Logging off: Searching for new growth drivers for Solomon Islands

By

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ABSTRACT

Logging has a dominant role in the economy of Solomon Islands. Logs and timber accounted for 70% of exports from 2015 to 2020, providing crucial supply of foreign currency to the import-dependent economy. Export duties on logs also accounted for 18% of domestic revenues over the same period while the sector employs around 20% of the labor force. Although the direct share of logging and forestry was only around 11% of GDP, its overall contribution to the economy could be as much as 50% due to its links to other sectors such as manufacturing, trade, and transportation.

From its peak of 2.9 million cubic meters (m^3) in 2016, logging output has generally contracted annually down to 1.6 million m^3 in 2022. The 22.4% y-o-y decline in 2022 was the sharpest ever, and it was the first time since 2013 that output was below 2.0 million m^3. It was, however, still way beyond the 250,000 m^3 sustainable level identified in earlier studies. Although in line with the government's aim to shift to more sustainable logging output, fall in demand from overseas and supply constraints caused by COVID-19 also contributed to the decline.

The government has embarked on a path leading to sustainable logging output, with the *National Development Strategy 2016-2035* recognizing the need to shift plantation logs from natural logs. Value added from logging must also be increased by exporting timber instead of raw logs. To achieve the goals of sustainable harvesting, the *2020 Forest Policy* provides the strategies and implementation guidelines. While the decline in log output is expected, there is no clear target on when sustainable level will be achieved nor a quantification of its effects on the economy.

The paper analyzes the impact of the decline in logging output on the economy of Solomon Islands. Using the Macroeconomic Monitoring and Forecasting Framework (MMFF) developed by the Asian Development Bank, the effects of logging decline on key economic variables are examined. The MMFF is an excel based tool for recording macroeconomic variables including national accounts, fiscal accounts, balance of payments, and monetary aggregates. By interlinking these variables, forecasts can be made that are internally consistent for the real, external, fiscal, and monetary sectors. Key variables can be identified to be used for forecasting GDP growth and other indicators. While the MMFF was mainly developed for short-term forecasting (1 to 2 years), the paper is one of the first attempts to use it for medium-term (5 to 10 years) economic modelling.

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The first part of the paper looks at the direct effects of log output decline on key economic variables. After establishing a baseline (where log output falls based on the average change from 2017 to 2020), different scenarios are examined including: i) harvesting of raw logs stopped in 2024; ii) a gradual decline to sustainable level of 250,000 m^3 over 10 years; and iii) a steeper decline to sustainable level in 5 years. Aside from growth of GDP and GDP per capita, impact on other variables such as fiscal balance, public debt, and trade balance will be examined with focus over the next 5 to 10 years. On the second part of the paper, alternate growth drivers will be examined including tourism, crop production, and fishing. The MMFF will be used to find out the rate of growth needed for each sector if they are expected to replace logging exports in terms of foreign exchange earnings or tax revenue.

With the expected economic losses from the decline of logging quantified, the government will be in a better position to respond, such as by setting up safety nets or fiscal buffers. The need to expedite passage and implementation of reform measures to enhance domestic revenue mobilization is also emphasized. Highlighting the need to avoid overreliance on a single sector, development of multiple industries is recommended. With tight fiscal space, the government must be able to develop several projects in multiple locations with financial outlay from the national government used prudently and efficiently. Other recommendations may include:

- Invest on integrated, sustainable, and multi-sectoral or multi-use developments;
- Involve local governments, communities, and the private sector in the development from conceptualization to implementation;
- Ensure transportation and communication links are fully-integrated to bring down transaction costs;
- Focus on long-term projects that can benefit multiple generations by ensuring developments and projects are climate-proofed; and
- Unleash the potentials of digital connectivity in searching for partners, investors, and customers.

JEL classification: E61, O44, Q01

Introduction

Logging and forestry have long dominated the economy of Solomon Islands. Although its share of GDP was only around 10.6% from 2015 to 2020, it has links to other sectors such as manufacturing, trade, and transportation. From 2006 to 2022, logs and timber accounted for 60% of exports providing crucial supply of foreign currency to the import-dependent economy. Export duties on logs also accounted for 16% of domestic revenues, over the same period. The sector employs around 20% of the labor force.

With its geography, forests used to cover around 90% of Solomon Islands land area but decades of logging activity have reduced this. Nevertheless, logging output has generally contracted annually down to 1.6 million cubic meters (m^3) in 2022 from its peak of 3.0 million m^3 in 2016. The 22.4% decline in 2022 was the sharpest ever, and it was the first time since 2013 that output was below 2.0 million m^3. These levels of log output, however, were way beyond the 250,000 m^3 sustainable level identified in earlier studies. Although the decline in logging is generally in line with the 2020 Forest Policy (which aims to shift to more sustainable levels), fall in demand and supply constraints caused by COVID-19 also contributed.

In the National Development Strategy 2016-2035, the government identified the development of productive sectors to spur growth in lieu of the decline in the logging sector. These productive sectors include crop and livestock production (discussed under agriculture), fisheries, and tourism. The paper tries to quantify the economic impacts of the decline in logging output. Using the Macroeconomic Monitoring and Forecasting Framework developed by the Asian Development Bank, the effects of lower log output on key economic variables such as goods and services trade balance and gross domestic product (GDP) are examined. The paper then explores alternative growth drivers and sees their potentials based on different programs and plans of the government.

The study can provide the government a guide in terms of sectoral priorities. Logging is a sector that is easily prone to abuse due to relatively low capital requirements and minimal skill needs for workers but with great costs to the environment. Alternative growth engines would all require massive capital investments and would take years before meaningful results are seen. With the need to avoid a similar situation in the future where exports or growth are reliant on an individual sector, there is a need to develop multiple industries at once. With tight fiscal space, the government must be able to develop several projects in multiple locations with relatively low outlay from the national government.

Government policies on logging

Different administrations from the colonial period until independence have implemented different policies to promote sustainable logging but with varying levels of success.

- Logging policies in pre-independence period

The Forestry and Timber Rights Utilisation Act 1970 aimed to conserve and manage private and public forests, to declare State Forests and Forest Reserves, and to regulate the felling of trees and the operation of timber mills. Implementation of the Act included application to the Commissioner of Forest Resources to acquire timber rights on customary land; certificate issued by an area council; certificate given by an

appropriate Government for approving an agreement for the granting of timber rights; and an agreement for the sale of timber rights in customary land.

- Logging policies in post-independence period until ethnic tensions

Post-independence the Forests Act 1999 which aimed to ensure effective and ecologically sustainable management of forest resources; promotion of a sustainable commercial timber industry, and protection and conservation of forest resources, habitats and ecosystems including the maintenance of ecological processes and genetic diversity. The Act provides provision for the: (i) Commissioner of Forests to develop and implement the national timber industry policy and a forest resource management strategy, (ii) Minister responsible for forests to appoint Solomon Islands Forestry Board to provide advice on matters relating to the conservation, management and development of forests in the country, and (iii) the Minister responsible for forests to introduce Code of Logging Practice (CLP). The CLP was introduced in 2002 which aims to ensure selection of logging location does not disturb the ecological and cultural functions of the forest, and its productivity in terms of wood and water production are protected.

- Logging policies under Regional Assistance Mission to Solomon Islands (RAMSI)

With the ethnic tensions erupting in 1998, order was restored with the arrival of the Regional Assistance Mission to Solomon Islands (RAMSI) in July 2003. Under the RAMSI from 2003 to 2017, Solomon Islands joined the United Nations-Reducing Emissions from Deforestation and Forest Degradation in developing countries (REDD) Programme as a partner country in 2010. It further committed itself to additional forest related activities (REDD+) in terms of sustainable management and conservation of forests and enhancement of forest carbon stocks. In 2014, the government developed a national REDD+ roadmap and established a REDD+ division within the ministry responsible for forests.

In 2013, domestic banks Westpac Banking Corporation, Australia and New Zealand Banking Group Limited and Bank South Pacific closed bank accounts belonging to foreign logging companies making it impossible to receive payments for timber exports. The government introduced a domestic bank, the Pan Oceanic Bank (POB), in 2014 to facilitate logging receipts. In October 2017, the POB corresponding US dollar denominated bank ceased facilitating logging receipts. International banks were unwilling to fill this role due to possible counter-terrorism financing and anti-money laundering concerns. In 2017, the Central Bank of Solomon Islands helped with the facilitation of the export receipts through the Federal Reserve Bank of New York (FRBNY). However, as these are commercial transactions, the FRBNY has given notice that it will stop facilitating these payments at the end of December 2018, a deadline which has previously been extended from June 2018. In November 2019, POB established a correspondent banking relationship for US dollars with Crown Agents Bank (United Kingdom).

- Logging policies post-RAMSI

In 2020, the National Forest Policy was developed and launched. The policy re-emphasizes sustainable forest resources, through natural forest rehabilitation and plantation development that ensures sustainable wood flow which increases sustainable processing of value-added timber products, maintain and enhance environmental services benefits, research and development of non-timber forest products,

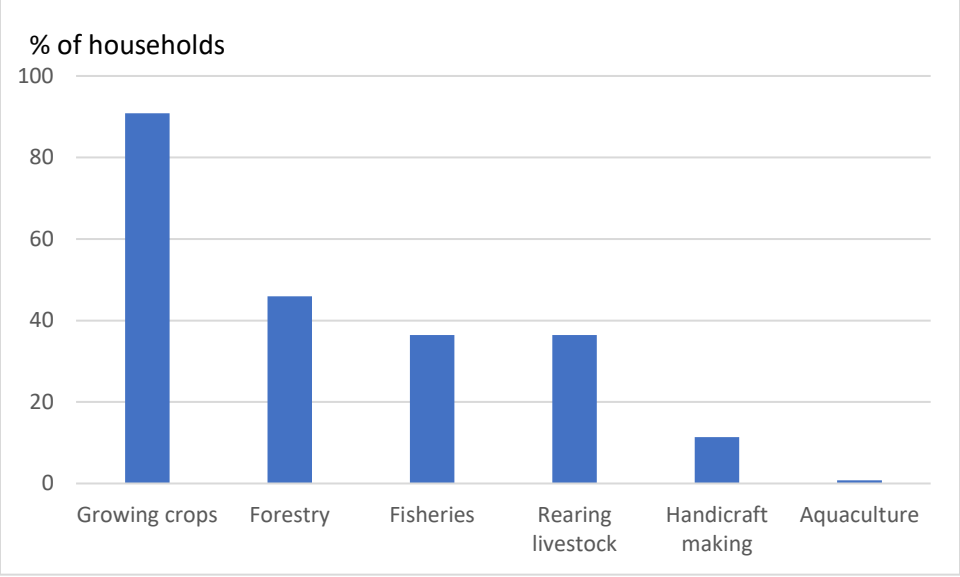
protection of biodiversity and climate change mitigation and adaptations through proper planning and use of forest resources.

Potential sources of growth

Crop Production and Livestock

Although more than 90% of households engage in agricultural crop production and 36% of households raise livestock such as pigs and chickens, this is mainly for home consumption (Figure 1). For instance, only 40% of the 54 million kilograms of crops harvested in the year prior to the 2017 Agricultural Census was sold. Among the major crops, only cocoa has more households raising it mainly for sale (14% of households) than home consumption (less than 1%). The *2017 Agricultural Census* also noted that the most lucrative crops were coconut, betelnut, cocoa, cassava, and kumara, but "each yielded only slightly more than half of the expected attainable yield in sales. In large part this reflects the fact that much of the harvested crop remained unsold" (Government of Solomon Islands 2019). The agriculture sector is beset with challenges including limited access to markets and transportation, insufficient financing and technical expertise, and geographic and land-ownership constraints.

Figure 1: Solomon Islands Household Engagement in Agriculture



Note: Figures recalculated from the percent of agricultural households in the report to the percent of all households. The question allowed multiple answers.
Source: Government of Solomon Islands. 2019. *Report on National Agricultural Survey 2017*. Honiara.

To address these challenges, the government adopted the Agriculture Sector Growth and Investment Plan (ASGIP) 2021–2030 to strengthen, modernize, and commercialize the sector. It provides a guide for public and private sectors, promoting interventions to support economic growth, food security, and employment.

Under ASGIP, in February 2023 the Ministry of Agriculture and Livestock launched the New Day Strategy, which encourages multiple generations to engage in agricultural activities beyond the subsistence level, particularly youth (Government of Solomon Islands 2023). The New Day Strategy is part of the Solomon Islands Agriculture and Rural Transformation (SIART) Project which was launched in 2022 with the support of the World Bank. Fully aligned with ASGIP, the SIART Project aims to support 85,000 Solomon Islanders with training, farming and livestock support services, and infrastructure to help communities increase agricultural productivity (World Bank 2022). In anticipation of increased demand for food for the 2023 Pacific Games, the Ministry of Agriculture and Livestock is also supporting farmers and promoting supply chain improvements to increase production.

To boost the export of crops as targeted in ASGIP, in 2021 the government revitalized the Commodity Exporting Marketing Authority (CEMA). Established in 1984, CEMA is tasked to purchase, sell, and export commodities and to establish refineries for downstream processing of crops for export and domestic use. To increase the production of goods for export markets, CEMA established various centers in provincial areas. For example, in December 2021 a refinery and buying center was established in Noro, Western Province, and in May 2022, another buying center was opened at Pakera in Makira-Ulawa Province. These buying centers and refineries purchase cocoa and copra, with plans to extend into other agricultural products. Buying centers in five other provincial sites and one in Honiara are planned. In June 2022, the government renamed CEMA into Solomon Commodities with the brand "Solomon Is. Organic" (Government of Solomon Islands 2022).

Fishing and Marine Resources

Like crop production, the fisheries sector has tremendous potential. While fishing license revenues contribute significantly to nontax revenue, the government is focused on maximizing untapped revenues from domestic fishing activities. The Ministry of Fisheries and Marine Resources has estimated that the country has the potential to harvest as much as 90,000 metric tons of tuna annually. This compares with an annual production of between 25,000 and 30,000 metric tons from the country's sole tuna processing operation in Noro, Western Province (Solomon Times 2023). While 36% of households engage in fisheries, only 3% do so mainly for sale while 21% engage in fishing mainly for consumption and occasional sale. Less than 1% of households engage in aquaculture (Figure 5).

To ensure the conservation, management, and sustainable development of marine resources, the Ministry of Fisheries and Marine Resources is implementing the Solomon Islands National Fisheries Policy 2019–2029, with three main policy areas: i) inshore and inland fisheries, ii) offshore fisheries, and iii) aquaculture (Government of Solomon Islands Ministry of Fisheries and Marine Resources 2019). For offshore fisheries, the focus is on processing and exporting tuna. To increase processing capability, a tuna processing plant is planned for Bina Harbour in Malaita Province. It is expected to create more than 5,500 new jobs and generate foreign direct investment of $40 million through public−private partnerships (IFC 2022). Onshore processing of this valuable resource could be a strong source of revenue.

For freshwater fisheries and aquaculture, the government is focusing on the cultivation of Nile tilapia (a type of fish), which is expected to boost incomes while providing a relatively cheap source of protein.

Other aquaculture activities include farming pearl oysters, giant clams, and seaweed, which are supported by different private sector partners.

In recognition of the important role communities play in resource management, the government has also developed the Community Based Coastal and Marine Resource Management Strategy 2021–2025. The strategy outlines activities to scale up support for community-based resource management (CBRM) across the country and increase the capacity and involvement of provincial authorities. The strategy targets 25% of coastal, watershed, and inshore areas to be under improved management through CBRM by 2025. Improved CBRM will help improve industry sustainability.

Tourism

Compared to nearby Fiji and Vanuatu, the tourism sector is underdeveloped in Solomon Islands. The 7,327 visitor arrivals in 2022 were less than 25% of arrivals in 2019 when 27,730 visitors arrived by air and 4,321 by sea. In 2019, visitor arrivals reached 120,628 in Vanuatu and 894,389 in Fiji (SPTO 2022). Solomon Islands' tourism potential is largely untapped due to numerous challenges, including the following:

(i) The difficulty of domestic travel that limits visitation to outer islands;
(ii) Unreliable and costly energy supply;
(iii) Poor waste management and sanitation services;
(iv) A weak business environment that limits foreign investment;
(v) Lack of access to finance for tourism operators;
(vi) Limited tourism skills and insufficient training capacities; and
(vii) Complex land ownership systems (Pacific Private Sector Development Initiative 2021).

To address the challenges in accessing suitable land for tourism developments, the International Finance Corporation (2021) developed a comprehensive tourism investor guide for Solomon Islands, which highlights investment-ready land suitable for tourism development.

The government Solomon Islands Tourism Recovery Plan 2021–2030 is the country's interim sector strategy and recovery plan, intended to: (i) return the industry to its 2019 position, and (ii) expand with a target of 100,000 arrivals per year by 2035. It details five points for recovery: restoration, extra care, future, reset, and measurement.

In addition to general sector recovery, there is increasing focus on the potential of expanding the expedition cruise ship market. The smaller cruise ships (70 to 150 passengers) can dock at a wide range of ports around the country. Appealing to bird watchers, mountaineers, explorers, and nature enthusiasts, passengers of expedition cruise ships stay for several days, with a spending profile like visitors by air. To attract more cruise expeditions, more could be done in terms of preparing and training local communities to accept more visitors and upgrading infrastructure and other port facilities.

Methodology

The paper uses the Macroeconomic Monitoring and Forecasting Framework (MMFF) developed by the Asian Development Bank, to examine the effects of logging decline on key economic variables such as growth of gross domestic product (GDP) and GDP per capita, fiscal balance, and trade and current

account balances. Patterned after the International Monetary Fund's Financial Programming and Policies (IMF FPP) framework, the MMFF is an simple, excel based framework for recording basic macroeconomic variables. Using economic theory, relationships between these variables can be exploited to make forecasts that are internally consistent for the real, external, and fiscal sectors. Key economic growth sectors or variables can be identified to be used for forecasting GDP and related variables. Although, the MMFF was mainly developed for short-term forecasting (i.e., from nowcasting to 2 years), the paper is among the first attempts to use it for longer-term forecasting (i.e., 5 to 10 years).

With the flexibility permitted by the MMFF in terms of generation of forecasts and estimates, forecasts can be made top-down (overall growth rate provided with sectoral growths projected by the framework) or bottom-up (sectoral growth rates estimated to produce an overall GDP growth estimate). In the paper, GDP forecasts are generally generated by using the 5-year average nominal growth of each subsector of the economy with some adjustments to account for sector-specific events or factors. The growth rates are adjusted to incorporate factors affecting the subsector. For instance, log output growth is used to adjust the growth rates of forestry, manufacturing, wholesale and retail trade, and transportation. Nominal GDP levels are then deflated incorporating inflation forecasts benchmarked against global commodity prices as published by the Pink Sheets of World Bank and the World Economic Outlook of the International Monetary Fund. For instance, the deflator for wholesale and retail trade is based on the overall consumer price index, but the deflator for agriculture is based on the food basket of the CPI. Components are then added to get the overall nominal and real gross domestic product.

In the case of Solomon Islands, major economic variables affecting the GDP forecast includes log output, government consumption, and government investment. Government consumption and investment are the main variables used in estimating the fiscal balance, along with domestic revenues and grants. Interlinkage in the framework can be highlighted with log output. Growth in log output is major variable in calculating log exports (which affects the trade balance), export duty on logs (which affects the fiscal balance), and several components of the GDP as mentioned earlier. For this paper, we focus mainly on log output and its effects on major economic variables.

Estimates of other major variables are done either through the average growth rate for the past 3 or 5 years of the major components or through Microsoft Excel's forecast.est command which incorporates seasonal adjustment based on historical quarterly data. Adjustments are made into the projections to incorporate expected changes on variables such as prices and demand or supply constraints (see Appendix 1).

Baseline and alternative scenarios

Forecast for log output under the baseline is generated using Microsoft Excel's forecast.est command using quarterly output from 2006 to 2022. Log exports are then projected using the implied export price of logs based on the average value for 2022. For the forecast period, the export price of log is fixed. Export duty revenue from logging is derived by multiplying the average effective tax rate from 2019 to 2021 to log exports.

Alternative growth drivers scenarios

- Agriculture: Export of crops in 2024 is double of the level in 2022, then grow by 15% annually until 2033. Increase in exports include expansion to other crops;
- Fisheries: Fish catch increase by 50% in 2023 following opening of Bina Harbour, grow by 20% until 2027, then by 10% until 2033
- Tourism: visitor arrivals reach 2019 level in 2023 (29,000), then 100,000 by 2035

Preliminary Results

Baseline

Under the baseline scenario, log output is projected to decline by an average of 7.5% annually from 2023 to 2033 (Table 1). This decline is less severe compared to the -15.7% during the COVID-19 period (2020-2022), but a significant reversal of the 11.0% annual average increase in the pre-COVID-19 period (2010-2019). Log output would be at 1.15 million m^3 per year in the baseline period, around half of the average output of 2.3 million m^3 in the pre-Covid-19 period. The decline in output under the baseline is less sharp compared during the COVID-19 period.

GDP growth rate under the baseline scenario was at 1.9%, less than half of the average growth rate in the pre-covid period. This was an improvement, however, from the 2.7% average contraction in the covid period. By the end of the forecast period in 2033, GDP is estimated to be at $2.1 billion, 32% higher compared to the end of the covid period. It should be highlighted that GDP declined by 0.2% from the end of the pre-covid period (2019) to the end of covid period (2022).

Despite the increase in GDP under the baseline scenario, GDP per capita in constant prices (at $1,426) would be 8% lower than in 2022 and 22% lower than in 2019. With the decline in log exports, goods and services trade balance is projected to worsen to an average of 18.3% of GDP during the baseline period, significantly worse than the 14.3% deficit under covid period and 8.6% in the pre-covid period. The deterioration in the fiscal balance is notable, moving from 1.9% of GDP in the pre-covid period and -1.7% under covid to 6.7% in the baseline scenario.

Table 1: Comparison of Major Economic and Logging Statistics

	Pre-COVID 19	COVID-19	Baseline
	(2010-2019)	(2020 – 2022)	(2023-2033)
Log output (million cubic meters)	2.27	1.99	1.15
Change in log output (% per annum, avg.)	11.0	-15.7	-7.5
Log exports ($ million, avg.)	269	219	142
% of exports	*59.4*	55.4	38.7
Real GDP growth rate (%, avg.)	4.1	-2.7	1.9
Nominal GDP growth rate (%, avg.)	7.4	-0.1	2.6
GDP ($ million eop)	1,620	1,616	2,138
GDP per capita, current ($ eop)	2,245	2,068	2,041
GDP per capita, constant ($ eop)	1,821	1,551	1,426

Inflation (%, avg.)	3.0	2.8	3.3
Trade balance (% of GDP, avg.)	-8.6	-14.3	-18.3
Current account balance (% of GDP, avg.)	-4.5	-6.7	-8.5
Fiscal balance (% of GDP, avg.)	1.9	-1.7	-6.7

$ = United States dollar, avg. = average, eop = end of period, COVID-19 = coronavirus disease, GDP = gross domestic product.
Sources: Authors' estimates using data from the Central Bank of Solomon Islands and Ministry of Finance and Treasury.

Alternative Scenarios

We now examine results of simulations for different scenarios. With the number of hypothetical cases that can be modeled is infinite, we focus on just three scenarios. Under the first scenario, log output is projected to reach the sustainable level of 250,000 m^3 by the end of the forecast period in 2033. This leads to a steeper decline in log output (-15.5% annually) compared to the baseline scenario (-7.5%). Under this scenario, average annual log output was at 670,000 m3 from 2023 to 2033 (Table 2).

In the second scenario, we project log output to be at an average of 250,000 m3 annually from 2023 to 2033. This would imply a very steep decline in log output, at -36.6% annually for the next 10 years. In these two scenarios, GDP growth would be at 1.6% annually and 1.3%, respectively. As expected, these would lead to lower GDP and GDP per capita by the end of the forecast period, while the trade, current account, and fiscal deficits are higher.

In the third scenario, the counterfactual, we explore the level of output needed to reach a GDP growth rate in the forecast period at par with the pre-covid period of 4.1% annually. The counterfactual would require log output to expand by 18% annually with output at 4.9 million m^3 annually, more than twice the level in the pre-covid period. Despite the nominal GDP rising to almost twice the level at the end of the pre-COVID period, GDP per capita in real terms remain 1.6% lower in 2032 than in 2019. This highlights the need for the economy to grow at a much higher rate just to surpass the pre-covid GDP per capita level. If the growth would remain be driven by logging, the cost to the environment may be catastrophic with the high level of log output needed. The immense challenge for Solomon Islands is to identify other sources of growth that is not within the extractive sectors.

Table 2: Comparison of Major Economic and Logging Statistics under Different Scenarios

	Pre-COVID 19	COVID-19	Baseline	Scenario 1 250k eop	Scenario 2 250k avg	Counterfactual
Years	(2010-2019)	(2020 – 2022)	(2023-2033)	(2023-2033)	(2023-2033)	(2023-2033)
Log output (million cubic meters)	2.27	1.99	1.15	0. 67	0.25	4.94
Change in log output (% per annum, avg.)	11.0	-15.7	-7.5	-15.5	-36.6	18.0
Log exports ($ million, avg.)	269	219	142	82	31	609

% of exports	*59.4*	55.4	38.7	26.6	11.7	69.2
Real GDP growth rate (%, avg.)	4.1	-2.7	1.9	1.6	1.3	4.1
Nominal GDP growth rate (%, avg.)	7.4	-0.1	2.6	2.2	1.7	6.0
GDP ($ million eop)	1,620	1,616	2,138	2,044	1,947	3,056
GDP per capita, current ($ eop)	2,245	2,068	2,041	1,951	1,858	2,917
GDP per capita, constant ($ eop)	1,821	1,551	1,426	1,383	1,337	1,792
Inflation (%, avg.)	3.0	2.8	3.3	3.3	3.3	3.3
Trade balance (% of GDP, avg.)	-8.6	-14.3	-18.3	-22.3	-26.3	3.0
Current account balance (% of GDP, avg.)	-4.5	-6.7	-8.5	-12.0	-15.6	11.4
Fiscal balance (% of GDP, avg.)	1.9	-1.7	-6.7	-7.6	-8.5	-2.4

$ = United States dollar, avg. = average, eop = end of period, COVID-19 = coronavirus disease, GDP = gross domestic product.
Sources: Authors' estimates.

Alternative Growth Drivers Scenarios

We examine three alternative growth scenarios: CROPS (agricultural crops and livestock), FISH (fish and other marine resources), and TOURISM (Table 3). Based on the specific assumptions laid above, CROPS lead to the highest GDP growth rate at 2.9% annually, followed by Fish (2.4%) and TOURISM (2.0%). The relatively lower GDP growth for TOURISM probably stems from its very small size in the covid period. All the alternative growth drivers are better than the baseline scenario. With the higher GDP growth, GDP and GDP per capita are all expected to be higher than in the baseline.

Higher exports of goods (for CROPS and FISH) and services (for TOURISM) are projected to lead to lower trade deficits than in the baseline. In the FISH scenario, the current account balance is even projected to reach a small surplus (0.3% of GDP) in the forecast period.

There is tremendous potential in all of the alternative growth scenarios and as their development is expected to be dine in parallel, the expected economic growth impacts can be largely when coordinated properly.

Table 3: Comparison of Major Economic and Logging Statistics under Alternative Growth Drivers

	Pre-COVID 19	COVID-19	Baseline	CROPS	FISH	TOURISM
Years	(2010-2019)	(2020 – 2022)	(2023-2033)	(2023-2033)	(2023-2033)	(2023-2033)
Log output (million cubic meters)	2.27	1.99	1.15	1.15	1.15	1.15
Change in log output (% per annum, avg.)	11.0	-15.7	-7.5	-7.5	-7.5	-7.5
Log exports ($ million, avg.)	269	219	142	142	142	142
% of exports	*59.4*	55.4	38.7	38.7	38.7	38.7

Real GDP growth rate (%, avg.)	4.1	-2.7	1.9	2.9	2.4	2.0
Nominal GDP growth rate (%, avg.)	7.4	-0.1	2.6	3.5	3.3	2.6
GDP ($ million eop)	1,620	1,616	2,138	2,354	2,298	2,148
GDP per capita, current ($ eop)	2,245	2,068	2,041	2,247	2,193	2,050
GDP per capita, constant ($ eop)	1,821	1,551	1,426	1,577	1,502	1,433
Inflation (%, avg.)	3.0	2.8	3.3	3.3	3.3	3.3
Trade balance (% of GDP, avg.)	-8.6	-14.3	-18.3	-10.5	-9.2	-15.0
Current account balance (% of GDP, avg.)	-4.5	-6.7	-8.5	-1.3	0.3	-5.2
Fiscal balance (% of GDP, avg.)	1.9	-1.7	-6.7	-5.5	-5.8	-6.7
Fish catch (metric tons)	31,356	26,520	30,091		91,444	
Fish exports ($ million)	49.6	52.0	56.0		177.8	
Fish exports (% of GDP)	3.8	3.3	3.0		8.6	
Crop and livestock exports ($ million)	56.1	56.1	43.0	183.6		
Crops (% of GDP)	4.7	3.5	2.2	8.6		
Visitor arrivals	23,919	4,167	31,337			51,571
Tourism receipts ($ million)	693.4	202.3	99.5			163.7
Tourism receipts (% of GDP)	6.8	1.6	5.1			8.3

$ = United States dollar, avg. = average, eop = end of period, COVID-19 = coronavirus disease, GDP = gross domestic product.
Sources: Authors' estimates.

Extended policy implications

With the expected economic losses with the decline of logging quantified, the government will be in a better position to put fiscal buffers. Passage and implementation of reform measures to enhance domestic revenue mobilization must be expedited. The government must also be more circumspect in terms of infrastructure projects, especially those funded by external loans. The quantification of losses would also help the government make more realistic expectations in terms of returns to investments in new growth drivers. Other recommendations for the selection of growth projects include:

- Invest on integrated, multi-sectoral or multi-use projects.
- Involve local government, communities, and the private sector in the development from conceptualization to implementation.
- Focus on long-term projects that can benefit multiple generations
- Developments and projects should be climate-proofed

An integrated agro-tourism development maybe one of the solutions to Solomon Island's predicament. The accommodation may be provided by the private sector with options ranging from homestays to hotels. The food would be sourced mainly from local communities, with a focus on local cuisine. Aquaculture can be integrated in the system to provide a variety of dishes and nutrition options. The developments can be tied with cruiseship operators allowing tourists an option to stay for several days with cruises as the mode of transport (this can be an alternative to airports that are typically more expensive to build and maintain). The seaports can also be developed to improve offshore fishing.

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Appendix 1

Economic Variable	Estimation Method	Adjustment	
Log output	Forecast.est	None	
Fish catch	Forecast.est	None	