportion allocated to public transfers

Ensuring fiscal sustainability in Timor-Leste has become more challenging after consecutive economic shocks. Prior to the pandemic, government expenditure averaged around USD 1.3 billion per year between 2013 and 2019, accounting for 82.6 percent of GDP (Figure 1.20). However, sustainable revenue sources were limited to approximately USD 781 million, resulting in a persistent fiscal deficit of USD 510 million, close to 32 percent of GDP. In 2020 and 2021, the fiscal gap expanded significantly due to increased government spending to address the impacts of both Tropical Cyclone Seroja and the COVID-19 pandemic.

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Government budget rose by 1 percent and 36 percent in 2020 and 2021 respectively. Moreover, the adverse impact of the pandemic on revenue streams, combined with the government's decision to exclude utility revenues from the State Revenue, led to a significant increase in the fiscal deficit, reaching 25.9 percent and 47 percent of GDP in 2020 and 2021 respectively.

Although the impact of the pandemic has receded, the risk factors for sustainable budget spending are increasing. Initial budget projections for 2022 set government spending at USD 1.9 billion (113 percent of GDP), but this was later raised through a budget rectification in May 2022. The pressure to increase and the desired timeframe for the fund's sustainability.

Figure 1.20: Continuous upward trend in spending despite the cessation of the pandemic. (As percent of non-oil GDP)

Figure 1.21: The domestic revenue remains below the pre-pandemic level. (USD million)

Efforts to enhance revenue generation have been slow-moving, yielding only modest results. In recent years, strategies to augment revenue have encompassed adjusting taxes on alcohol and tobacco, escalating import tariffs, and more recently, instituting excise taxes on sugar and sugary beverages (SSBs) (see Box 1.2). These initiatives, although praiseworthy, have had a minimal overall impact on total revenues. In 2022, of the total revenue collected, close to 35 percent and 50 percent were derived from Estimated Sustainable Income (ESI) and extra withdrawals from the Petroleum Fund. The expected supplementary revenue from the new excise taxes on SSBs is projected to be in the range of USD 20 – 40 million annually. This could represent a significant 11.6-23.2 percent of the domestic revenue if the revenues from the Petroleum Fund are set aside. However, when compared to the total expenditure, this sum amounts to a small 1.1-2.3 percent, emphasizing the need for more effective strategies to boost domestic revenues (Figure 1.21).

10 The realized expenditure in 2020 decreased by 8 percent compared to 2019 due to a combination of factors, including the duodecimal regime, political uncertainty, the COVID-19 pandemic, and the restrictive measures implemented to control the spread of the virus within the country. These measures significantly restricted the execution of the Government budget.

11 The Government non-tax revenue contracted significantly by more than half in 2021 due to the exclusion of fees and charges receipt from EDTL (Electricidade de Timor-Leste) and BEE TL (Water and Sanitation Company) as they become State Own Enterprises.

12 ESI refers to the estimated long-term income that Timor-Leste can sustainably withdraw and spend from Petroleum Fund without depleting its capital over time. It is calculated based on various factors, including the fund's asset base, expected returns, inflation rates, and the desired timeframe for the fund's sustainability. ESI is set at 3 percent of Timor-Leste's total petroleum wealth to ensure sustainable usage.
Timor-Leste has recently joined over 100 countries that have implemented excise taxes on SSBs, but there remains room for amplifying the impact of the initiative. The policies, initiated at the beginning of the year, impose a duty of USD 1 per kilogram on sugars and confectionery, and USD 3 per liter on sugary drinks. These regulations intend to mitigate health issues linked to excessive sugar consumption and to elevate government revenue. Despite these measures, there still exist opportunities to further refine these policies through insights from international experiences. Some of the recommendations that the authorities may want to consider include:

- Framing the policies as health interventions is crucial in gaining public and political support. Strong framing and communication strategies are essential to sustain support and create a powerful signal about the health risks involved. It is crucial to make the tax visible to consumers at the point of purchase to maximize its impact.

- Expanding the scope of the tax to include a broader range of sugary foods could enhance both revenue and health benefits. This is because the policies, as currently stand, exclude a wide range of high-sugar foods. Other jurisdictions that incorporate high-sugar food products in their tax regimes include Dominica, Ethiopia, French Polynesia, Hungary, Mexico, and Nauru.

- Inclusive consultations with stakeholders are essential for the smooth implementation of the policy. This involves addressing implementation issues with Customs and Revenue agencies, assessing the potential impact on businesses that produce domestically or source products internationally, and conducting a comprehensive evaluation of the policies’ regressivity. If found to be regressive, it is crucial to design measures to mitigate the impact on affected communities.

- It is essential to clearly communicate revenue expectations. Considering the experiences of the UK and South Africa, where similar policies generated consistently lower-than-expected revenues, it is important to avoid overestimating revenue forecasts. Inflated projections could be used by critics to undermine the tax. In fact, there is a paradox where the more successful an SSB tax is at reducing sugar consumption, the lower the revenue it generates.

Amidst the COVID-19 pandemic and its aftermath, there has been a significant increase in public transfers. The proportion of the government realized expenditure to public transfers, including personal benefit transfers and public grants, has increased from 29.3 percent before the pandemic to 39.8 percent during the pandemic, and to 51 percent in 2022 (Figure 1.22). Public transfers were already on the rise before the pandemic, partly due to the implementation of a substantial pension scheme for war veterans. Public grants, on the other hand, have also steadily increased to cover institutional transfer payments, with notable recipients including RAEOA-ZEESM, BCTL, state-owned enterprises (SOEs), sub-national investment programs, churches, and private institutions. The creation of the Special Administrative Region of Oecusse Ambeno (RAEOA) and the Special Zone for Social Market Economy (ZEESM) was authorized by legislation in 2014 and officially established in 2015 to drive the socio-economic development of the region. This legislation granted RAEOA-ZEESM a significant level of autonomy in administrative, financial, and patrimonial matters. However,
The practice of using transfers is causing concern from a public financial management perspective due to possible misclassification and the potential weakening of the impact of public spending on economic growth. Some transfers, such as those to entities like RAEOA-ZEESM, might be better defined as capital expenses or wage allocations. Further, public transfers have been expanded to various governmental bodies that had previously obtained allocations through distinct budget appropriations such as wages, goods and services, or capital expenditure. Although transfers serve multiple purposes, there is a concern that they are being used as substitutes for other accounting categories that might require stricter procedural constraints. Without solid justification, an increased budget allocation for transfers may result in a bloated, less efficient budget with a potentially diminished impact of government spending.

Financial support for State-Owned Enterprises (SOEs) has noticeably increased over the past six years, imposing a substantial strain on the national budget. This support, encompassing provisions for the EDTL, BTL, and Timor-Gap SOEs, has grown from 6.1 percent of the budget (equivalent to 4.6 percent of GDP) in 2017, to 9.8 percent of the budget (equivalent to 12.5 percent of GDP) in 2022. The budgetary support peaked in 2021, accounting for 13 percent of the budget (or 17 percent of GDP). This increase is partially attributed to the government's efforts to stabilize electricity prices amid rising commodity costs, particularly during Republic Russia's invasion of Ukraine. Among the three SOEs, the largest portion of the budget, averaging nearly 7.1 percent, has consistently been allocated to EDTL (see Box 1.3 for more details).

Box 1.33: Perpetual government support is needed for electricity provision

Significant progress has been made in improving electricity access in the country, but there is still much work to be done to enhance the reliability and quality of power supply. Grid electricity access has increased significantly from only 21 percent of the population in 2003 to approximately 80 percent in 2020. However, compared to similar-sized countries, the distribution network in Timor-Leste is in relatively inferior condition, experiencing excessive voltage drops and frequent service outages (Figure B.3.1). The government's electricity access program, along with anticipated industrial growth from projects like the Bacau cement plant, Tabor Bay Port, Pelican Bay Resort, and potential development of Liquefied Natural Gas (LNG) facilities in Tasi Mane, is expected to drive domestic electricity demand.

The high cost of electricity is a significant concern as it affects the competitiveness of businesses. The 2021 World Bank Enterprise Surveys revealed numerous challenges faced by firms in Timor-Leste, with political instability, access to finance, and electricity being the most critical. Timorese firms spend approximately 15.3 percent of their total production costs on electricity, a higher share for power-intensive sectors like manufacturing. In contrast, firms in comparator countries have lower electricity expenses, highlighting the importance of addressing the overall electrical infrastructure to enhance the competitiveness of Timor-Leste's private sector in the global economy (Figure B.3.2).

The energy sector continues to rely on government support to bridge the financial gap caused by over-capacity, high fuel costs, and operational inefficiencies. The cost of electricity service reached USD 0.42/KWh in 2021, while the average tariff stood at USD 0.19/KWh. A significant portion of the required funding is provided through subsidies for EdTL, the electricity utility, primarily for fuel payments. Although EdTL plants are designed to operate with various fuels, they currently rely on diesel, the most expensive and susceptible to theft due to its widespread use in industry and transport. EdTL also faces cost pressures from over-capacity, with a total capacity of 300MW, 3.5 times greater than the peak load of 80-84 MW. While there are no ongoing capacity charge payments, significant costs are associated with the idle capacity's sunk cost and maintenance. Operational efficiency is also a concern, with EdTL reportedly collecting only around 40 percent of the energy generated.

RAEOA-ZEESM has also received substantial public funding, averaging approximately USD 125 million annually between 2015 and 2019. The majority of the budget has been allocated to capital expenditures, including the improvement of the airport, various road projects, and the construction of a power station.

14 TIMOR GAP is a state-owned oil & gas firm conducting domestic and international petroleum business, including onshore and offshore exploration and production. It has several subsidiaries for efficient upstream, downstream, and project-specific operations. BTL is a public utility company established in 2020, tasked with efficiently implementing the government’s strategy for delivering clean water and improved sanitation services.
The state of the power sector puts significant strain on the budget. Government allocations for supporting EdTL through public transfers have averaged 5.7 percent of the budget before COVID (2017-2019), 9.4 percent of the budget during COVID (2020-2021) and the peak of Russia's invasion in Ukraine, and 7.8 percent of the budget in the 2022 budget. Improving EdTL's financial and operational performance is crucial not only to support the government's financial consolidation efforts but also to reduce the cost of doing business in Timor-Leste.

Figure B.3.1: Excessive voltage drops and frequent service outages

Figure B.3.2: Electricity costs account for the highest share of total expenses in Timor-Leste (As share of total production cost)

The government is financing its fiscal gap with withdrawals from the rapidly depleting Petroleum Fund. As of the end of Q1 2023, the Petroleum Fund balance was estimated at USD 17.8 billion, equivalent to 10.2 times the non-oil GDP (Figure 1.23). This signifies a drop of 6.8 percent from the previous year. A range of factors, including negative asset revaluation returns, cessation of production from the Bayu-Undan field, substantial over-withdrawals from the set ESI to cover the budget deficit, and a shift towards a larger allocation for the fund’s liquidity portfolio have all contributed to this decline. Parliament-approved withdrawals beyond the ESI are permitted under specific conditions and have been the norm since 2009. While fluctuations in the Petroleum Fund balance are a natural occurrence, the reduction seen at the end of Q1

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15 The liquidity portfolio is a low-risk portfolio of cash and low-maturity bonds intended to support anticipated budget withdrawals. As the balance of the Petroleum Fund declines, the relative size of the “lower-risk, lower-return” portfolio will increase as it is replenished regularly from the “growth” portfolio to cover the next years of expected withdrawals. Consequently, the overall return of the Fund will decline as well.

16 The mechanics of the Petroleum Fund imply that a reduction in the fund’s balance diminishes the ESI, necessitating larger withdrawals to fill a given fiscal deficit.
2023 marks the steepest year-on-year decrease yet. This underscores an imbalance between the fund’s revenue and withdrawals and highlights the rapid depletion of the Fund.

1.4. The strength of the US dollar lessened commodity prices surge, but stopping oil production intensifies external pressures.

The use of the US dollar as the official currency lessened the impact of rising commodity prices but harmed competitiveness. In the Q1 2023, the REER increased by 8.1 percent (Figure 1.24).17 Relative to the Indonesian rupiah (IDR) and the Australian dollar (AUD), which are Timor-Leste’s key trade partners, the US dollar experienced considerable growth in March 2023 (Figure 1.25).18 This development may have alleviated the costs of non-US-dollar denominated imports from Indonesia and Australia. However, the overall global increase in prices offset these benefits, resulting in sustained price pressures domestically. The combination of high inflation in Timor-Leste relative to trading partners and the appreciation of the USD has led to a higher REER, further harming the country’s external competitiveness. A stronger US dollar could make, for instance, travel experiences in Timor more expensive. The tourism sector, which is a key source of foreign currency through service exports, may accordingly face challenges.

Figure 1.24: US dollar appreciated both in nominal and real terms…
(Index, 2016Q1=100)

Figure 1.25: … and against the currencies of Timor-Leste’s main trading partners.
(Index, 2016Q1=100)

Source: BCTL
Note: REER: real effective exchange rate which measuring the average of the bilateral RERs between the country and each of its trading partners along with each trade weights.
NEER: Nominal effective exchange rate

17 Real Effective Exchange Rate (REER) is an adjustment of the NEER by the ratio of domestic to foreign prices, measured through the Consumer Price Index. REER captures the overall competitiveness of a country. The NEER, on the other hand, showed a year-on-year appreciation of 5.2 percent in March 2023, a faster pace compared to the 1.7 percent appreciation observed in March 2022
18 The USD appreciated by 8.4 percent compared to the IDR and 9.3 percent against the AUD
The cessation of oil and gas production in 2022 flipped Timor-Leste’s current account from a surplus in 2021 into a deficit in 2022. Timor-Leste’s current account reflects its small domestic private sector, limited production capacity, and heavy reliance on hydrocarbon and coffee exports. Over the past seven quarters, there’s been a consistent current account deficit with the last surplus recorded in Q3 2021 (Figure 1.26). Additionally, apart from one quarter, the primary income has been in deficit since 2020. Although the country saw a significant recovery in 2021, trade growth has moderated since Q1 2022 (Figure 1.27). The rise in Arabica coffee prices since the start of 2021 gave a small boost to coffee exports (Figure 1.28). A persistent trade deficit, on the other hand, continues to plague the nation due to consistently high levels of imports and a growing demand for capital goods that support domestic infrastructure development (Figure 1.29).

The 2019 maritime boundary agreement necessitates an adjustment on how the oil-related transactions are recorded. Previously, these activities were considered non-resident transactions, with oil and gas revenues classified as other primary income. However, the recent agreement has redefined these activities as resident transactions, leading to the international sale of oil and gas being recorded as exports. This adjustment has had a notable impact on the current account profile. It resulted in a surplus, but as oil production in the Timor Sea declined and eventually stopped in early 2023, the current account shifted into deficit.

The current account consists of the goods and service account, the primary income account and the secondary account.
The persistent current account deficit in the country has been primarily financed through withdrawals from the Petroleum Fund, as foreign direct investment (FDI) and other portfolio investment are minimal.\textsuperscript{21} Surpluses in the current account have only occurred mostly during quarters with high hydrocarbon exports or during the peak of the COVID-19 crisis when imports were significantly reduced. Despite adopting a relatively open approach to FDI, the country has struggled to attract foreign investments during the past 20 years. The largest FDI inflow of USD 300 million occurred in 2006, mainly in the oil and gas sectors. However, excluding oil activities, the average current account over the past 5 years has been around USD 600 million, which is nearly twice the size of the largest recorded FDI (Figure 1.30).

\begin{figure}
\centering
\includegraphics[width=\textwidth]{figure1.png}
\caption{Current account has been persistently deficit, while FDI was trivial (Percent of non-oil GDP)}
\end{figure}

\textsuperscript{21} In a balance of payments report, portfolio investment refers to a category that tracks financial transactions and positions involving investments in equity and debt securities issued by foreign entities. This includes investments in stocks, bonds, and money market instruments. However, in the case of Timor-Leste, the portfolio investment category has primarily recorded withdrawals from the Petroleum Funds, as the country’s domestic financial system is still in its early stages of development.
2. Outlook and Risks

The economy is expected to continue recovering thanks to a pick-up in private consumption demand. Over the medium term (2023 to 2025), average annual growth is projected to reach 3.1 percent (Table 2.1). Assuming political stability and structural reforms, both private consumption and investment are likely to increase their contributions to economic activity. Government spending is expected to further stimulate growth through the improved execution of various infrastructure projects. Nevertheless, export growth is expected to face limitations, with coffee as the sole principal commodity.

Table 2.1: Economic Forecast

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<td>3.0</td>
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<tr>
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<td>-8.5</td>
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While global food prices have gradually moderated since the Russian invasion of Ukraine, they are projected to remain higher than pre-war levels and persist at elevated levels globally. This is partly due to transportation and processing costs, which remain subject to inflationary pressures. Additionally, recent government policies, enacted in early 2023, have increased import tariffs and excises on alcohol and tobacco. Given the significant weight of food, alcoholic beverages, and tobacco in the Timor-Leste’s consumption basket, these factors are expected to continue driving domestic prices. As a result, Consumer Price Inflation (CPI) is projected to hover around 5.5 percent in 2023 before retreating to 3.1 percent between 2024 and 2025.
Given the end of oil production and a tumultuous year for financial markets, the balance of the Petroleum Fund will experience faster depletion and is projected to be entirely depleted by 2034. Over the next five years, total withdrawals are projected to surpass the net return on investment by about 200 percent. Future withdrawals will likely necessitate the sale of the Petroleum Fund's capital assets as investment returns are predicted to fall below historical averages. Without the Petroleum Fund, tax and non-tax collections will become the primary sources of domestic revenue. In the absence of resources to plug the budget deficit, public spending will need to be cut significantly—a situation referred to as the fiscal cliff.

The rapid depletion of the Petroleum Fund poses a threat to macroeconomic stability and the continued use of the US dollar as legal tender. The withdrawals from the Petroleum Fund, which are recorded as portfolio investment inflows in the financial account, have been fundamental in covering the persistent budget and current account deficits. The country’s ability to maintain a dollarized economy also heavily relies on the Petroleum Fund, as it ensures a consistent supply of US dollars within the economy. In addition to the risk of a fiscal cliff, the complete depletion of the Petroleum Fund would prevent the country from financing its import expenses, potentially leading to a balance of payment crisis. There is also a domestic risk where individuals and businesses may not have the necessary currency to carry out their daily transactions.

Downside risks are significant and include political instability, reversal of reforms, and natural disasters. Following the conclusion of the parliamentary election in May 2023, it is crucial for the Government to maintain the consistency of high-level policies and reforms. In the 2021 Enterprise Surveys, political instability was identified as the primary concern for business actors, with over 70 percent of respondents citing it as their top worry. This surpassed other key issues, such as electricity availability and access to finance, which were more prominent in earlier surveys. Without the political gridlock and budget approval delays that plagued the country from 2017 to 2020, Timor-Leste’s income per capita might have been higher by USD 300 to USD 500 annually (see ).

**Box 2.1: The Economic Costs of Political Instability**

Between 2017 and 2020, Timor-Leste grappled with recurring periods of political instability. The dissolution of the Government and Parliament, premature elections, and delayed annual budget approvals all severely dented consumer and business confidence. The lack of a government budget for almost eight months in 2018 and nearly nine months in 2020 necessitated the implementation of duodecimal regimes. These regimes permitted monthly appropriations equal to 1/12th of the prior year’s budget. The financial crisis reached a point of such severity in 2018 that two emergency withdrawals from the Petroleum Fund were required to ensure the basic functionality of the state. Given that government spending has been the primary economic catalyst, it was unsurprising that Timor-Leste underwent periods of negative economic growth in 2017, 2018, and 2020.

The political instability in 2017 and 2018 resulted in estimated per capita GDP losses ranging from USD 440–540, equivalent to 35.2–43.2 percent of 2019’s per capita GDP. These estimates were derived using the synthetic control method (SCM), a statistical approach that assesses the causal impact of an event, such as a shock, conflict, or legislation. The SCM creates a counterfactual (synthetic control) as a weighted average of several control units, with weights assigned to ensure the synthetic control closely follows the actual trend of the outcome variable during the pre-treatment period. The impact is then calculated as the difference between the actual and synthetic control outcomes. The outcome variable in this case is the GDP per capita.
Following the end of oil production in the Timor Sea, fiscal sustainability should take precedence as the primary concern for the incoming constitutional government. The newly elected Parliament and incoming constitutional government might find it beneficial to institutionalize fiscal consolidation through robust fiscal rules (see Box 2.2). Both revenue mobilization and expenditure rationalization efforts should be maintained. Domestic revenue mobilization could be bolstered by updating the tax procedure code and implementing a value-added tax (VAT). Additionally, strengthening tax administration to enhance compliance should be given priority. Exploring further revenue sources, such as property taxes, and minimizing discretionary tax exemptions are also strategies worth considering. In terms of expenditure rationalization, the goal should be to gradually align government spending with sustainable revenue sources. Given that significant increases in public spending have had a limited impact on Timor-Leste's medium-term economic growth, it is possible for the government to sustain growth levels with a reduced budget.

Box 2.2: Fiscal Consolidation Efforts Require Enhanced Compliance with Fiscal Rules

The incoming constitutional Government is confronted with the pressing task of reinforcing the nation's fiscal discipline. The cessation of oil production has underlined this necessity, as investment returns now represent the sole revenue source for the Petroleum Fund (PF). Moreover, an impending shift towards a lower-risk liquidity portfolio could result in reduced future investment returns. Capitalizing on the public trust and reform momentum sparked by the recent election, it is vital to use this moment for effecting meaningful fiscal reforms.

The fiscal policy of Timor-Leste is steered by two rules, yet it has been inconsistently followed. The first rule mandates that withdrawals from the Petroleum Fund to the budget must align with the Estimated Sustainable Income (ESI). The second rule places a ceiling on the cost of external debt, requiring the government to weigh borrowing costs against the PF’s average investment returns. The first fiscal rule has been frequently breached, as authorities and parliament members exploit a loophole, thereby justifying excessive withdrawals under the pretext of a frontloading policy. Given the limited progress in economic diversification and the extensive development needs, the rapid depletion of the Petroleum Fund and the escalating budget deficit pose a significant risk to Timor-Leste's fiscal sustainability.

Looking ahead, it’s essential to strengthen compliance with the existing fiscal rules and ponder over the introduction of additional ones. The government should consider incorporating expenditure rules to cap certain spending types. Additionally, the introduction of revenue rules, setting domestic revenue thresholds to be reached within specified periods, could lessen the dependence on the PF. Rules aimed at preventing deficits from exceeding predetermined amounts also warrant consideration. To align short-term budget considerations with long-term fiscal objectives, it is recommended that authorities develop a Medium-Term Fiscal Framework (MTFF). This framework could provide a strategic roadmap for achieving the objectives set out in the fiscal rules, while also ensuring compliance.

Achieving the 7 percent growth target outlined in the government program is critically dependent on supporting private sector development and enhancing competitiveness through structural reforms. Particularly, efforts to improve the productivity of the agriculture sector will be vital (see Chapter 3). The significance of this sector cannot be overstated. Nearly 38 percent of Timor-Leste's labor force is engaged in agriculture. Moreover, the sector is responsible for supplying the population's food needs and, although presently modest, contributes to foreign exchange earnings through the export of products such as coffee, cocoa, maize, and vegetables. Ultimately, a flourishing agricultural sector holds the potential to stimulate rural development and alleviate poverty.
3. Rebalancing Priorities to Harvest Priority

3.1. Introduction

Investing in agriculture plays a crucial role in fostering an inclusive economy that benefits a significant portion of the population. Agriculture has been consistently the biggest share of Timor-Leste economy outside the public sector contributing at the average 23 percent of total non-oil real GDP for more than a decade (Figure 3.1). Additionally, the latest 2021 Labor Force Survey show that 38 percent of employment is still in the agriculture sector, although much lower than 51 percent in 2010 (Figure 3.2) making it the largest sector of employment in Timor-Leste.

Figure 3.1: Agriculture’s share in non-oil GDP has been declining

Source: General Directorate of Statistics

Figure 3.2: However, excluding public sector, employment at the agriculture is still dominant

Source: Labor Force Survey, ILOSTAT

22 For the purpose of data comparison by years and countries the Labor Force Survey analysis in this chapter will use a broader definition of employment drawn from ILOSTAT which include own-use production work.
Despite its significance, the agriculture sector is marked by low remuneration of farmers and low productivity levels. Estimates presented in Inder et al. (2017) indicate that, based on 2014 data, the average agricultural household in Timor-Leste contributes a mere $240 per person of economic value annually. This amount accounts for approximately 40% of the Poverty Line, representing an unsustainable level of low returns. Regrettably, since the 2014 analysis suggests the situation has not improved significantly. Furthermore, projections by Nguyen et al. (2017) indicate that even in the 2040s, more than 50% of Timor-Leste’s population will reside in rural areas, and a large majority of them will rely on agricultural sector for their livelihoods.

To achieve inclusive economic development and foster broad-based employment creation, it is imperative to prioritize investment in agriculture. However, maintaining the status quo in the agricultural sector will not suffice, as the prevailing low productivity levels make it impossible to support adequate livelihoods. Without substantial improvements in productivity, income levels, and commodity mix diversification, most agricultural households will remain trapped in poverty. Therefore, concerted efforts are necessary to enhance agricultural productivity and create sustainable economic opportunities for these households.

3.2. Diagnosing the Challenges

a. Decreasing Trend of Agriculture Production

Timor-Leste faces a scarcity of arable land suitable for agricultural production that hinders agricultural development. The country’s mountainous terrain and rugged landscape limit the availability of flat and fertile land, which is essential for cultivating crops. Timor-Leste arable land was at 7.5 percent of total land area in 2020, lower than the average EAP countries at 9.5 percent yet higher than Pacific Island countries at 2.4 percent. The scarcity of arable land poses a significant constraint on expanding agricultural activities and hampers efforts to increase food production and agricultural output.

Figure 3.3: The agriculture value added declined compared to ten years ago (agriculture value added index, base year 2010)

Source: DG Statistics with World Bank staff calculations

Figure 3.4: Declining trends in cultivated land area for crop (harvested area, hectares)

Source: FAOSTAT

23 Source: Word Development Indicators, World Bank based on FAOSTAT data
Water availability is a significant binding constraint for agriculture in Timor-Leste, ranking lower compared to other agriculture-based countries. With limited access to sufficient and reliable water resources, agriculture is primarily dependent on rainfall, which is sparse and getting erratic, and it contributes to the poor performance in the sector. The country’s low water availability per capita, seasonal variations in rainfall, and inadequate irrigation coverage pose challenges for crop cultivation. Insufficient water affects crop yields, leading to decreased agricultural output and income for farmers\(^{24}\). At 6.5 cubic meters per capita of internal renewable water resources in 2018, Timor-Leste ranks 63 out of 180,\(^{25}\) which is considerably lower than countries in a similar context, such as Indonesia, Myanmar, and Laos, who for example, have 7.5, 18.7, and 27 cubic meters per capita for the same period, in respectively.

The agriculture production has been declining substantially over the last decade, in part resulting from a decrease of cultivated land size. The value added of agriculture sector has been declining, lowered by 5 percent between 2021 and 2010. Compared to other sectors, the agriculture sector has been consistently one of the sectors with lower production in ten years (Figure 3.3). In part, this figure could be associated with the decline of harvested area in Timor-Leste. Between the 5-year period of 2001-2005 and the more recent 2016-2020 average, the average harvested area has significantly reduced by 35% (Figure 3.4).

Significant changes in crop area and production in Timor-Leste resulted in notable trends and implications for agricultural outcomes. Rice and Maize are two of the largest cereal commodities in Timor-Leste and over 92% of arable crop land in 2010 was devoted to production of these two commodities (Figure 3.5). In a decade, there has been substantial reductions in the areas dedicated to rice, which decreased approximately by 48 percent between 2020 and 2010, and maize, which decreased by nearly 59 percent for the same period (Figure 3.6). In 2021, due to COVID related reverse migration to rural areas, the arable crop land increased substantially (from 29,081 ha in 2020 to 57,666 ha in 2021 for maize and from 18,912 ha in 2020 to 26,791 ha in 2021 for rice) for a single year. However, 2021 is likely to be an exception and the trend of long-term decline of arable crop land poses a serious challenge for agricultural sector in Timor Leste.

### Figure 3.5: More than 90 percent of arable land was planted with rice and maize in 2010

(\(\text{percent of total arable land}\))

<table>
<thead>
<tr>
<th>Crop</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>31.6</td>
</tr>
<tr>
<td>Maize (corn)</td>
<td>60.8</td>
</tr>
<tr>
<td>Others</td>
<td>7.6</td>
</tr>
</tbody>
</table>

### Figure 3.6: cultivated area size of major crops declined sharply

(harvested area, hectares)

<table>
<thead>
<tr>
<th>Crop</th>
<th>Change (hectares)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coffee, green</td>
<td>-48.0</td>
</tr>
<tr>
<td>Maize (corn)</td>
<td>-58.6</td>
</tr>
<tr>
<td>Rice</td>
<td>-48.3</td>
</tr>
</tbody>
</table>

Source: FAOSTAT
Note: in 2020, Timor-Leste was hit by a massive floods and COVID-19 pandemic


Moreover, the harvested area of coffee also fell sharply in the past ten years. Between 2010 and 2020, coffee, one of the major export crops of Timor-Leste, has witnessed a significant decline of 48 percent in cultivated area to 28 thousand hectares (Figure 3.6). This decline can be attributed to the failing of international prices which is making coffee production less profitable and leading to many farmers to abandon their coffee gardens. Notably, the composite indicator price set by the International Coffee Organization dropped from USD 1.47 per pound in 2010 to USD 1.00 per pound in 2019.

b. Labour moves away from agriculture

Recent Labor Force Survey shows that employment in agriculture fell following the fall in overall employment rate. According to the Labor Force Survey Reports in 2013 and 2021, the labor force participation rate in Timor-Leste remains stable, at a very low rate of 30.5 percent in 2021. With such low level those who choose to remain in the labor market face challenges in securing employment, as evident by low employment-to-population ratio at 34 percent, the lowest compared to its peers (Chapter 1). Out of total employment, the share of labor working in agriculture sector fell from 41 percent in 2013 to 27 percent 2021. Moreover, for the same period, the working-age population participating in agriculture either as workers or subsistence foodstuff producers fell from 37 percent to 28 percent.

A similar story also emerges from the Census which shows a significant decline in the proportion of people employed in Agriculture, Forestry and Fisheries. The employment in the sector fell from 65.3% in 2010 to 59.6% in 2015. This near 6 percentage points decline in the supply of labor over 5 years is quite substantial. Sustained over 10 or more years, it represents a significant structural change in labor supply. Notably, the decline is greatest among males - in 2010 67.65% of agriculture workers were male, and this declined to 61.1% by 2015. It is also more rapid among young adults. The decline in supply has been primarily among the most potentially productive agricultural workers (young males).

Moreover, these labor force patterns align with high levels of rural-to-urban migration. The level of migration from rural to urban areas particularly towards Dili, the capital city is still high, predominantly among young people. According to the 2022 census, migration from rural to urban areas, mostly from other municipalities to Dili, accounted for 36.9% of total population living in Dili and increased from 30 percent in 2015. Additionally, international out-migration has been on the rise. With fixed technologies and declining labor supply in agriculture, it becomes evident that production will continue to decline, primarily reflected in reductions in the area harvested.

The prevailing evidence strongly suggests that the primary explanation for the significant decline in area under crop production can be attributed to changes in labor supply. Had there been notable advancements in yield and productivity resulting from enhanced utilization of inputs and tools, it could have averted the decline and potentially stimulated income growth. Such a scenario aligns with the more conventional narrative of the modernization and transition of an economy from an agrarian to a market-based structure. In this narrative, productivity improvements yield higher incomes for farmers, leading to increased demand for non-agricultural goods and services, consequently driving the demand for non-farm labor. Moreover, productivity gains generate surplus labor within the farming sector, prompting workers to seek employment in other occupations. Essentially, productivity improvements create push and pull factors that contribute to the
labor mobility away from agriculture. However, this narrative does not accurately reflect the situation in Timor-Leste (Box 3.1).

**Box 3.1: Factors Contributing to the Decline in Agricultural Labor Supply for Timor-Leste**

**Government employment and wage disparity drive rural-urban migration.** The decline in agricultural labor supply in Timor-Leste can be attributed to several interconnected factors. Firstly, the standard Harris-Todaro model provides insights into the rural-urban migration phenomenon, with a focus on the relatively high expected urban wage. In the case of Timor-Leste, the increase in urban employment is predominantly driven by government jobs. According to Business Activity Survey estimates from 2010 to 2022, there has been minimal growth in private sector employment. However, during the same period, the Government’s wages and salaries bill has more than doubled, even after adjusting for inflation. Moreover, the number of individuals on the Government payroll has witnessed a substantial increase of almost 40% from 2015 to 2022. This significant growth in government employment has resulted in an elevated expected urban wage, exacerbating the disparity with the stagnant rural return-to-labor. Consequently, this disparity serves as a key driver of rural-urban migration.

Secondly, the availability of international migration opportunities has played a role in the decline of agricultural labor supply. Seasonal worker programs, particularly those offered by popular destinations such as Korea and Australia, have experienced remarkable growth. These programs, which were virtually non-existent in 2012, have rapidly expanded to include more than 5,000 workers per year by 2022. The allure of alternative income sources through international migration has enticed Timorese farmers to seek employment opportunities abroad.

Thirdly, alternative income sources affect farmers’ incentive to improve low-return agricultural activities. The expansion of access to veterans’ and other pensions, along with the rapid growth in remittances, has diminished the incentives for farmers to invest in low-income and low-return agricultural activities. The availability of these alternative income sources has increased farmers’ reservation wage, which represents the minimum return to labor they expect to justify their efforts. Consequently, farmers have reduced their labor supply, primarily by scaling back the production of low-margin agricultural crops, while focusing on increased production of high-value crops.

Major crops in Timor-Leste are providing low returns to agriculture workers. Various studies specific to Timor-Leste have documented evidence from diverse sources, shedding light on yields, productivity, and the daily return to labor associated with farming and selling various crops. These studies, including the Development Partners Compendium (2022), provide valuable insights into potential areas for productivity improvements. The analysis reveals that the returns to labor for major crops such as rice, maize, and coffee are exceedingly low when traditional production methods and seed varieties are employed. For instance, the returns can be as low as $3.20 per day for rice and $7.40 per day for coffee. Notably, these crops have experienced significant production declines over the past decade. Conversely, the relatively robust growth in vegetable production during the same period corresponds to comparatively high returns to labor, exceeding $20 per day in some cases.

The labor Scarcity could be the main constrains agricultural production in the future. Additionally, the declining trend in the use of arable land suggests that land availability is not the primary constraint for the foreseeable future. Instead, the scarcity of labor, driven by the low returns to labor, becomes the binding constraint. To address this issue, future investments in agriculture should prioritize enhancing farmer incomes through engagement in high value commodities and productivity improvements. By increasing the returns to labor, it will be possible to resolve the labor shortage problem and achieve a significant increase in farmer incomes, thereby enhancing the overall contribution of agriculture to economic growth.

Furthermore, it is essential to carefully select sub-sectors and commodities to support, ensuring that they offer adequate returns to labor above the reservation wage. Failure to do so will result in labor supply constraints hindering production growth. Therefore, a strategic approach is necessary to identify commodities and associated technologies that guarantee favorable returns to labor, thereby stimulating production and mitigating the labor constraint.
3.3. Unleashing the Potential: The Significance of Agricultural Development in Timor-Leste

a. Escalating per Capita Food Imports and Closing Gap with SIEs

Over the past decade, Timor-Leste has experienced a significant surge in per capita food imports. Timor-Leste’s import value per capita was more than tripling from $63 in 2013 to $191 in 2022 (Table 3.1). A striking observation is the narrowing gap between Timor-Leste and other Small Island Economies (SIEs) in terms of per capita food imports. In 2013, Timor-Leste’s per capita food imports were nearly 10 times smaller compared to other SIEs ($688 vs. $63 per capita). However, by 2022, this ratio reduced to approximately four times smaller ($720 vs. $191 per capita).

Table 3.1: Per Capita Food Import Value (USD per capita)

<table>
<thead>
<tr>
<th>Year</th>
<th>Timor-Leste</th>
<th>Small island economies</th>
<th>Differences</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>63</td>
<td>688</td>
<td>625</td>
</tr>
<tr>
<td>2014</td>
<td>-</td>
<td>714</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>-</td>
<td>642</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>-</td>
<td>641</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>131</td>
<td>687</td>
<td>556</td>
</tr>
<tr>
<td>2018</td>
<td>120</td>
<td>702</td>
<td>582</td>
</tr>
<tr>
<td>2019</td>
<td>112</td>
<td>672</td>
<td>560</td>
</tr>
<tr>
<td>2020</td>
<td>117</td>
<td>627</td>
<td>510</td>
</tr>
<tr>
<td>2021</td>
<td>133</td>
<td>791</td>
<td>658</td>
</tr>
<tr>
<td>2022</td>
<td>191</td>
<td>720</td>
<td>529</td>
</tr>
</tbody>
</table>

Source: World Bank Staff Calculation

By food groups, cereals, food preparation, beverages, and animal products are the top four of Timor-Leste food import values, the same pattern as with other SIEs. Analyzing food imports by group and value reveals noticeable disparities between Timor-Leste and other SIEs. Overall, the values for all food groups in other SIEs surpass those of Timor-Leste. In Timor-Leste, the food groups with higher import values per capita include cereals ($57.5), food preparations ($37.5), beverages ($36), and animal products ($28.7).

Figure 3.7: Disparities in Food Import Values: Group
(2022, breakdown per food group, USD per capita)

Source: World Bank Staff Calculation
Cereal imports have been increasing with big price disparity. Further analysis on food trade and prices reveals significant trends. Between 2017 and 2021, cereal imports in Timor-Leste have experienced a notable annual growth rate of nearly 13%. Additionally, since 2020, imported rice has been priced at a significantly lower range of 2-3.5 times cheaper than locally produced rice. Moreover, 2010, farmers in Timor Leste provided nearly 104 kg of paddy rice per capita, while in 2020 they barely reach 55 kg per capita. Larger cereal imports and imported rice which is cheaper than local rice is making Timor Leste increasingly more dependent on imported cereals to meet the domestic demand.

Figure 3.8: Food Prices have been relatively stable compared to peers, including cereals and milled grains (USD per kg, Jan 2020 – March 2023)

b. Food security status of Timor-Leste remains weak

Despite improvements in recent years, compared with other SIEs, the status of food security in Timor Leste remains weak. Some indicators still show significant challenges in undernourishment and stunting.

Timor-Leste continues to face a high prevalence of undernourishment, with a rate of 26.2% in 2019-21 (Figure 4). This figure is not only concerning in itself but also higher compared to other small island economies (SIEs). The persistently high levels of undernourishment highlight the need for targeted interventions and strategies to improve access to nutritious food and address the underlying causes of food insecurity.

Stunting rate in under-5 children is considerably high. The prevalence of stunting as the indicator of child malnutrition among children under the age of five was alarmingly high at 48.8% in 2020 (Figure 3.8). This figure ranks Timor-Leste with the highest prevalence of stunting among SIEs and considerably high as per WHO cut-off values for public health significance. The long-term consequences of stunting on children’s physical and cognitive development emphasize the urgency of implementing comprehensive nutrition programs and promoting adequate infant and young child feeding practices.
Despite the challenging food security situation, Timor-Leste has made significant progress in reducing undernourishment and stunting over the past decade. The prevalence of undernourishment has declined from 31.2% to 26.2%, indicating an encouraging trend towards improving access to food and addressing malnutrition. Similarly, the prevalence of stunting has also shown a notable reduction from 54.4% to 48.8% (Figure 3.8). These achievements demonstrate the potential for further advancements through sustained efforts and targeted interventions to ensure better nutrition outcomes for the population.

The significant imbalance in dietary supply is also highlighted in Timor-Leste. This dietary imbalance is characterized by a heavy reliance on cereals and a low consumption of animal-sourced foods (Figure 3.9). The findings shed light on the dietary adequacy and prevailing sources of nutrients across small island economies (SIEs), particularly in Timor-Leste.

When examining the ranking of dietary energy supply among SIEs, Timor-Leste stands at the lowest position (Figure 3.9). This indicates that, compared to other countries in the same category, the available food supply in Timor-Leste is the least adequate to meet the dietary needs of the population. This suggests a pressing need for interventions and strategies to improve the availability and accessibility of a diverse range of nutritious foods in Timor-Leste.

Nutrient source disparities, with cereal dominance and limited animal protein intake is seen in Timor-Leste. Furthermore, the data reveals notable differences in the sources of nutrients between Timor-Leste and other SIEs. In terms of nutrients provided from cereals, roots, and tubers, Timor-Leste ranks among the top SIEs (Figure 3.9). However, in terms of proteins of animal origin, Timor-Leste is positioned at the bottom of the ranking. This indicates a limited consumption of animal-sourced foods, which are important sources of essential nutrients such as protein.
Figure 3.11: There is a significant imbalance in dietary supply in Timor-Leste with relied heavily on cereals but very low on animal-sourced foods.

<table>
<thead>
<tr>
<th>Dietary Energy</th>
<th>Cereal &amp; Roots, and Tuber</th>
<th>Animal Protein</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iceland</td>
<td>104.3</td>
<td>144</td>
</tr>
<tr>
<td>Malta</td>
<td>63</td>
<td>134</td>
</tr>
<tr>
<td>Barbados</td>
<td>49.7</td>
<td>123</td>
</tr>
<tr>
<td>Cyprus</td>
<td>46</td>
<td>122</td>
</tr>
<tr>
<td>Trinidad and...</td>
<td>44</td>
<td>121</td>
</tr>
<tr>
<td>Mauritius</td>
<td>40</td>
<td>121</td>
</tr>
<tr>
<td>Fiji</td>
<td>34</td>
<td>121</td>
</tr>
<tr>
<td>Vanuatu</td>
<td>26.3</td>
<td>121</td>
</tr>
<tr>
<td>Cabo Verde</td>
<td>25.3</td>
<td>120</td>
</tr>
<tr>
<td>Sao Tome and...</td>
<td>16.7</td>
<td>111</td>
</tr>
<tr>
<td>Comoros</td>
<td>15.4</td>
<td>106</td>
</tr>
<tr>
<td>Solomon Islands</td>
<td>15</td>
<td>105</td>
</tr>
<tr>
<td>Timor-Leste</td>
<td>12.6</td>
<td>103</td>
</tr>
</tbody>
</table>


3.4. Policy Recommendation

Importance of Developing the Agricultural Sector in Timor-Leste.
The escalating per capita food imports and the closing gap between Timor-Leste and other SIEs highlight the critical importance of developing the agricultural sector in Timor-Leste. By prioritizing initiatives that promote domestic food production, improve productivity, and invest in value-added agricultural products, Timor-Leste can work towards reducing the dependency on imports, enhancing food security, and boosting economic resilience.

Improving farmer incomes as the priority focus, especially through making small-scale agriculture more productive and remunerative.
The core reason for the decline in agriculture is the low incomes received by farmers, compared to alternative incomes in Dili or as overseas workers. The only way to reverse this trend is by improving farmer incomes through improved productivity. The improvements in incomes come from a change in the mix of commodities, along with productivity gains produced by improved use of inputs and technologies.

Reduce growing mismatch between demand and domestic supply in key food categories. It will be useful to reverse if possible the trend towards greater import dependency, especially with regard to cereals and livestock products.

Moving from Cereals to High Value Commodities.
The obvious trends in commodity mix over recent years are away from cereals and towards selected animal production, vitamin-rich vegetables, fruits and legumes. These all offer higher incomes / return to labour, as well as delivering greater nutritional benefits. However, production of most of these commodities is still low and growing slowly, a cause of undernutrition and over-reliance on imported foods. Policies can be put in place to support this shift in the commodity mix.
Emphasizing Productivity improvements.
As noted, there has been minimal improvement in yields for most crops over the past 10 years. However, there are exceptions, with some farmers discovering sizeable productivity gains through improved seed varieties, adopting low-cost technologies, use of inputs including fertilizer and herbicides, use of better storage, and other innovations. These gains can be shared more widely by investing in targeted extension services, policies and programs that improve the supply of inputs and address farmer credit constraints and risk aversion.

Support development of food processing, especially through MSMEs where possible.
This will increase agriculture value-addition in the post-production phase, generate more stable and remunerative jobs in the agri-food sector as well as serve the growing domestic demand which is currently met through rising imports.
Annex 1: Key Indicators

Annex Table 1: Economic Indicators

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>Real sector</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(annual percentage change, constant)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross domestic product (non-oil)</td>
<td>3.4</td>
<td>-3.1</td>
<td>-0.7</td>
<td>2.1</td>
<td>-8.3</td>
<td>2.9</td>
<td>3.9</td>
</tr>
<tr>
<td>Final consumption expenditure</td>
<td>1.7</td>
<td>-1.2</td>
<td>0.8</td>
<td>3.5</td>
<td>0.6</td>
<td>0.3</td>
<td>4.9</td>
</tr>
<tr>
<td>Gross fixed capital formation</td>
<td>15.3</td>
<td>-16.7</td>
<td>-1.5</td>
<td>-17.4</td>
<td>-42.5</td>
<td>-13</td>
<td>38.8</td>
</tr>
<tr>
<td>Consumer price index, period average</td>
<td>-1.5</td>
<td>0.5</td>
<td>2.3</td>
<td>0.9</td>
<td>0.5</td>
<td>3.8</td>
<td>7</td>
</tr>
<tr>
<td><strong>Fiscal sector</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(percentage of non-oil GDP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Revenue</td>
<td>45</td>
<td>42</td>
<td>47</td>
<td>43</td>
<td>46</td>
<td>45</td>
<td>42</td>
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<tr>
<td>Domestic revenue</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>11</td>
<td>10</td>
<td>10</td>
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<tr>
<td>Estimated Sustainable Income</td>
<td>33</td>
<td>30</td>
<td>35</td>
<td>31</td>
<td>34</td>
<td>35</td>
<td>32</td>
</tr>
<tr>
<td>Total expenditure</td>
<td>99</td>
<td>75</td>
<td>75</td>
<td>73</td>
<td>71</td>
<td>92</td>
<td>101</td>
</tr>
<tr>
<td>Recurrent expenditure</td>
<td>62</td>
<td>59</td>
<td>51</td>
<td>54</td>
<td>61</td>
<td>84</td>
<td>89</td>
</tr>
<tr>
<td>Capital expenditure</td>
<td>36</td>
<td>16</td>
<td>24</td>
<td>18</td>
<td>10</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>Fiscal balance</td>
<td>-54</td>
<td>-33</td>
<td>-29</td>
<td>-30</td>
<td>-26</td>
<td>-47</td>
<td>-59</td>
</tr>
<tr>
<td><strong>Monetary and Financial sector</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(as stated)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credit to the private sector (% growth)</td>
<td>-5.3</td>
<td>24.5</td>
<td>-2.4</td>
<td>4.3</td>
<td>11.2</td>
<td>5.8</td>
<td>33</td>
</tr>
<tr>
<td>Lending interest rate (%)</td>
<td>14.5</td>
<td>12.1</td>
<td>11.9</td>
<td>12</td>
<td>11.3</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Nominal effective exchange rate (index)</td>
<td>94.4</td>
<td>94.8</td>
<td>96.3</td>
<td>97.4</td>
<td>98.7</td>
<td>96.5</td>
<td>101.6</td>
</tr>
<tr>
<td>Real effective exchange rate (index)</td>
<td>110.9</td>
<td>109</td>
<td>111.2</td>
<td>112</td>
<td>113.2</td>
<td>113.0</td>
<td>121.8</td>
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<td><strong>External sector</strong></td>
<td></td>
<td></td>
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<tr>
<td>(percentage of non-oil GDP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current account</td>
<td>-33</td>
<td>-18</td>
<td>-12</td>
<td>3</td>
<td>-3</td>
<td>1</td>
<td>-61</td>
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<td>Goods and services</td>
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<td>Primary income</td>
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<td>15</td>
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<td>-3</td>
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<td>-8</td>
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**Memorandum items**

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<td>Oil production (million BOE)</td>
<td>47</td>
<td>42</td>
<td>39</td>
<td>38</td>
<td>36</td>
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<td>Petroleum Fund, closing balance (USD million)</td>
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<td>16,799</td>
<td>15,804</td>
<td>17,692</td>
<td>18,991</td>
<td>19,651</td>
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Source: Ministry of Finance, BCTL

Note: GDP 2022 is based on Government estimated number released on last April 2023. Starting from 2019 the BOP figures include the Export and Import Value from Oil activities,
References


