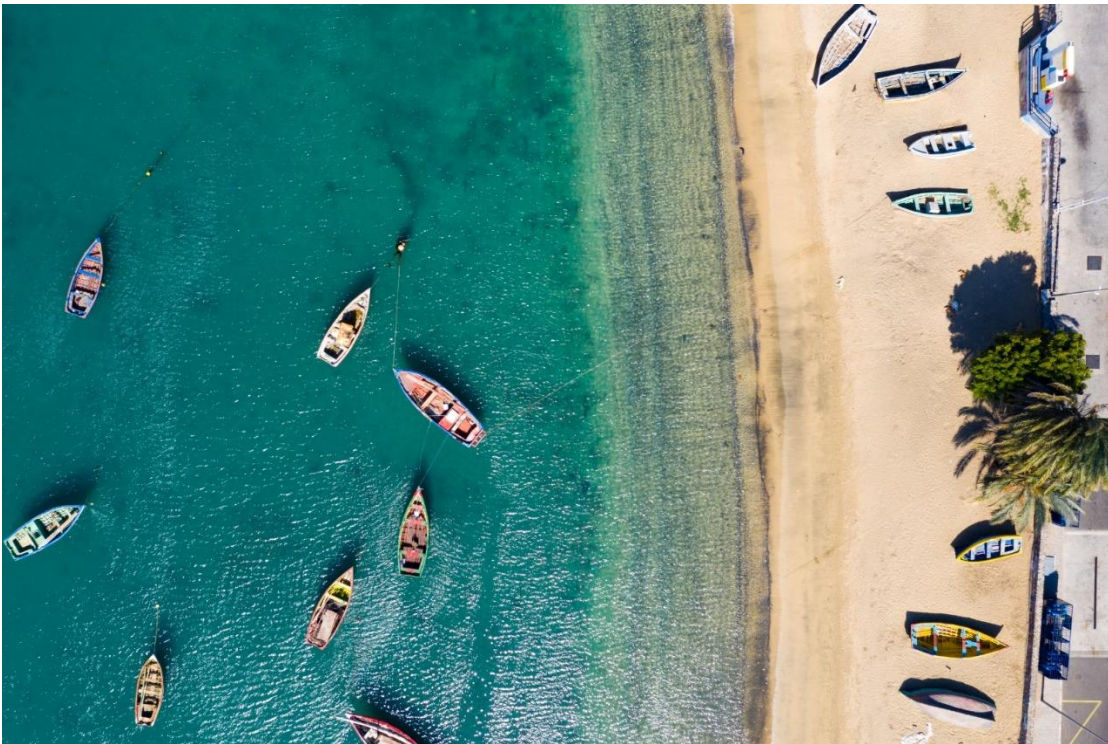# Cabo Verde
Economic Update

Climate-related shocks and fiscal sustainability:
potential impacts and policy options

May 2023

WORLD BANK GROUP
Macroeconomics, Trade & Investment

Acknowledgements

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List of Tables, Figures, and Boxes

Acronyms and Abbreviations

AAL	Annual average loss
CAD	Current account deficit
Cat DDO	Catastrophe Drawn Down Option
CPI	Consumer Price Index
CVE	Cabo Verde escudo
DSA	Debt sustainability assessment
FDI	Foreign direct investment
FNE	National Emergency Fund
FRS	Fiscal risk statement
GDP	Gross domestic product
GFDDR	Global Facility for Disaster Reduction and Recovery
IMF	International Monetary Fund
INE	National Institute for Statistics (Instituto Nacional de Estatística)
LDC	Least-developed country
MoF	Ministry of Finance
NPL	Non-performing loan
NTL	Nighttime lights
PEDS	Strategic Plan for Sustainable Development
PPP	Purchasing power parity
SIDS	Small Island Developing States
SLR	Sea-level rise
SOE	State-owned enterprise
SSA	Sub-Saharan Africa
WDI	World Development Indicators (World Bank)
WEO	World Economic Outlook (IMF)
y/y	Year on year

Executive Summary

Chapter 1: The State of the Economy

Recent Economic Developments and Outlook

Real GDP expanded by 17.7 percent in 2022, with per capita incomes surpassing the pre-pandemic levels. On the supply side, accommodation, transport, and commerce explained 60 percent of growth. On the demand side, exports (mainly tourism) and private consumption accounted for growth. The rebound in economic activity in 2022 was accompanied by a reduction in poverty (0.8 percentage points), despite the spike in inflation. Headline inflation reached 7.9 percent (y/y) in December 2022 after inflationary pressures emerged in 2021, fueled by high international oil and food prices and global supply chain disruptions due to the war in Ukraine. Higher food prices and low agricultural production, driven by the five year long drought, intensified food insecurity.

The strong economic growth in 2022 led to a reduction in poverty. Poverty rate fell from 20.1 percent in 2021 to 19.3 percent in 2022 (using US$3.65 per-day-2017 PPP), reaching the poverty levels of 2015. Economic growth was fundamental for poverty reduction, led by the creation of new jobs, especially in the tourism sector. However, poverty reduction was dampened by the increase in inflation in 2022, especially higher food prices. It is estimated that without the increase in food prices, poverty would have been 16.2 percent in 2022 ($3.65 per day PPP 2017), almost 3 percentage points lower and close to the pre-pandemic level (16.1 percent) in 2019.

The fiscal deficit narrowed to 4.1 percent of GDP in 2022, supported by the strong economic performance and increased fiscal revenues. Total revenue increased 18.3 percent, driven by personal income and VAT taxes, while total expenditure increased 5.4 percent, reflecting higher current expenditure, with measures taken to protect the most vulnerable from rising food insecurity and to control fuel and energy prices. The social protection system, through cash transfers, supported the most vulnerable. Fiscal financing needs for 2022 declined to US$97 million. They were fully covered by concessional credits, grants, and domestic borrowing.

The SOE sector continued to require fiscal support while it gradually recovers from the crisis caused by COVID-19. Fiscal risks coming from the sector further increased in 2022 and challenges remain to be addressed at the policy and institutional level. These risks stem mostly from the worsening of Cabo Verde Airlines (CVA) operational performance, triggering increased Government support through direct budget support and loan guarantees in 2020 and 2021. In 2022, additional loan guarantees accounted for US$46.6 million, driven mostly by ELECTRA, the electricity and water utility, (US$19.5 million). The stock of total guaranteed debt stood at US$189 million in 2022, representing 8 percent of GDP. Capitalization to SOEs accounted for US$18 million in 2022 (US$7.2 million in 2021), with CVA being the largest recipient with US$8.8 million. These fiscal vulnerabilities may undermine Cabo Verde's efforts to restore fiscal sustainability and maintain debt (as a share of GDP) to a declining trajectory in the medium term.

Public debt declined to 120.9 percent of GDP in 2022, driven by GDP growth. Public debt, which had been on a declining path since 2017, increased sharply to 143.7 percent of GDP in 2021, with the need to resort to additional external concessional loans and the issuance of treasury bonds to cover fiscal financing needs. Public debt continued to increase in 2022, by about 5.4 percent in nominal terms, but was offset by

the GDP expansion. According to the June 2022 joint WB/IMF Debt Sustainability Analysis, while the risk of external debt distress was upgraded from high to moderate, Cabo Verde's risk of overall debt distress remains high, but is assessed as sustainable. Considering these debt trends and the high vulnerability of the country to external shocks, improve the management and monitoring of fiscal risks, reduce direct support and loan guarantees to SOEs, continue to strengthen debt management and reduce domestic borrowing are key actions to reduce debt vulnerabilities.

The strong recovery in net-service exports narrowed the Current Account Deficit (CAD) from 11.8 percent of GDP in 2021 to 3.4 percent in 2022. Exports of tourism, which account for around 65 percent of services exports, led the increase in total exports. Tourism receipts increased more than 200 percent in 2022, representing 16.4 percent of GDP (6.3 percent in 2021), driven by the strong rebound of tourism arrivals, which surpassed the pre-pandemic levels. Robust increase in remittances, representing 12 percent of GDP, also supported the recovery of the CAD. The CAD was financed primarily by FDI and concessional loans. FDI accounted for 4.7 percent of GDP. International reserves in 2022 are estimated to cover about 6 months of imports, well above the 3.6 months recommended by the IMF 2019 External Stability Assessment (ESA). As such, reserves have helped support the accommodative monetary policy in place since 2020.

Real GDP growth is projected to reach 4.4 percent in 2023 and remain close to potential GDP over the medium-term. Growth will be supported by private consumption, investment in tourism and the blue economy and is expected to average 4.5 percent between 2023 and 2025. As the Government restructures the operation of several important SOEs through public-private partnerships (PPPs), direct sale and concession arrangements, and implements structural reforms under the strategic plan for sustainable development (PEDS II 22-26), further private investment will be mobilized to support growth. The Strategy aims to achieve greater and more sustained growth through increasing economic resilience, boosting productivity, and reducing market fragmentation. The successful implementation of the Strategy will enable local entrepreneurs to benefit from positive spillovers from the thriving tourism sector, thereby creating a more diversified and sustainable economy.

Inflation is expected to moderate in 2023, as global growth moderates, commodity prices stabilize, and supply bottlenecks ease. Headline inflation is projected at 5.2 percent. Over the medium-term, the nominal anchor (peg to the Euro) and return to fiscal consolidation should contain inflation, converging to 2 percent by end-2024. Poverty (using US$3.65 per-day-2017 PPP) is projected to remain above 19 percent in 2023 due to higher prices, especially of food items. The poverty rate is expected to fall to 18.7 percent in 2024 and then continue falling to 17.5 percent by 2025, supported by economic growth and the stabilization of inflation.

The outlook is subject to substantial downside risks stemming from uncertainties due to the war in Ukraine, and climatic shocks. An increase in the size or duration of the terms of trade shock emanating from the war in Ukraine war could lead to continued inflationary pressures and the continuation of policy support to ameliorate its impact, which in turn could deteriorate fiscal and debt sustainability. Political pressures against continued fiscal consolidation could also derail planned structural reforms to manage fiscal risks. A weak external demand in Cabo Verde's main tourism markets could weaken economic growth in the country. In addition, the country remains significantly exposed to natural disasters, including those related to climate change. With the highest level of climate disaster risk in Sub-Saharan Africa and one of the highest globally, Cabo Verde is already experiencing the effects of geological and climate-related events that are impacting livelihoods and key growth sectors. These events are expected to worsen in the foreseeable future, posing significant risks to the sustainability of the development model.

The table below details the policy options that could be considered to accelerate fiscal consolidation, reduce debt vulnerabilities, and empower complementary engines of growth to reduce dependence on tourism.

Policy Options

Policy Options	Responsibility	Timeline
Implement additional revenue mobilization reforms to accelerate fiscal consolidation		
Include in the budget report estimates of the impact of new tax expenditures on revenues and the compensation strategy for the foregone revenues in order to stabilize the mobilization of domestic resources.	MoF	Short term
Revoke or streamline the main cost ineffective tax incentives to rationalize tax expenditures.	MoF	Medium term
Adopt the ECOWAS Common external Tariff Schedule to increase tax revenue from international trade and to align with ECOWAS commitments.	MoF	Medium term
Reduce debt vulnerabilities		
Follow prudent borrowing policies to contain debt accumulation, including refraining from non-concessional borrowing.	MoF	Short term
Adopt a realistic approach to the SOE reform agenda and focus on selected SOEs to promote the most critical structural reforms to reduce direct support and loan guarantees to SOEs.	MoF	Medium term
Enhance debt transparency and strengthen the assessment of fiscal risk, especially for SOEs, to limit contingent liabilities.	MoF	Short term
Empower complementary engines of growth		
Improve the targeting of public support programs to support the most productive firms to reduce misallocation of input factors.	MoF	Short term
Support young firms in strengthening their capabilities in innovation and technology adoption, marketing, management, and workforce skills through targeted programs.	MoF	Short term
Sponsor suppliers' programs and similar mechanisms to improve linkages between local producers, intermediaries, and large buyers.	MoF	Medium term

Chapter 2: Climate-related shocks and fiscal sustainability: potential impacts and policy options

Disaster and climate-related shocks have recurrently affected government finances on two simultaneous fronts. Economic growth tends to contract when a disaster strikes, thus lowering revenue collection, while emergency expenditures post-disaster recovery and reconstruction efforts increase the need for public finance. To finance these unforeseen expenditures, the government has historically resorted to ad-hoc budget reallocation, disrupting ongoing development programs, and crowding out other growth-enhancing spending, with potentially long-lasting effects for human capital accumulation and the economy's potential growth rate.

The second part of this report focuses on stress testing the debt sustainability of the country under different flood scenarios. Chapter 2 builds upon the flood component of the Disaster Risk Profile developed for Cabo Verde, which determines the potential damages to physical assets that floods of different intensity and frequency could generate in Cabo Verde. This Risk Profile provides unique information on extreme flood events i.e., tail-risk events, which are expected to become more frequent as climate changes and need to be carefully analyzed to ensure debt sustainability looking forward. Based on the potential capital losses that these floods could produce, a traditional Cobb-Douglas production function is then used to derive potential growth impacts and calibrate mid-term macro-fiscal trajectories under each flood scenario. These estimates are then incorporated in the IMF-World Bank Debt Sustainability Analysis (DSA) to explore how an exogeneous shock in the year 2023 affects medium-term debt sustainability up to 2042. For this, we consider how different floods could affect the debt-to-GDP trajectory in relation to a "no-flood" scenario. Eventually, a "high fiscal resilience" scenario is explored to assess how fiscal policy can help smoothing the impacts of extreme floods.

Results show that, although recurrent small floods represent a limited threat, rare but more damaging floods could have a significant impact on Cabo Verde's debt sustainability. A rare but catastrophic flood could significantly push up debt rates, which would shift Cabo Verde's public debt above its indicative debt carrying capacity thresholds (up to 14 years in the most extreme scenario, from 2028 under baseline to 2042). Adopting policies to strengthen fiscal resilience, including through a US$10 million Cat DDO and an efficient rule-based mechanism to allocate and execute post-disaster financing, is found to provide some protection by enabling a faster recovery and reducing GDP losses, thereby leading to an accelerated reduction of the debt to GDP ratio. This would help the country fall below the indicative debt risk thresholds more quickly. Yet, for the most severe floods, even under this strengthened fiscal resilience scenario, the trajectory of the debt to GDP ratio would significantly deviate from the "no-flood scenario", potentially derail ongoing fiscal consolidation efforts and highlighting the urgent need to invest in risk reduction and climate adaptation to limit potential losses.

To reduce the risks highlighted in this chapter, authorities could consider a package of policy options structured around three broad areas of reforms. First, authorities could continue improving the incorporation of disaster and climate-related fiscal risks into the broader fiscal risk management strategy with a view to effectively inform fiscal policy making. Secondly, the Government could consider developing a more comprehensive risk-layered financing strategy to increase its capacity to conduct counter-cyclical policies in the aftermath of a disaster. Ensuring that rule-based mechanisms are in place to increase efficiency and transparency in post-disaster resources allocation and execution is equally important. Finally, targeted investments in risk reduction and climate change adaptation will be required to limit the future impacts of adverse natural events and cushion development prospects in a changing climate. Public policies have therefore a critical role to build economic resilience. The table below details the policy options that could be considered to this end.

Policy Options

Policy Options	Responsibility	Timeline
Account for, and incorporate, disaster and climate-related fiscal risks into the broader fiscal risk management strategy		
Strengthen the inclusion of disaster and climate risks in the fiscal risk statement	MoF/Fiscal Risk Committee	Short term
Incorporate these risks into medium-term fiscal policy documents such as the medium-term fiscal frameworks (MTFFs), medium-term debt strategy (MTDS), and Debt Sustainability Analysis.	MoF/Fiscal Risk Committee	Medium term
Develop an integrated risk-layered strategy to increase budgetary capacity for a quick response in the wake of a disaster while preserving public finance sustainability		
Delineate explicit and implicit contingent liabilities associated with disasters and climate-related shocks	MoF/Fiscal Risk Committee	Short term
Bring together existing risk financing instruments within a strategic and integrated vision and assess diverse risk-financing options to increase coverage against disasters and climate-related shocks, considering the wider macroeconomic conditions	MoF/Fiscal Risk Committee	Medium term
Promote rules-based mechanisms to increase efficiency and transparency in post-disaster resources allocation and execution	MoF/FNE	Medium term
Climate-proof critical public infrastructure, enforce risk-informed territorial planning and promote targeted investments in disaster risk reduction and climate adaptation		
Climate proof public investments through the incorporation of climate and disaster risk considerations into the design, formulation, and evaluation of new investment projects	MoF/DNP	Short term
Increase the resilience of road networks through risk-informed transport asset management.	MIOTH / Infraestruturas de Cabo Verde/ Estrades de Cabo Verde (ECV)	Medium term
Strengthen territorial planning and increase coastal resilience through a mix of green and grey infrastructure that leverage Nature-based Solutions.	Ministry of Infrastructure, Territorial Planning and Housing (MIOTH) / INGT/ Ministry of Environment and Agriculture / Ministry of the Sea	Medium term

Part I –The State of the Economy

A. Recent Developments

1. Real Sector

Growth rebounded strongly in 2022, despite global economic headwinds. Good performance by the tourism sector, combined with higher private consumption, supported growth. However, elevated global fuel and food prices have exacerbated inflationary pressures.

1. **The shock resulting from COVID-19 produced the largest contraction on record (19.3 percent) in 2020 and exposed the country's economic vulnerabilities.** Prior to the crisis, Cabo Verde experienced robust economic growth driven by a thriving tourism sector and strong structural reforms, mainly around the SOE sector. Between 2016 and 2019, growth averaged 5 percent (3.2 percent in per capita terms). The COVID-19 shock negatively impacted the country through the tourism sector, which represents 25 percent of GDP and drives around 40 percent of overall economic activity, and through the reduction of Foreign Direct Investment (FDI), a critical source of external finances and a key driver of growth. The crisis was driven by the nine-month shutdown of the tourism sector and their associated negative spillovers in upstream sectors. Net exports were a drag on growth, with a reduction of exports of goods and services of 58.9 percent. Reversing the progress made since 2015, the national poverty rate (using the $3.65 per-day-2017 Purchasing Power Parity) increased from 16.1 percent in 2019 to 21.5 percent in 2020.

2. **After having grown by 7 percent in 2021, Cabo Verde's economic recovery from the COVID-19 pandemic has strengthened in 2022, with growth reaching 17.7 percent.** On the supply side, growth was underpinned by the value added of accommodation, commerce, and transport sectors, which accounted for 67 percent of GDP growth, as well as by taxes net of subsidies, which accounted for 23 percent of GDP growth (Figure 1). The strong recovery of the tourism sector, with tourist arrivals surpassing 2019 levels, is driving economic activity in the country. The construction sector underperformed in 2022, resenting the high levels of inflation that created uncertainty and led to the postponement of domestic investments. Overall, the services sector contributed 17 p.p. to GDP growth, while manufacturing, driven by fish processing industries, contributed 1.3 p.p. The agriculture and fishing sector negatively contributed 0.7 p.p. to growth, reflecting mainly the 5-year long drought that continues to strike the country.

Figure 1: Services is the key sector driving GDP Growth
(Percentage points)
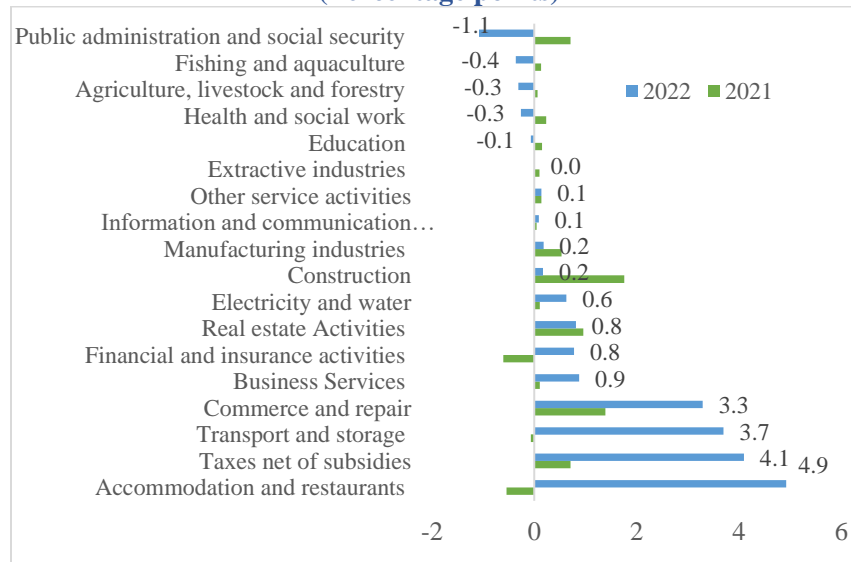
Source: Author's calculations using authorities' data and WBG estimations (February 2023)

3. **Exports and private consumption led economic growth on the demand side.** Exports, mainly tourism, and private consumption accounted for the economic growth, reflecting higher external demand and complete resumption of mobility (Figure 2). Total investment decreased in 2022, by 31.8 percent, with high uncertainty and prices affecting domestic investment decisions. However, FDI performed well in 2022, accounting for 4.9 percent of GDP, up 0.5 percentage points compared to 2021. With the boost in economic activity, imports also increased, particularly consumer goods and fuel, contributing negatively with 8.6 p.p. to GDP growth. Government consumption also contributed negatively to growth, by 1.6 p.p., reflecting efforts to refrain from unnecessary spending.

Figure 2: Exports and private consumption drive economic growth on the demand side
(Percentage points)
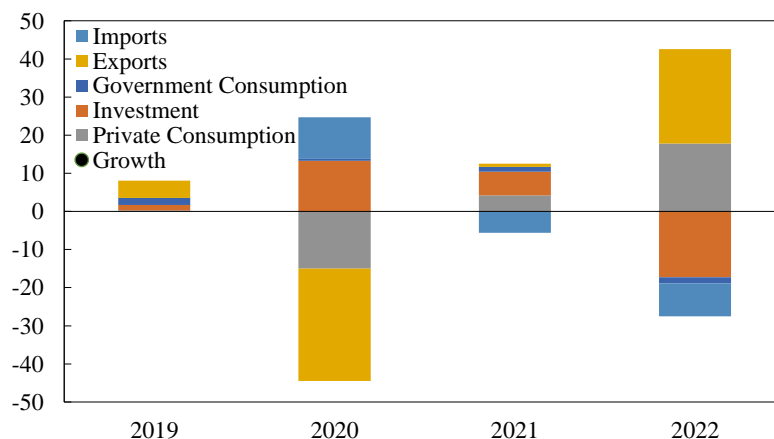
Source: Author's calculations using authorities' data and WBG estimations (February 2023).

4. **The impact of the war in Ukraine exacerbated inflation in 2022, affecting disproportionally the poorest and most vulnerable households, increasing food insecurity, and aggravating inequality.** The main direct transmission channels of the war are higher international oil and food prices. Because the country imports about 80 percent of consumption products, rising global food and energy prices put upward pressure on the cost of food and fuel in Cabo Verde, affecting the poor disproportionally. Households in the bottom decile of the income distribution spend, on average, 25 of their disposable income on food and beverages. Average headline inflation rate stood at 7.9 percent in 2022, compared to 1.9 percent in 2021 (Figure 3). This rise in prices was primarily driven by a 15.7 percent increase in food products and non-alcoholic beverages, 11.1 percent increase in transport, and 4.1 percent increase in housing and utilities prices. Average energy prices increased by 23 percent in 2022, putting upward pressure on prices in other sectors. The inflation rate when energy and food products (including beverages), and tobacco are excluded stood at 3.9 percent y/y, showing the extent to which food and energy prices currently affect the overall rate.

5. **Authorities reacted swiftly in April 2022 with a policy package to protect the most vulnerable through measures to prevent food insecurity and control electricity and fuel prices.** Measures to protect the most vulnerable households from rising food insecurity include (i) public work programs for 95 percent of the population in Crisis stage or worse (CH3 and above); (ii) price controls for corn, wheat, and cooking oil; (iii) extension of coverage of the social pension; (iv) extension of school meals throughout the summer; (v) cash transfers; and (vi) food assistance to the 5 percent of the population in Crisis stage or worse (CH3 and above). Measures to support food production include (i) animal feed subsidies and (ii) an increase in the storage capacity for grains. The cost of these measures is US$34 million or 1.6 percent of GDP. Measures to control the rising prices of electricity and fuel, include (i) the reduction of VAT on electricity from 15 to 8 percent; (ii) an increase in the social energy tariff subsidy for water and electricity from 30 to 50 percent; (iii) and a temporary suspension of the automatic indexation mechanism for fuel prices. While these measures are important to support livelihoods of rural farmers and fisherman, the targeting is broader than those measures directly tackling food insecurity, rising concerns on their efficacy and regressive nature of some interventions. The response package, with a fiscal cost estimated at 4.2 percent of GDP in 2022, helped to protect private consumption and prevented more sharp price increases.

Figure 3: Inflation hit a record high as international fuel and food prices surged
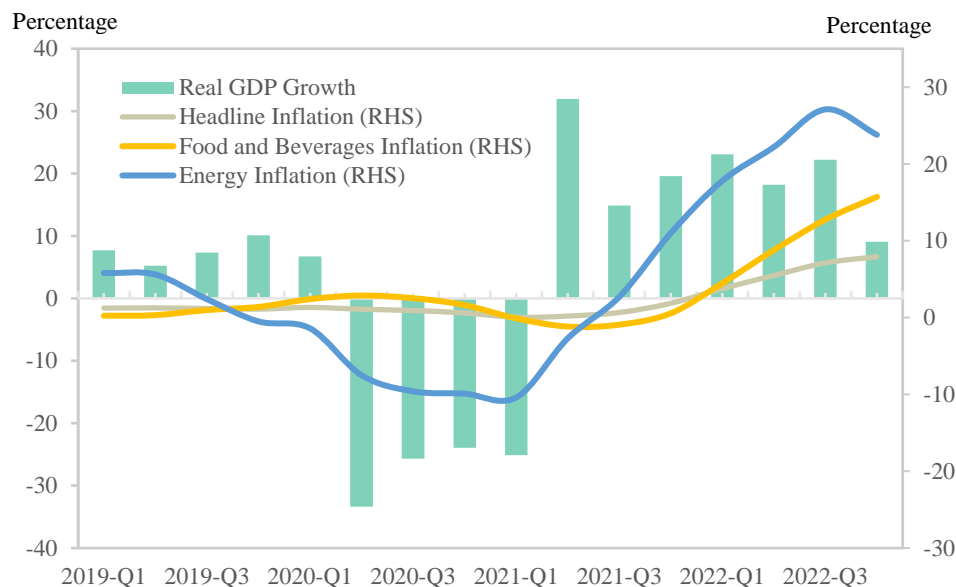
Source: Author's calculations using authorities' data and WBG estimations

6. **Despite remarkable social and economic progress, Cabo Verde's development model has been showing signs of fatigue since the 2008 global financial crisis.** Growth fell from an average annual rate of 7.5 percent in the 2000s to 2.8 percent in the last decade (excluding 2020) and remains volatile. To achieve greater and more sustained growth, Cabo Verde needs to reduce its vulnerability to external economic and climate-related shocks; increase the productivity of its private sector to benefit from the thriving tourism sector; and reduce internal transport costs to reduce market fragmentation. The accomplishment of these priorities will enable local entrepreneurs, particularly in the agricultural sector, to meet the demands of big hotels, thereby promoting knowledge spillovers that increase productivity, stimulate alternative sectors, and, ultimately, contribute to higher and more resilient economic growth. Tourism will remain a key engine of growth for Cabo Verde, given its wide-ranging impact on the economy. However, finding complementary engines of growth to support the gradual diversification of the economy is a priority for the medium term.

2. Fiscal and Debt Dynamics

The measures taken to protect the most vulnerable from increased food insecurity and to control fuel and energy prices have added a burden to the public budget, but the strong economic performance and increased tax revenues have offset this burden and led to a reduction in the fiscal deficit.

7. **The overall fiscal deficit narrowed in 2022, supported by the strong economic performance and increased fiscal revenues.** The impact of the war in Ukraine and the inflationary crisis continued to negatively affect the country's fiscal position, with total expenditures increasing by 5.4 percent compared to 2021. Despite this, fiscal pressures were

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moderated by strong revenue collection, under-execution of capital spending, and budget support (Table 1). The overall fiscal deficit is estimated at 4.1 percent of GDP in 2022, compared to 7.4 percent in 2021. Spending needs were driven by acquisition of goods and services, social transfers and debt service, The government has provided direct support and subsidies to mitigate the impact of rising global food and fuel prices on vulnerable households. However, overall expenditure remained under control as capital spending was lower than budgeted. Revenue performance remains strong due to improved income tax collection and VAT from imports as the economy recovers and key imports become more expensive. Consequently, the primary balance improved substantially compared to 2021, from -5.2 percent of GDP to -1.9 percent of GDP in 2022. Further, budget support of US$53.2 million provided by the World Bank, the African Development Bank (AfDB) and IMF helped address financing needs.

Table 1: Selected Fiscal Indicators

|	2019	2020	2021	2022[e]	2023[p]	2024[p]	2025[p]
Total Revenues	26.8	24.6	22.8	21.6	24.4	24.8	25.2
Tax revenues	19.6	18.1	17.2	18.1	17.8	19.0	19.4
Taxes on income and profit	5.9	5.5	4.7	4.2	4.6	4.7	4.8
Taxes on goods and services	9.7	8.6	8.1	9.5	8.8	9.3	9.6
Taxes on international trade	3.7	3.6	4.0	4.1	4.0	4.6	4.6
Other taxes	0.3	0.4	0.3	0.3	0.3	0.3	0.3
Non-tax revenues	4.3	3.2	3.6	2.6	4.7	4.6	4.7
Grants	2.9	3.2	2.0	0.9	1.9	1.2	1.2
Total Expenditures	28.5	33.6	30.2	25.7	29.0	28.1	27.4
Current expenditures	24.8	30.3	28.0	23.8	24.8	24.3	23.6
Compensation to employees	9.6	12.0	11.4	9.0	9.2	9.2	9.0
Goods and services	3.7	6.1	5.1	4.4	5.8	4.7	4.5
Interest payments	2.3	2.7	2.2	2.2	2.2	2.2	2.2
Subsidies	0.1	0.3	0.4	0.8	0.8	0.7	0.6
Current transfers	2.8	3.6	2.8	2.3	2.5	2.5	2.4
Social benefits	3.7	4.6	4.8	3.7	3.4	3.4	3.4
Other expenses	2.9	1.1	1.3	1.5	1.2	1.5	1.5
Net acquisition of nonfinancial assets	3.6	3.6	2.2	1.9	4.2	3.8	3.8
Primary balance	0.6	-6.4	-5.2	-1.9	-2.4	-1.0	0.0
Overall fiscal balance	-1.7	-9.0	-7.4	-4.1	-4.6	-3.3	-2.2
Net other liabilities	-3.0	-1.2	0.9	-0.1	0.7	-0.1	-0.2
On-lending	-0.7	-0.9	-0.6	-0.4	-0.7	-0.2	-0.2
Capitalization	0.1	-0.4	-0.4	-1.1	-0.8	0.0	0.0
Financing needs	-4.7	-10.2	-6.5	-4.2	-3.9	-3.4	-2.4
Total financing	4.7	9.6	6.5	4.2	3.9	3.4	2.4
Net domestic financing	1.3	3.0	1.6	2.3	1.6	2.2	0.3
Net external financing	3.4	6.5	4.9	1.9	2.3	1.2	2.1
Net errors and omissions	0.0	-0.6	0.0	0.0	0.0	0.0	0.0
Public debt	108.5	140.8	143.7	120.9	110.7	104.1	98.6
External debt	79.2	101.5	101.9	83.7	79.8	76.4	73.9
Domestic debt	29.3	39.3	41.8	37.1	30.9	27.7	24.7

Source: Ministry of Finance and IMF data, World Bank staff calculations

8. **Driven by the strong rebound of the economy in 2022, fiscal revenues increased by 18.3 percent, reaching 22.1 percent of GDP.** Tax revenues reached CVE 44 billion (USD 421 million) in 2022, an increase of around 30 percent compared to 2021. Income taxes, personal and corporate, increased with the phasing out of the COVID-19 measures to protect companies, jobs, and income still in place in 2021(installment payments on taxes, suspension of coercive collection of taxes, and lay-off scheme). Increased economic activity in 2021 also had a positive impact on the annual profit tax paid by firms in 2022. Taxes on goods and services and on international trade increased by 41.9 and 27 percent, respectively, compared to 2021, reflecting the rebound in economic activity, increase in imports, and increase of import duties on some products and of the excise tax on tobacco, alcoholic beverages, and vehicles. Non-tax revenue decreased by 2.2 percent, representing 2.7 percent of GDP, mainly reflecting declines in property income. Grants accounted for 0.9 percent of GDP in 2022, 1 percentage points lower than in 2021, with the gradual decline of this modality for financing projects and budget support.

9. **Total expenditure increased by 5.4 percent in 2022, reaching 25.7 percent of GDP, mostly driven by the measures taken to protect the most vulnerable from rising food insecurity and to control fuel and energy prices.** The fiscal response package is estimated at US$84.7 million, which contributed to a 6.6 percent in current spending. Subsidies increased by about 140 percent, mostly due to the payment of financial compensation to oil companies and electricity companies as part of policy measures taken to address the escalating international prices. The increase in current expenditures also reflects an increase in spending on the acquisition of goods and services under several resumed projects, and on debt interest payments due to the end of the moratorium period on debt service granted by bilateral creditors. On the contrary, social benefits decreased by 2.8 percent due to the reduction in social inclusion income payments. Capital expenditure also decreased by 8 percent, with an execution rate of only 41.2 percent compared to the amended budget, due to the delay of several public investment projects, mainly investments to improve housing conditions, strengthen infrastructure in education, health, and roads. By functional composition, social expenditure accounted for 48.8 percent of total expenditures, public services for 36 percent, economic affairs for 12 percent and environment for 1.7 percent.

10. **The SOE sector continued to require fiscal support while it gradually recovers from the crisis caused by COVID-19.** Fiscal risks coming from the sector further increased in 2022 and challenges remain to be addressed at the policy and institutional level. These risks stem mostly from the worsening of Cabo Verde Airlines (CVA) operational performance, triggering increased Government support through direct budget support and loan guarantees in 2020, 2021, and 2022. The authorities had extended loan guarantees amounting to US$35.6 million in 2021 to support financially distressed SOEs, with CVA accounting for almost half of the loan guarantees (US$20 million). In 2022, additional loan guarantees accounted for US$46.6 million, driven mostly by ELECTRA, the electricity and water utility, (US$19.5 million)

(Figure 4). The stock of total guaranteed debt stood at US$189 million in 2022, representing 8 percent of GDP. Capitalization to SOEs accounted for US$18 million in 2022 (US$7.2 million in 2021), with CVA being the largest recipient with US$8.8 million. These fiscal vulnerabilities may undermine Cabo Verde's efforts to restore fiscal sustainability and maintain the debt (as a share of GDP) in a declining trajectory in the medium term.

11. **The Government is strongly committed to implement a new SOE reform agenda for 2022-2026 to reduce debt vulnerabilities.** This agenda includes various degrees of privatization for 11 SOEs, ranging from full privatization to partial divestments, concessions, and public private partnerships (PPPs). In July 2022, the Government successfully signed a concession contract with an international private operator (Vinci, France) for the airport public service to support civil aviation, previously under the Airports and Air Safety Company (ASA). In addition, the privatization processes of a series of SOEs including ENAPOR (port management), ELECTRA (electricity and water production and distribution), EMPROFAC (import and distribution of pharmaceuticals), and INPHARMA (production of pharmaceuticals) have resumed. Taking a realistic approach and focusing on selected SOEs to foster the most critical structural reforms can be considered in implementing this agenda.

Figure 4: Loan Guarantees to SOEs (millions of USD)
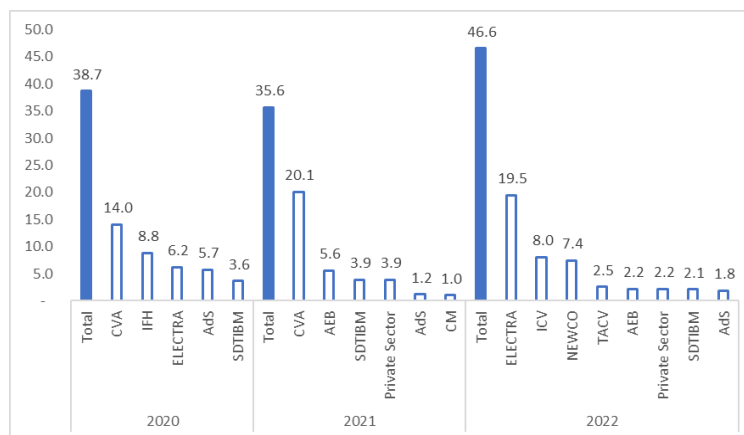
Source: Cabo Verde's Ministry of Finance.

12. **Public debt declined to 120.9 percent of GDP in 2022, driven by GDP growth.** Public debt has increased sharply in recent years, from 108.5 percent in 2019 to 143.7 percent of GDP in 2021 (Figure 5). Much of this increase has been driven by the collapse in GDP in 2020 (19.3 percent contraction), elevated fiscal deficits to respond to the COVID and war in Ukraine effects (average of 6.8 percent of GDP in 2020-22) and direct guarantees and on-lending to some state-owned enterprises, notably the Cabo Verde Airlines and ELECTRA, the electric and water utility company. External debt, which accounts for 84 percent of GDP in 2022, is mostly concessional, with long maturities and low interest rates. Domestic debt has increased

markedly after the COVID-19 shock and currently represents 37 percent of GDP. Liquidity indicators, although not dire as most multilateral debt is concessional, have worsened: debt service absorbed 49.7 percent of fiscal revenue in 2021 and is estimated at almost 50.2 percent in 2022. In light of these worsening debt trends and the high vulnerability of the country to external shocks, reduce direct support and loan guarantees to SOEs and continue to strengthen debt management and reduce domestic borrowing are key actions to reduce debt vulnerabilities.

Figure 5: Public Debt (percent of GDP)
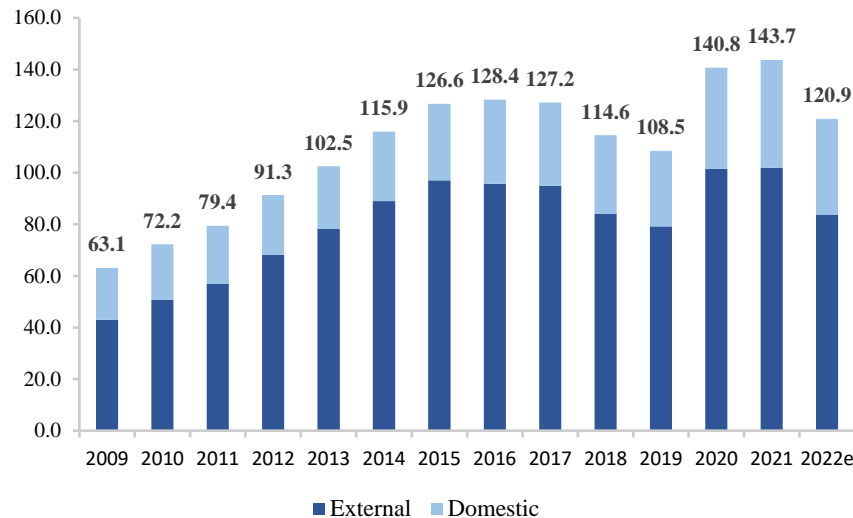
Source: Ministry of Finance, 2022.

13. **The latest joint world Bank/IMF Debt Sustainability Assessment (DSA), published in June 2022, concluded that public debt is sustainable, but the risk of overall debt distress is high while the risk of external debt distress is moderate.** The debt coverage of the DSA comprises the central Government, extra budgetary funds, the central bank, and guarantees, in line with fiscal accounts. Compared to the previous joint World Bank/IMF DSA, published in October 2020, the risk of external debt distress was upgraded from high to moderate. The main driver of this upgrade is the rebasing of the GDP, which mechanically improved debt indicators[1]. The present value (PV) of public and publicly guaranteed (PPG) external debt-to-GDP ratio breaches its threshold only in 2022 under the baseline, and protractedly under stress test scenarios. The breach under the baseline is of shorter duration compared to the last DSA due to the GDP rebasing. The PV of total public debt-to-GDP ratio is projected to breach the threshold during 2022–28 under the baseline scenario and stress test; at the same time, liquidity

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[1] The National Institute of Statistics (INE) rebased the national accounts taking the year 2015 as base. The main changes included the revised nomenclature of activities, improved data coverage, and new data sources. The exercise led to a GDP revaluation of 173,911 million CVE in 2015, representing an upward revision of 9.6 percent in comparison to the 2007 base year. The revision has a direct effect in the public debt ratio, which was revised from 126 percent (GDP base 2007) to 115 percent (GDP base 2015).

indicators (debt service to revenue and to export ratios) remain firmly below their respective thresholds, reflecting the high concessional nature of external debt. The external and overall debt outlook is assessed to be sustainable and is supported by continued recovery of economic activity over the medium term and a return to the pre-pandemic fiscal consolidation path.

14. **Authorities are committed to returning to fiscal consolidation over the medium term and to placing the debt-to-GDP ratio decisively on a downward trend.** The 2023 State Budget assumes a strategy of gradual deficit reduction to sustainable levels until 2025 through 5 areas of intervention: (i) increase in taxes collected by improving the efficiency of the tax system and broaden the tax base by 16 percent; (ii) rationalization and cost containment by reducing personnel expenses to levels below 11 percent of GDP, investing in digital to reduce the demand for resources, and rationalizing the vehicle fleet; (iii) new modalities for financing investments in partnership with the private sector and with Treasury guarantees; (iv) restructuring the SOE sector through PPP, privatizations, and concessions; and (v) new debt management model with conversion of part of the foreign debt into natural and climate capital.

3. External Sector

The strong rebound of tourism arrivals help narrowed the CAD, despite the increase in merchandise imports driven by economic dynamics and inflation. FDI and concessional loans continued to be the main financing sources for CAD.

15. **The Current Account Deficit has narrowed driven by strong recovery in net service exports, outweighing the increase in net goods imports**. Exports of tourism, which account for around 65 percent of services exports, led the increase in total exports. Tourism receipts increased more than 200 percent in 2022, representing 16.4 percent of GDP (6.3 percent in 2021), driven by the strong rebound of tourism arrivals, which surpassed the pre-pandemic levels (Box 1). Exports of goods also performed well due to the significant increase in re-exports of fuel and foodstuffs at ports and airports. Robust increase in remittances, with the economic rebound in advanced economies, also supported the recovery of the CAD. Remittances represented 12 percent of GDP and remained an important source of foreign currency. Mitigating the positive evolution of CAD, imports of goods and services increased around 32 percent, reflecting the growing dynamics of economic activities and the impact of inflation.

Box 1: Recovery of the Tourism Sector

Cabo Verde received more than 835,000 tourists in 2022, slightly exceeding pre-pandemic levels. This corresponds to nearly 400 percent increase compared to 2021 levels and exceeds the number of tourists received in 2019 by 16,637 (+2 percent). The fourth quarter of 2022, which is the peak season in the country, recorded the highest number of tourists, almost 285,000. More than 80 percent of tourist demand remains concentrated in the two well-established sun and beach destinations of the islands of Sal and Boa Vista. The source market is also concentrated, with the UK being the largest source of tourists, accounting for about 30 percent of the total, while Germany, the Netherlands and Portugal together also account for 30 percent of total tourists. The tourism sector accounts for about 25 percent of GDP and 40 percent of overall economic activity and is the main source of employment. Taxes paid by tourists reached US$7 million in 2022 (0.3 percent of GDP), 55 percent above the government estimate for the year and five times more than in 2021. The tourist 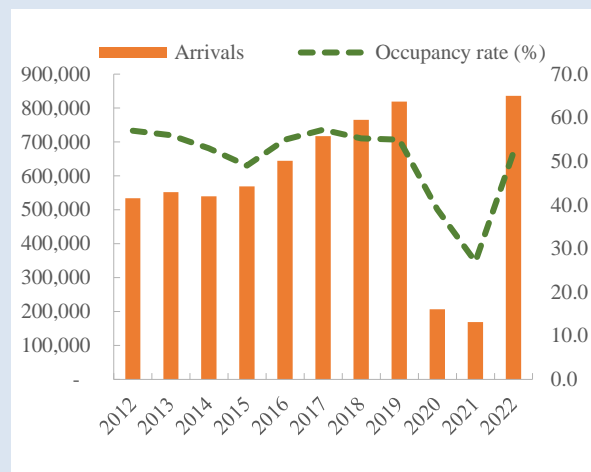contribution was introduced by the government in May 2013, with all hotels and similar units required to charge two euros for each overnight stay of up to ten days to each tourist over the age of 16.

Figure B3.1: Tourism Receipts
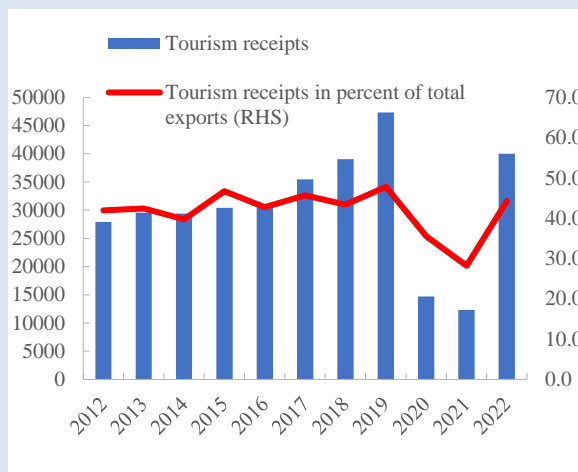
Source: Cabo Verde Central Bank, 2022.

Figure B3.2: Tourism Arrivals and Occupancy Rate

Source: Cabo Verde National Institute of Statistics, 2022.

Authorities pursued needed reforms to relaunch the tourism sector after the COVID-19 pandemic. The authorities enacted immediate response measures to support MSMEs across the economy and announced a tourism recovery plan to support the revitalization of the economy in the short term. The plan was based on four pillars. First, health safety, which aimed at restoring tourist confidence and stimulating demand by implementing training and sanitary certification programs for tourism operators. Second, tourism diversification, which intended to position other tourist attractions nationwide while still promoting the well-established sun and beach destinations of Sal and Boa Vista islands. Third, culture, which focused on the rehabilitation of cultural heritage. Finally, the fourth pillar is strengthening support mechanisms to businesses and workers in tourism to build crisis resilience. The national economic development strategy for 2022–2026 (Plano Estratégico de Desenvolvimento Sustentavel - PEDS), under preparation, envisages to prioritize measures aimed at accelerating sustainable growth in tourism, diversifying across more niches and islands, and establishing a better link with the country's natural and cultural assets.

16. **The CAD was financed primarily by FDI and concessional loans in 2022.** The financial account contracted by around 67 percent, reflecting the continued resumption of planned FDI projects. FDI increased about 35 percent in 2022, accounting for 4.7 percent of GDP (4.4 percent in 2021). Nearly 84 percent of the FDI was directed towards the tourism and tourism

real estate sector. Gross international reserves increased by EUR 15 million, reaching approximately EUR 626 million and covering about 6 months of imports, well above the level of 3.6 months recommended by the IMF 2019 External Stability Assessment (ESA). As such, the reserves have helped support the accommodative monetary policy in place since the COVID-19 crisis.
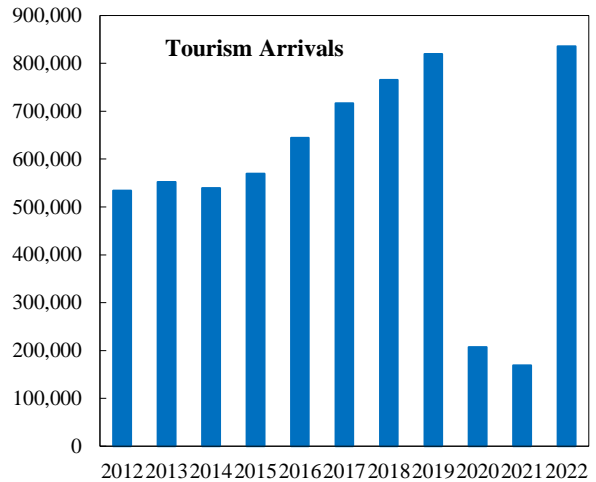
4. Monetary Policy

17. **Monetary policy continued to balance the need to support economic recovery with the importance of protecting the peg.** The Central Bank maintained the accommodative monetary and financial measures in place since 2020 that helped support credit and provided liquidity to households and businesses. The reduction of the Central Bank's reference interest rates to very low levels, temporary relief from the capital and operating rules that banks are required to follow, and an unprecedented special line of large loans at exceptionally low costs to support banks, are some of the measures taken to help the country react to the effects of the COVID-19 crisis on the banking and financial sector. However, the Central Bank closely monitored reserves and inflation developments and stood ready to adjust policy settings if needed.

18. **The financial system remained resilient in 2022, supported by the monetary policy measures adopted by the Central Bank to maintain market liquidity.** The financial soundness indicators of the banking sector evolved positively in 2022. The regulatory capital-to-risk weighted assets increased from 21.4 percent in 2021 to 22.3 percent at end-December 2022, well above the regulatory minimum of 12 percent. Return on assets stood at 1.7 percent (1.4 percent in 2021), while return on equity at 17.4 percent (15 percent in 2021). The banking sector remained liquid and credit to the economy increased by 5.3 percent (y-o-y) at end-December 2022, supported by credit lines and moratoria on loan payments provided in response to the COVID-19 crisis that were extended until September 2022. The liquidity in the financial sector makes it better prepared to resist the effects of a possible increase in non-performing loans with the end of the moratoria.

19. **The financial sector continues to display structural weaknesses and risk aversion due to high levels of non-performing loans (NPLs).** High liquidity levels reflect risk aversion in an environment of persistently high NPLs (although it declined slightly from 8.1 percent in 2021 to 7.8 percent in 2022), as well as limited investment opportunities meeting acceptable credit standards. The sector is struggling with low asset quality, and despite a relatively strong capital adequacy ratio, banks in Cabo Verde are potentially vulnerable to high NPL ratios. High debt levels of public enterprises, non-financial corporations, and households compound the problem. The sector remains highly concentrated with two (of the seven active) commercial banks holding 64 percent and 68 percent of credit and deposit market shares.

Figure 6: Recent Economic Developments

The economy recorded its highest ever growth

**Real GDP growth
(Percent)**
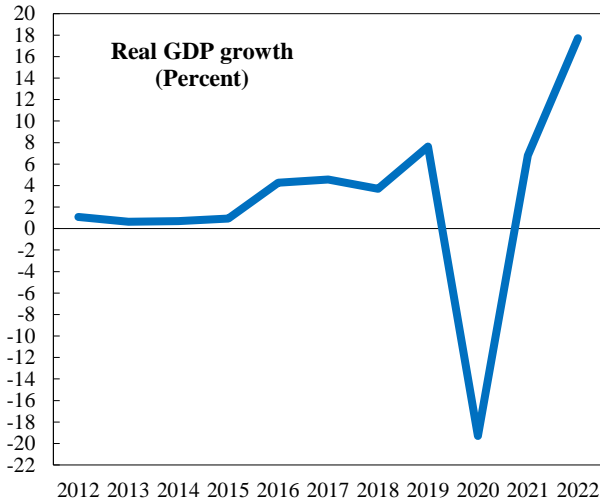
*... supported by the strong recovery of
the tourism sector*

Tourism Arrivals

*Private consumption and net exports led
economic growth.*

**Growth Contributions
(Percentage points)**

■ Net Exports (NX)
■ Change in Inventories
■ Government Consumption
■ Total GFCF (I)
■ Private Consumption
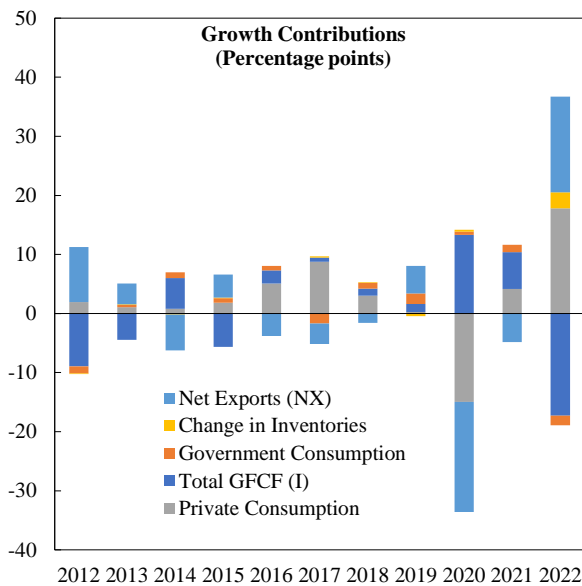
*Headline inflation increased further fueled by
high international oil prices and disrupted
global supply chains.*

— Inflation, end of period consumer prices
— Inflation, average consumer prices

Source: Author's calculations using authorities' data

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Figure 7: External Sector Developments

Current account deficit narrowed in 2022 due to strong increase in net service exports

Current Account (Percent of GDP)

Legend: Secondary income, Primary income, Services, Goods, Current account
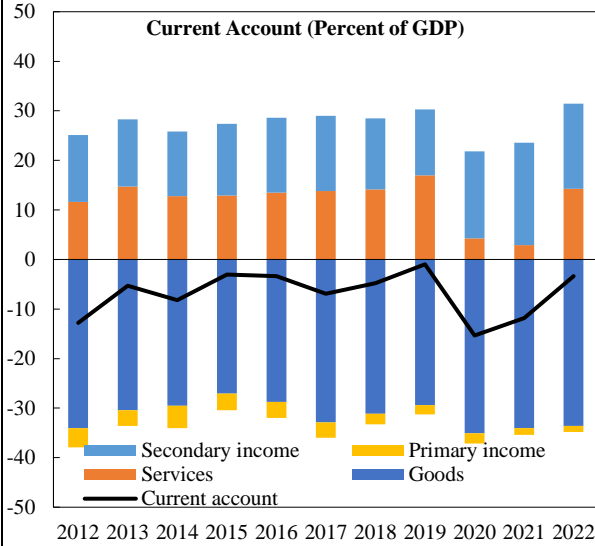
The deficit was financed mainly by foreign direct investment and concessional loans.

Financial Account (Percent of GDP)

Legend: Other investments, Portfolio investment, FDI, Financial account
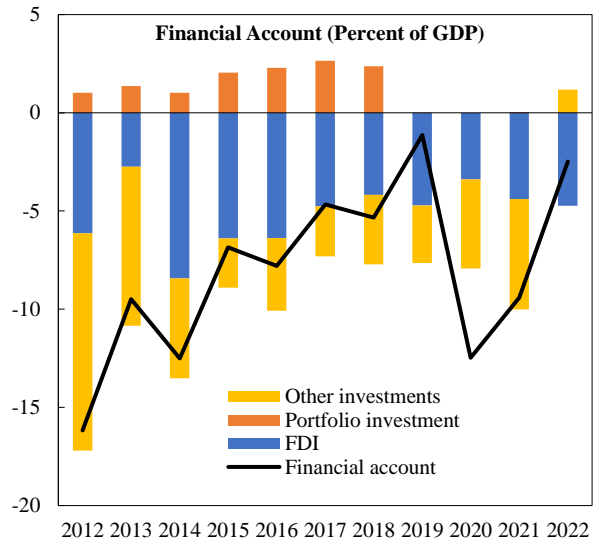
Remittances continue to be an important source of foreign currency…

Remittances (Percent of GDP)
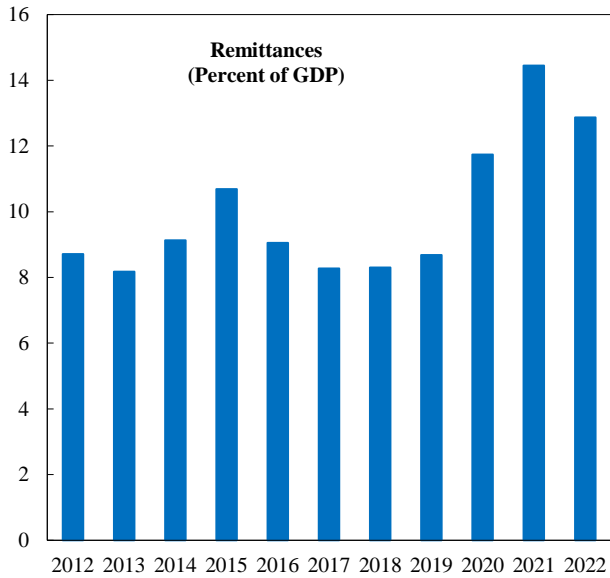
… supporting the country's strong reserve position.

Legend: Reserves in Millions of Euro, Reserves in months of current year imports (RHS)

Source: Author's calculations using authorities' data.

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Figure 8: Fiscal Sector Developments

Fiscal performance improved in 2022…

Fiscal Sector performance (Percent of GDP)

- Revenues and grants
- Expenditures
- Overall balance
- Primary balance
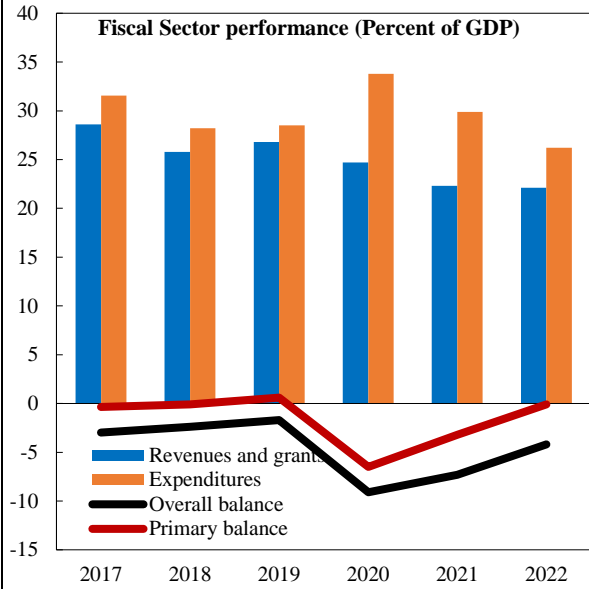
… owing mainly to an increase in tax revenues…

Revenue Composition (Percent of GDP)

- Tax revenue
- Non-tax revenue
- Grants
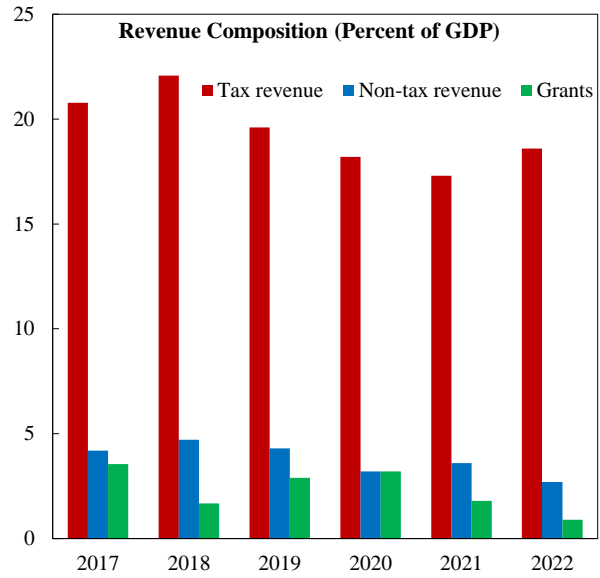
…. current expenditures decelerated and capital expenditures decreased

Expenditure Performance (Percent of GDP)

- Current expenditure
- Capital expenditure
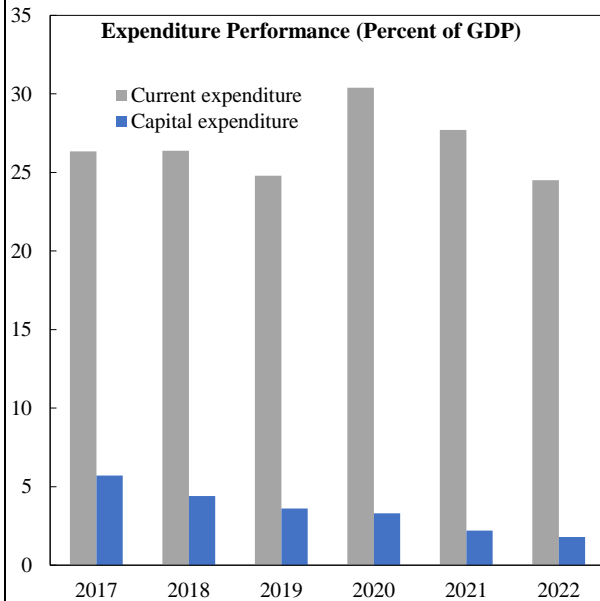
Wage bill and current transfers continue to be the largest components.

Current Expenditure (Percent of GDP)

- Other current transfers
- Social assistance
- Goods and services
- Current transfers
- Interest payments
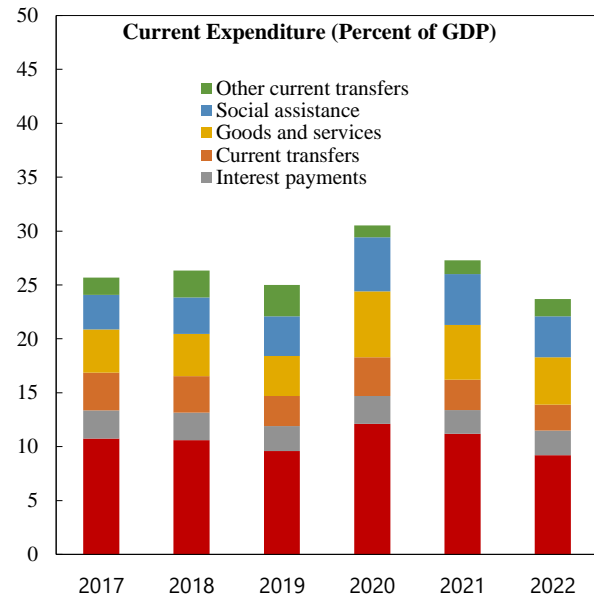
Source: Author's calculations using authorities' data.

Figure 9: Monetary Sector Developments

The financial system remained resilient.

Monetary Aggregates (millions of CVE)

- Net foreign assets
- Net domestic assets (credit)
- Money Supply

The banking sector remained liquid and credit to the economy increased.

- Total deposits
- Credit to the private sector
- Credit to the economy

Y-o-Y % change
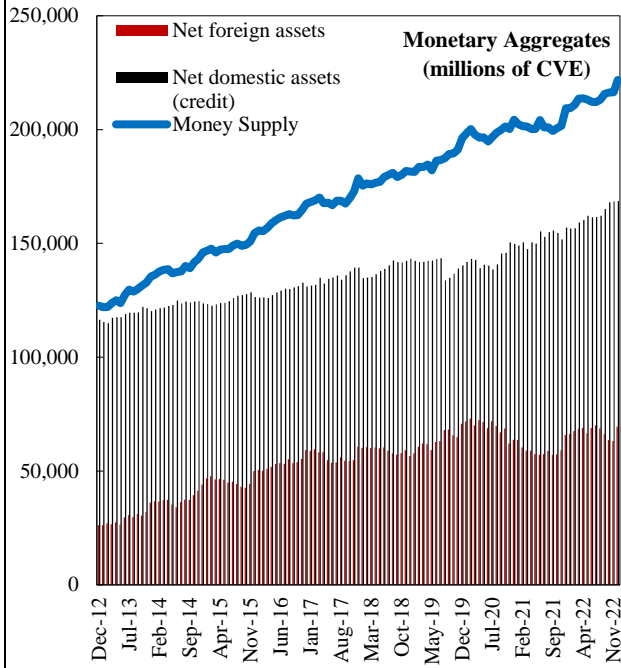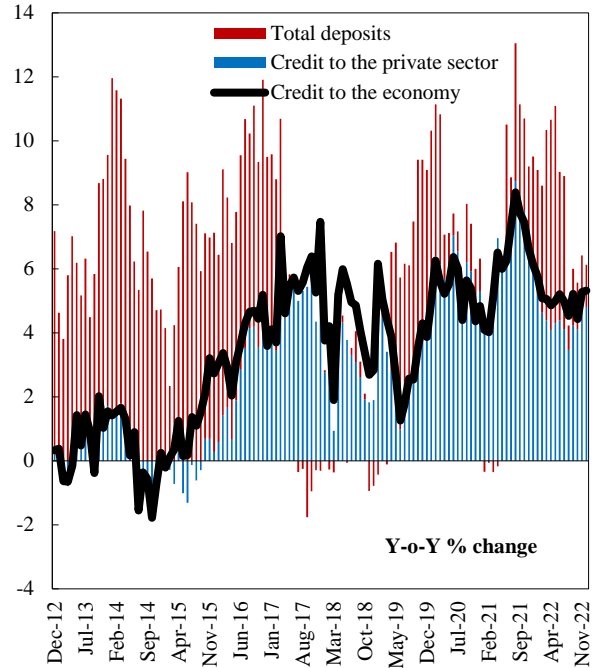
… supported by the policy measures adopted by the Central Bank.

- Policy Rate
- Bank Lending Rate
- Bank Deposit Rate
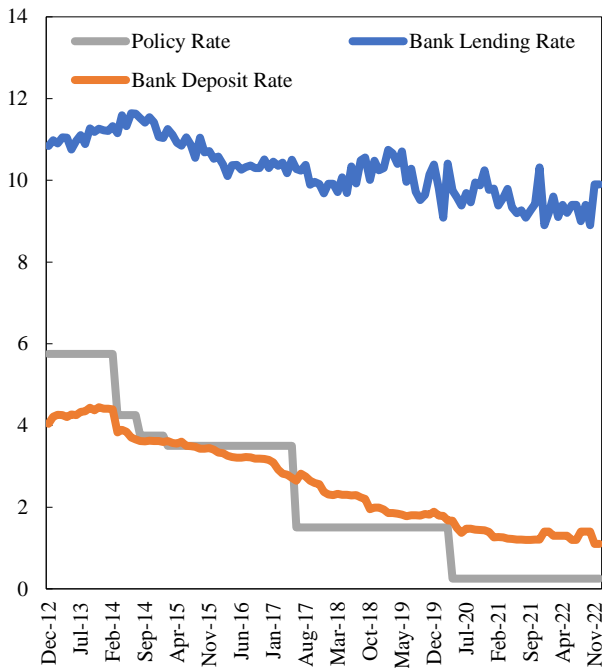
NPLs have been gradually decreasing but remain high.

Asset Quality (Percent)

- NPLs/Total Loans
- Provisions to NPLs (RHS)

Source: Author's calculations using authorities' data.

26
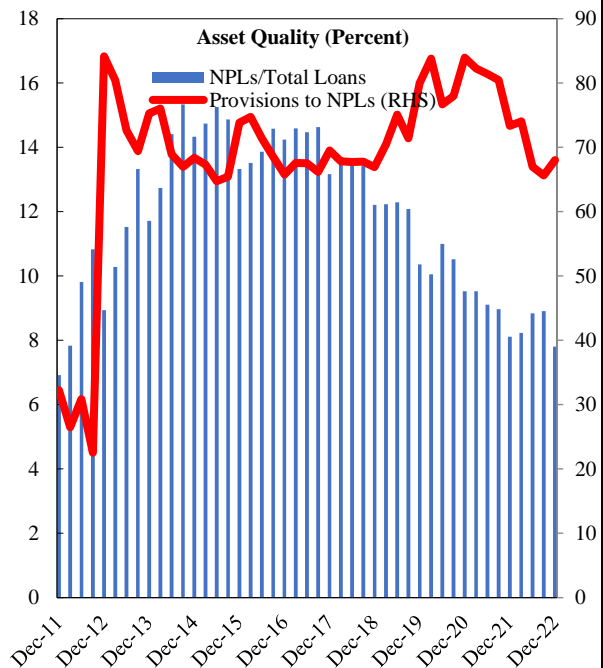
5. Poverty

Poverty reduction in 2022 was driven by economic growth led by job creation, especially in the tourism sector. At the same time, poverty reduction was dampened by the increase in inflation in 2022, especially due to higher food prices.

Figure 10: Poverty reduction in 2022 was driven by job creation, especially in tourism
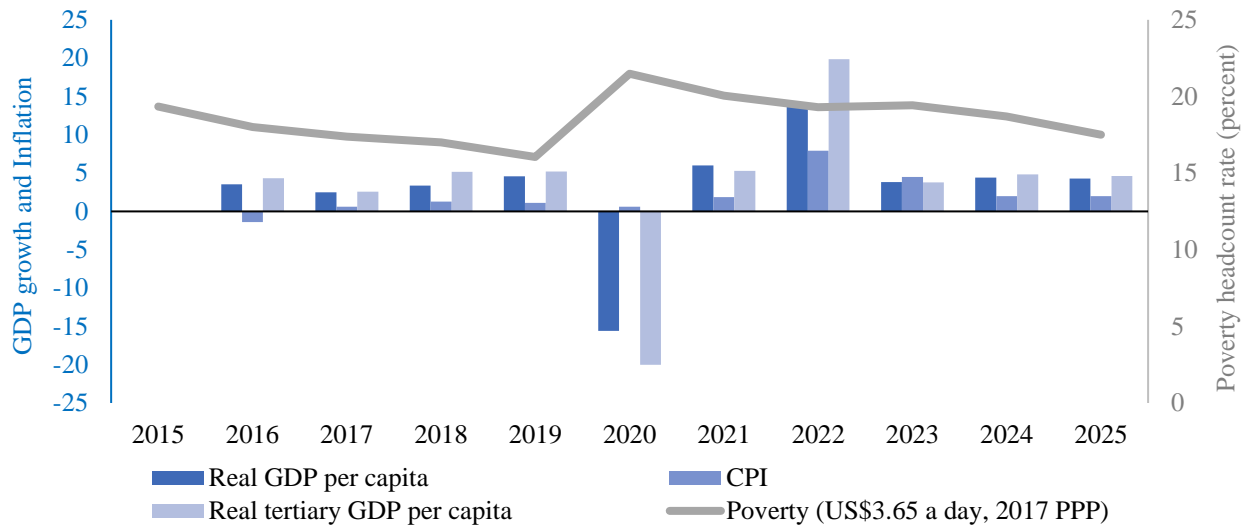
Source: Author's calculation using IDRF2015(Inquérito às Despesas e Receitas Familiares, 2015). Poverty estimated in 2015. Poverty projections from 2016 to 2025.

Impact of Sectoral GDP Growth on Household Incomes

20. **Until the Covid-19 pandemic in 2020, poverty reduction efforts in Cabo Verde placed the country among the champions in Sub-Saharan Africa in terms of improvements in living conditions.** Projections show that the poverty rate declined almost 3.2 percentage points from 2015 to 2019, falling from 19.3 to 16.1 percent (using the $3.65 per-day-PPP in 2017). In addition, between 2001 and 2015, inequality (measured by the Gini Index) fell from 52.5 to 42.0. At the same time, Cabo Verde's development model, based on tourism and foreign direct investment (FDI), has shown signs of fatigue since the global financial crisis from 2008. The shock resulting from COVID-19 produced the largest economic contraction on record (19.3 percent) in 2020 and exposed the country's economic vulnerabilities, disrupting the services and hospitality sectors, and prompting a poverty increase of 5.4 percentage points (to reach 21.5 percent in 2020).

21. **Poverty reduction in 2022 was driven by economic growth, despite the spike in inflation, which led to job creation, especially in tourism due to the normalization of tourist flows.** After the COVID-19 related decline, economic growth rebounded in 2021, when the country's GDP increased 6.8 percent, and continued growing in 2022, when growth reached 17.7 percent, surpassing the pre-pandemic GDP level from 2019. The poverty rate is expected to have fallen from 20.1 percent in 2021 to 19.3 percent in 2022 (using US$3.65 per-day-2017 PPP), reaching the poverty levels of 2015. The services sector grew 20.9 percent in real terms in 2022, followed by the manufacture sector at 5.3 percent, while agriculture contracted in more than 10 percent. Sectoral growth differences are important to consider, as most of the poor population work in the services sector. In Cabo Verde, 62 percent of working adults in poor households work in services, and poor households derive 54 percent of their income from the services sector. In addition, better-off households are more likely to work in services (suggesting that a significant share of households' incomes in Cabo Verde are associated with activities in the tourism sector), and a third of the poorer households are in the agriculture sector but derive less than a quarter of their income from agricultural activities (Figure 11).

Figure 11: Share of Employment and Income for each sector by welfare decile
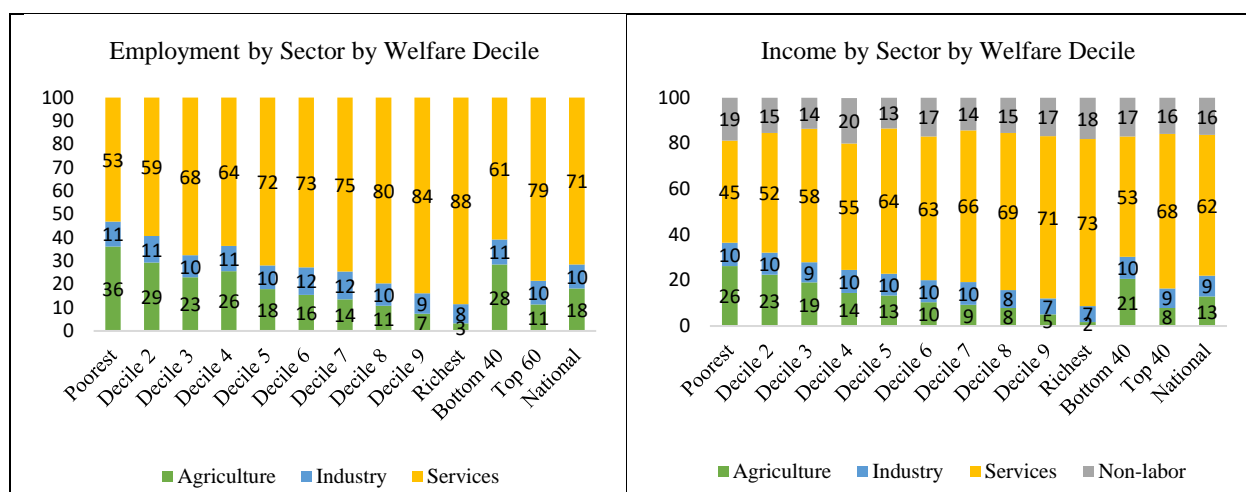
Source: Author's calculation using IDRF2015

Impact of High Inflation on Household Real Consumption

22. **Poverty reduction in Cabo Verde was dampened by the increase in inflation in 2022, especially due to higher food prices.** One notable feature of the recent macroeconomic developments in Cabo Verde has been high inflation, driven mainly by food price inflation. Headline inflation reached 7.9 percent (y/y) in December 2022 after inflationary pressures emerged in 2021, fueled by high international oil and food prices and global supply chain disruptions due to the war in Ukraine.

23. High food price inflation disproportionately affects households that spend more on food, specifically poorer households. In Cabo Verde, poorer households spend a slightly higher share of their income on food. In 2022, food inflation peaked at 15.7 percent while energy and transportation inflation increased to 10.1 and 11.1 percent, respectively. It is estimated that without the increase in food prices, poverty ($3.65 per day PPP 2017) would have been almost 3 percentage points lower in 2022, and close to the pre-pandemic level (16.1 percent) from 2019. Moreover, inflation as measured by the CPI in 2022 was higher than the GDP deflator[2] (7.9 percent compared to 5.1 percent), meaning that household purchasing power lagged what would be suggested by the growth in real GDP.[3] Figure 6 shows the distribution of household-specific inflation rates compared to the official CPI and the GDP deflator for each year.

Figure 12: Breakdown of Consumption and Median Effective Inflation Rates by Decile
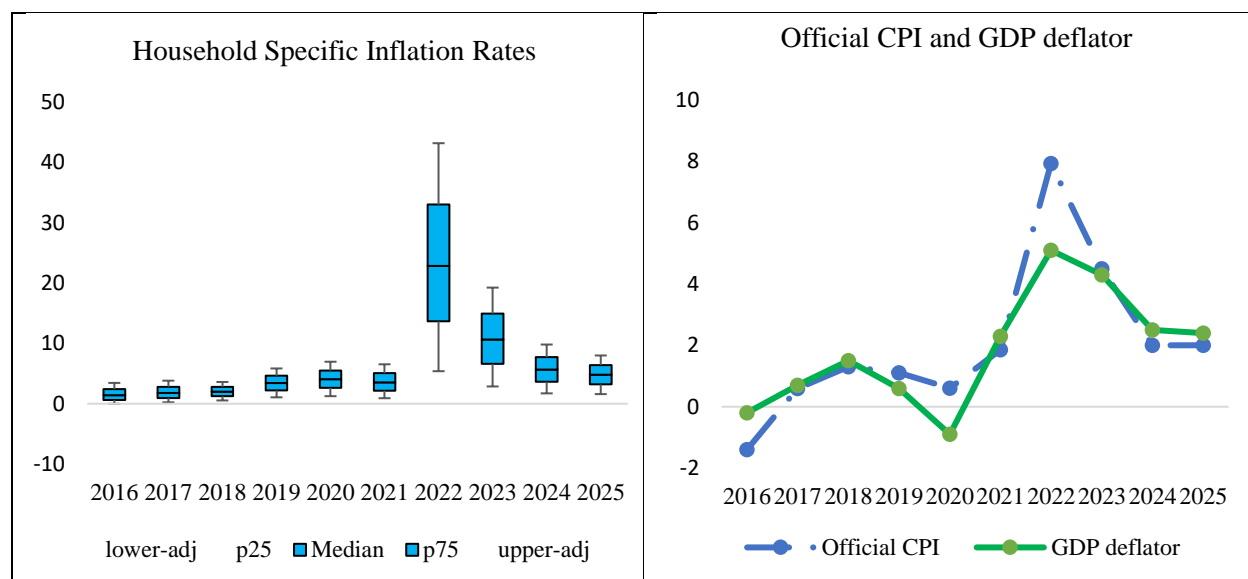
Source: IDRF2015. World Bank, Macroeconomics and Investment (MTI) Global Practice (2023). Projections start in 2023.

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[2] The GDP deflator is the ratio between the nominal GDP and the real GDP in constant factor prices. It is a form of price index in which the weights are based on the shares of products in the GDP. In contrast, in the consumer price index (CPI), the weights are based on shares in household consumption. The price of gold and raw cotton would be influential in the GDP deflator, but not at all in the CPI.

[3] The construction of household-specific weighting has a moderate overall impact on poverty reduction, the larger impact is adjusting household real consumption using inflation rather than assuming it grows proportional to real GDP.

Figure 13: Breakdown of Consumption and Median Effective Inflation Rates by Decile
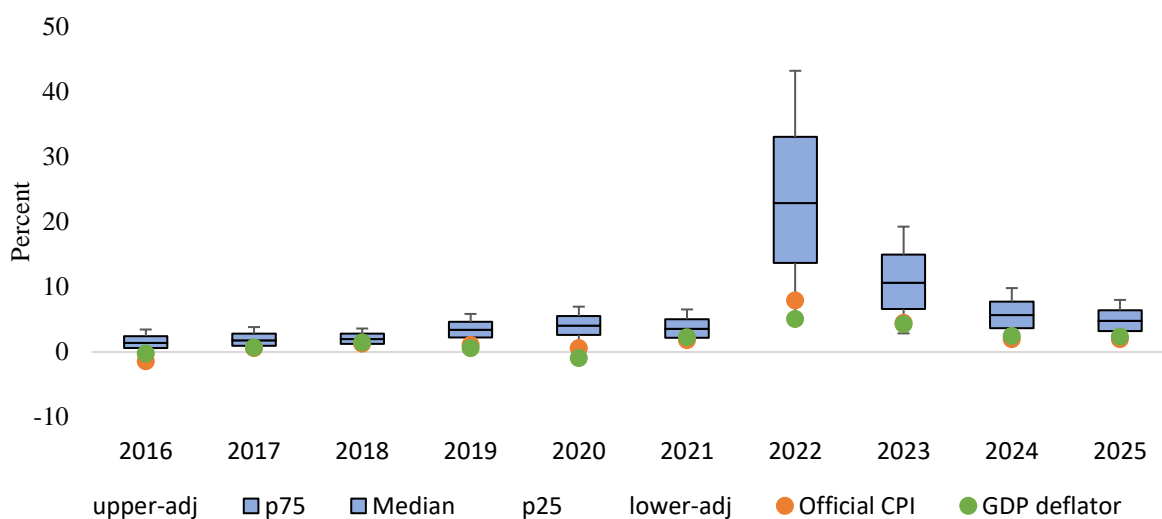
Source: World Bank, Macroeconomics and Investment (MTI) Global Practice (2023). Projections start in 2023.
Note: The figure shows a box-whisker plot displaying the minimum, first quartile, median, third quartile and maximum of the values of inflation faced by the different households during the 2019-2025 period. In addition, the two dots show the official CPI value (orange) as well as the GDP deflator (green) for each year.

The combined effect of growth and inflation

24. **While poverty is expected to decline over the 2024-2025 period, growth is not expected to be particularly pro-poor.** Poverty, based on the lower-middle income poverty line of US$3.65 per-day PPP2017, is projected to remain above 19 percent in 2023 (increasing 0.1 percentage points from 2022 to 19.4 percent) due to higher prices, especially of food items (the inflation of food is projected at 6 percent, while total inflation is expected to be 4.5 percent). Afterwards, the poverty rate is expected to fall to 18.7 percent in 2024 and then reach 17.5 percent by 2025, supported by economic growth and the stabilization of inflation. The combined impact of household-level estimates of nominal per capita growth (based on sectoral distribution of income) and inflation (based on share of food in consumption) allows projections of the impact on real per capita consumption across the distribution. Households in the poorest deciles have marginally positive growth rates during the full 2023-2025 period, but growth is expected to be almost flat across the distribution. Moreover, households just below the poverty line see some of the lowest growth rates in 2024 and 2025.

Figure 14: The inflation experienced by the households differs significantly from the official CPI and the GDP
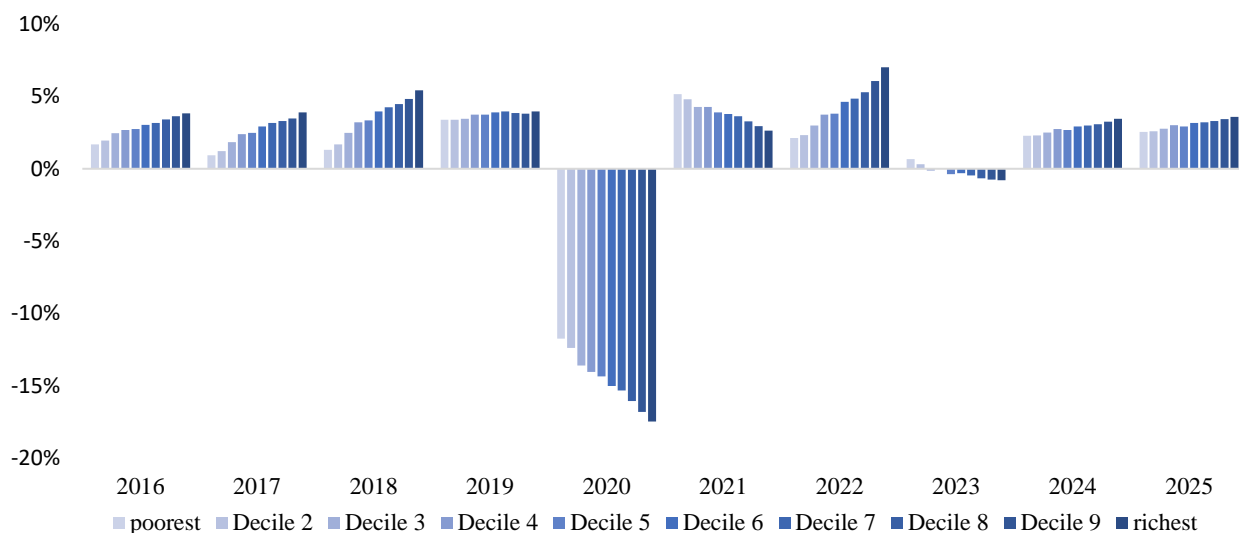
Source: Projections prepared by the Poverty and Equity Global Practice based on the IDRF2015.

B. Outlook and Risks

25. **Real GDP growth is projected to reach 4.4 percent in 2023 and remain close to potential over the medium term.** Growth will be supported by private consumption, investment in tourism and the blue economy, and is expected to average 4.5 percent between 2023 and 2025. As the Government restructures the operation of several important SOEs through public-private partnerships (PPPs), direct sale and concession arrangements, and implements structural reforms under the strategic plan for sustainable development (PEDS 22-26), further private investment will be mobilized to support growth. The Strategy aims to achieve greater and more sustained growth through increasing economic resilience, boosting productivity, and reducing market fragmentation. The successful implementation of the Strategy will enable local entrepreneurs to benefit from positive spillovers from the thriving tourism sector, thereby creating a more diversified and sustainable economy.

26. **Inflation is expected to moderate in 2023, as global growth moderates, commodity prices stabilize, and supply bottlenecks ease.** Headline inflation is projected at 5.2 percent. The increase in the central bank's reference interest rates planned for 2023, to reduce the interest rate differential with the Eurozone and protect the peg, will help to control inflation. Over the medium-term, the strong nominal anchor provided by the peg with the Euro and the return to fiscal consolidation will keep inflation contained, converging to 2 percent by end-2024.

27. **The Government aims at maintaining the strong level of total revenue over the medium term, with a progressive increase in tax revenue in lieu of grants.** Fiscal revenue is expected to increase about 20 percent relative to 2022, representing 24.4 percent of GDP. This projection stems from the increase in tax collection, resulting from (i) economic dynamism (GDP growth of 4.4 percent); (ii) improving the efficiency of tax administration to combat fraud and tax evasion; (iii) rationalization of tax incentives, with emphasis on the phasing out of the total import duty exemption; (iv) strengthening of tobacco and alcohol taxation, (v) increasing the tourism tax on daily stay at hotel to CVE 276 CVE (+ CVE 56) (vi) broadening of the tax base, namely in e-commerce; and (vii) provision for the meeting of accounts in the scope of tax debts. An increase in the collection of revenue from autonomous institutes, funds and services is also foreseen, as well as property revenue arising from the completion of concessions and privatization processes. The adoption of the ECOWAS Common External Tariff, which was postponed to 2023 due to the lingering impact of COVID-19 crisis, is also projected to increase trade tax revenue over the medium term. These measures will lead to an increase in tax revenue from 18.1 percent of GDP in 2022 to 19.4 percent by 2025.

28. **Total expenditure will remain high in 2023, at 29 percent of GDP, and gradually decline with the phase out of the exceptional measures to contain the impact of the war in Ukraine and improved expenditure efficiency.** Current expenditure is expected to increase from 23.8 percent of GDP in 2022 to 24.8 percent in 2023. This growth results from (i) updating the social pension and raising the minimum wage to CVE 14,000, with an expected impact of 0.06 percent of GDP (ii) the disbursement of loans for project financing, rescheduled for 2023; (iii) the increase in external grants and (iv) the increase in some mandatory expenditure arising mainly from: (a) expenditure on debt charges; (b) the remaining three months of the mitigation measures adopted in 2022, in response to price increases in food and electricity; (c) the expansion of the number of beneficiaries of non-contributory pensions and wage updates for civil servants and pensioners. Over the medium term, lower spending on goods and services will gradually reduce current expenditures. Capital expenditure is projected at 4.2 percent of GDP in 2023 and to approach 3.8 percent by 2025. Total expenditures will account for approximately 27.4 percent of GDP in 2025.

29. **The overall fiscal deficit will remain relatively stable in 2023 at 4.6 percent of GDP, declining to 2.2 percent of GDP in 2025 due to increased fiscal revenues.** The government plans to contract CVE 11 billion to cover the budget's financing needs (fiscal deficit and debt amortization). Of this amount, around 40 percent is projected to be financed with external debt and 60 percent with treasury bonds issued in the domestic market. External financing will come from multilateral and bilateral creditors on concessional terms. Domestic borrowing will be through the issuance of short, medium, and long-term treasury bonds. A reduction in the debt-to-GDP ratio to 110.7 percent is expected for 2023, with the start of a revenue driven fiscal consolidation that will lower the fiscal deficit and continued increase in GDP. Fiscal risks will

remain high as the fiscal deficit is exposed to contingent liabilities in sectors particularly vulnerable to external shocks.

30. **While export of services will continue to expand in 2023, the CAD is projected to increase to 4.6 percent of GDP, driven by higher imports, particularly for private investment.** The CAD is expected to decline to 2.9 percent of GDP in 2025 underpinned by the increase in tourism receipts and the stabilization of consumption import prices. The stable growth in remittances, reflecting improved conditions in the European labor market, will also support the decline in the CAD. Higher public debt amortization outflows are expected to increase external financing needs, which are projected to be met primarily by official borrowing and FDI. Robust export growth and rising remittances, coupled with higher FDI inflows, are expected to keep international reserves strong at around 6 months of prospective imports over the medium term.

31. **The outlook is subject to substantial downside risks stemming from uncertainties due to the war in Ukraine, and climatic shocks.** An increase in the size or duration of the terms of trade shock emanating from the war in Ukraine could lead to continued inflationary pressures and the continuation of policy support to ameliorate its impact, which in turn could deteriorate fiscal and debt sustainability. Political pressures against continued fiscal consolidation could also derail planned structural reforms to manage fiscal risks. A weak external demand in Cabo Verde's main tourism markets could weaken economic growth in the country. In addition, the country remains significantly exposed to natural disasters, including those related to climate change. With the highest level of climate disaster risk in Sub-Saharan Africa and one of the highest globally, Cabo Verde is already experiencing the effects of geological and climate-related events that are impacting livelihoods and key growth sectors. These events are expected to worsen in the foreseeable future, posing significant risks to the sustainability of the development model.

32. **A set of policy options would allow Cabo Verde to support fiscal revenue mobilization, reduce debt vulnerabilities and empower complementary engines of growth.** This report proposes policy options that can be implemented in the short and medium term to achieve these objectives.

Policy Options	Responsibility	Timeline
Implement additional revenue mobilization reforms to accelerate fiscal consolidation		
Include in the budget report estimates of the impact of new tax expenditures on revenues and the compensation strategy for the foregone revenues in order to stabilize the mobilization of domestic resources.	MoF	Short term
Revoke or streamline the main cost ineffective tax incentives to rationalize tax expenditures.	MoF	Medium term
Adopt the ECOWAS Common external Tariff Schedule to increase tax revenue from international trade and to align with ECOWAS commitments.	MoF	Medium term

Reduce debt vulnerabilities		
Follow prudent borrowing policies to contain debt accumulation, including refraining from non-concessional borrowing.	MoF	Short term
Adopt a realistic approach to the SOE reform agenda and focus on selected SOEs to promote the most critical structural reforms to reduce direct support and loan guarantees to SOEs.	MoF	Medium term
Enhance debt transparency and strengthen the assessment of fiscal risk, especially for SOEs, to limit contingent liabilities.	MoF	Short term
Empower complementary engines of growth		
Improve the targeting of public support programs to support the most productive firms to reduce misallocation of input factors.	MoF	Short term
Support young firms in strengthening their capabilities in innovation and technology adoption, marketing, management, and workforce skills through targeted programs.	MoF	Short term
Sponsor suppliers' programs and similar mechanisms to improve linkages between local producers, intermediaries, and large buyers.	MoF	Medium term

Part II – Climate-related shocks and fiscal sustainability: potential impacts and policy options

33. **Cabo Verde is repeatedly affected by geological and climate-related shocks and climate change will bring unprecedented threats to the archipelago**. Due to its location and geography, the country is exposed to a wide range of natural hazards including volcanic eruptions, droughts, tropical storms, landslides, and floods. The archipelago is also characterized by a set of structural factors such as rapid rural-urban and inter-island migration, continuous land degradation, persistent poverty, and high indebtedness, which together magnify its vulnerability to these natural events. Looking forward, as climate change unveils, temperatures are expected to gradually increase and rainfall patterns will display more erratic patterns (i.e., lower aggregated levels of precipitation but more frequent extreme rainfall events).[4] These changes could intensify droughts and trigger more severe floods. At a longer timescale, sea-level rise and ocean warming could erode the archipelago's natural capital and further impact the tourism and blue economy sectors, which are the main growth drivers.

34. **Climate and disaster risks could undermine the country's future growth prospects and threaten debt sustainability.** Annual Average Losses from multiple hazards have been estimated at almost 1 percent of GDP and rare catastrophic floods could generate severe detrimental growth effects. From a fiscal standpoint, the Government has traditionally displayed restricted budgetary leeway to mobilize resources in the aftermath of a disaster, which has left most of the post-disaster needs unmet (See CEM 2023 for a detailed analysis). This limited fiscal resilience[5] entails a restricted use of counter-cyclical fiscal policies to respond to disasters and hinders the Government's capacity to foster a quick and robust recovery, which in return can potentially amplify the negative impacts of the initial shock.

35. **To better understand how current fiscal consolidation efforts could be impacted by adverse natural events, this chapter "stress test" the debt sustainability analysis with different flood scenarios.** Our approach first uses the flood component of the Disaster Risk Profile developed for Cabo Verde, which determines the potential damages to physical assets that floods of different intensity and frequency could generate in Cabo Verde. This allows us to provide unique information on extreme flood events, which are expected to become more frequent as climate changes. Based on these potential capital losses, we then use a traditional Cobb-Douglas production function to derive potential growth impacts associated to each flood

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[4] Temperature could increase by +0.6°C (SSP1-1.9) to +3.41°C (SSP5-8.5) above the 1995-2014 average by the end of the century. Projected changes to precipitation are less evident, although they point out to a decrease in total precipitation under high warming scenarios. Simultaneously, higher temperatures will intensify the hydrological cycle, which will translate into more frequent extreme rainfall events during the rainy season and could fuel more frequent and intense tropical storms.

[5] Hochrainer-Stigler et al. (2020) define fiscal resilience as "the ability to access domestic and external savings for any purpose—urgent or longer term". Fiscal resilience is here understood as the ability to increase budgetary response in the aftermath of a disaster without jeopardizing fiscal sustainability.

scenario. In the second part of this chapter, these estimates are incorporated in the IMF-World Bank Debt Sustainability Analysis (DSA) to explore how an exogenous shock in the year 2023 affects medium-term fiscal and debt sustainability up to 2042. For this, we consider how shocks affect the debt-to-GDP trajectory in relation to the indicative "debt carrying capacity thresholds". Eventually, a high fiscal resilience scenario is explored to assess how fiscal policy can help smoothing the impacts of extreme floods.

1. The economic impacts of adverse natural events in Cabo Verde

36. **Over the period 2010-2020, reported losses from disaster and climate-related shocks have been on an upward trend, averaging 0.25 percent of GDP.**[6] Under the combined effects of a steady expansion of cities and towns in flood prone areas and more frequent extreme rainfall events, increasing flood impacts have been recorded: in São Nicolau (2009), Boavista (2012), São Miguel (2013, with damages estimated at US$2.6 million), and Santo Antão (2016, with damages estimated at US$7 million). In 2015, Hurricane Fred, the first hurricane recorded over Cabo Verde since 1892, caused damages estimated at US$2.5 million (Jenkins et al., 2017). Likewise, the low levels of precipitation in 2017 led to a major drought event that affected up to 70,000 people according to the Government's estimates.[7] Eventually, the volcanic eruption in 2014-15 in Fogo triggered the highest level of direct and indirect losses, with an overall impact estimated at US$28 million (PDNA, 2015).

Figure 15: The Economic Impacts of Adverse Natural Events in Cabo Verde

During 2010-2020, losses from adverse natural events averaged 0.25 percent of GDP each year… *… on average, their occurrence is associated with a reduction of growth on the year of impact*
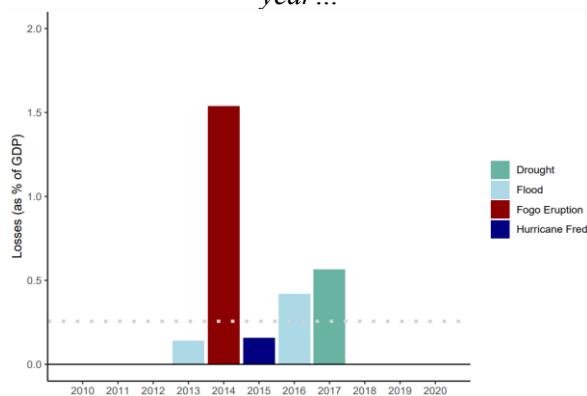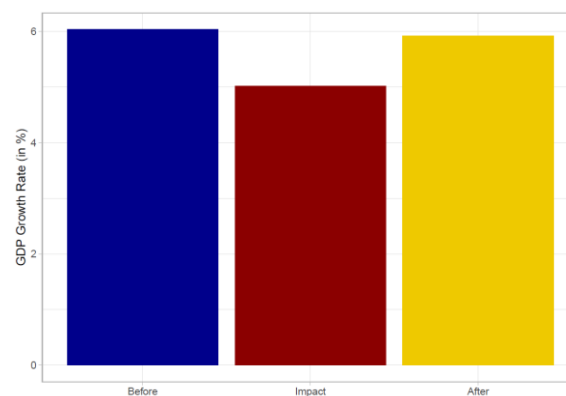
Source: Losses compiled from various sources (CATDAT, EM-DAT, PDNA and Monteiro et al., 2013).

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[6] Source : CATDAT, EM-DAT, PDNA and Monteiro et al., 2013. No losses were reported during the 2000-2010 decade, while they only reached 0.06 percent of GDP during 1990-2000. Part of this upward trend is likely to be driven by improved reporting capacity, but it also unveils the increasing exposure of the archipelago to these shocks.

[7] To alleviate the effects of the drought, Cabo Verde approved an emergency plan with interventions totaling US$8.2 million (resolution no. 110/2017) and almost exclusively funded through donors.

37. **Beyond this direct impact, adverse natural events also triggered indirect losses and economic disruption and have been associated with reductions in GDP growth rates**. Event analysis for the period 1980-2020 points out to detrimental growth effect when a disaster hit the country. This impact has been of 1 percentage point (p.p.) on average on the year of the shock. Interestingly, growth rates tend to return to pre-disaster trend within the three years following the shock but no "rebound effect" seems to materialize. Econometric analysis conducted under the Cabo Verde Country Economic Memorandum[8] also evidenced that droughts negatively impact agricultural output growth rates, while extreme rainfall events significantly reduce non-agricultural output. Together, these findings unveil the high sensitivity of the Cabo Verdean growth model to climate conditions, with potentially worsening impacts as climate change unfolds.

38. **While useful, the historical data presented above is insufficient to inform on the magnitude of potential losses from adverse natural events.** As Cabo Verde grows its economy and expands its cities, the country accumulates more physical and productive assets and its level of vulnerability to adverse natural events varies. If new assets are located in risk-prone areas, they inflate the exposure of the country, configuring a scenario of potential losses that is different from the historical pattern. Besides, given restricted data availability, historical losses do not capture the full spectrum of hazard conditions and underestimate impacts of large catastrophic events. To get a more robust sense of the damages that adverse natural events could generate, historical analysis must be complemented with probabilistic risk assessment. Probabilistic risk models were originally developed by the international (re)insurance industry and are the base to prepare a risk profile. Risk models are based on scientific and engineering studies of natural hazards and their impacts on specific assets like buildings and infrastructure. They integrate high-resolution data on location and quality of properties to estimate potential losses of physical capital for events with various likelihoods (see annex 1 for a detailed description).

39. **Annual Average Losses (AAL) from multiple hazards have been estimated at almost 1 percent of GDP (US$ 18.2 million).** The Disaster Risk Profile quantifies potential direct losses that floods, droughts, volcanic eruptions, and earthquakes could generate to physical assets. Estimated losses are mainly driven by flood-related risk, which account for almost 70 percent of the aggregated AAL (see table 1). It is worth noting that these estimates are based on current climate patterns and do not factor-in potential impacts due to climate change. Importantly, AAL from the risk profile are approximately five times more important than historical annual average losses, highlighting the urgency to strengthen the resilience of growth to limit future losses.

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[8] To be published in 2023.

Table 2: Key Impact of Disaster and Climate-related Risk in Cabo Verde

Hazard Type	Average Annual Loss (AAL)	
	in US$ million	In percentage of GDP
Flood	13.4 M	0.68%
Earthquake	1.0 M	0.05%
Volcanic eruption	1.2 M	0.06%
Drought	2.6 M	0.13%
Total	**18.2 M**	**0.93%**

Notes: (i) Figures are in 2018 USD. (ii) The Average Annual Loss (AAL) is the expected loss per year, averaged over many years. (iii) The risk is evaluated only for volcanic eruptions in Fogo, with the AAL computed as the incurred damages and losses from the 2015 eruption—updated to 2018—divided by the frequency of eruptions. (iv) AAL estimates for droughts correspond to agricultural income losses because of a drought episode in Cabo Verde.
Source: Results from the revised Cabo Verde Disaster Risk Profile (2020) for floods.[9]

40. **Given the predominance of flood-related losses and the expected intensification of extreme rainfall events as climate changes, the remainder of this assessment focuses on stress-testing debt sustainability in the face of flood risk**. Stress tests usually focus on acute losses in the short run that could trigger systemic risk. As such, taking advantage of the flood risk profile developed for Cabo Verde, the proposed stress test includes flood extreme events i.e., tail-risk events. The risk profile indicates for example that Santiago or São Vicente faces each a 1 percent annual probability of losses exceeding US$37 million (equivalent to 1,88 percent of GDP).[10] These extreme events are becoming more frequent under a changing climate and their economic consequences need to be carefully analyzed to identify relevant policy options that can enhance the country's preparedness and capacity to cope with these shocks.

2. Calibrating the macro-fiscal effects of floods in Cabo Verde

41. **Whether a disaster becomes a significant threat to debt sustainability not only depends on the initial magnitude of losses to physical assets but also on the structural features and wider macro-fiscal conditions of the economy hit**. To derive mid-term macro-fiscal trajectories from the potential damages to physical assets presented above, we calibrate three critical dimensions to the features of the Cabo Verdean's economy: (i) following the framework proposed by Hallegatte et al. (2022a and 2022b), we first estimate the magnitude of potential growth impacts arising from capital destruction; (ii) we then assess the fiscal burden and the share of contingent liabilities that the Government is able to finance in the

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[9] The numbers are the result of a revision and improvement by the World Bank Disaster-Resilience Analytics and Solutions (D-RAS) team of the Cabo Verde Disaster Risk Profile initially produced by GFDRR in 2019.
[10] This is the Probable Maximum Losses (PML) for the 100-year return period. The flood risk profile for Cabo Verde was conducted at the island level. In the proposed analysis, acknowledging Exceedance Probability (EP) curves are not additive, and assuming no correlation in losses between islands, the national losses are proxied as the sum of the PMLs for each island. Although similar risk metrics have been developed for drought risk in Cabo Verde, they correspond to agricultural income losses, which would primarily affect households' welfare. Accurately capturing macro-fiscal impacts of droughts would thus require a different approach to the one proposed here and is beyond the scope of this report. It nonetheless represents a relevant avenue for future investigations.

aftermath of a flood; and (iii) we derive the time dimension and dynamic growth effects that might play out after a flood.

42. **To fully account for the macroeconomic impacts of large floods, it is essential to go beyond damages to physical assets and consider potential amplification effects**. Empirical and theoretical literature have highlighted how disasters reduce both the stock of capital and total factor productivity (TFP, see Hallegatte and Vogt-Schilb, 2019; Dieppe et al., 2020). To translate the damages to physical assets from the flood risk profile into growth effects, we therefore use a standard Cobb-Douglas function and assume that destroyed assets makes the remaining capital less productive. In other words, disasters not only reduce the total stock of capital, but also its productivity. This effect is perfectly illustrated through the example of damages to transport infrastructure: if airports are damaged and bridges washed away by torrential rains, growth impacts will be more severe than the value associated to assets lost. Disruptions to transport networks will reduce the productivity of business and assets relying on this infrastructure -at least until connectivity is restored. In the proposed assessment, this effect is captured through a TFP shock calibrated such that its value increases as the losses to physical assets rises (see annex 2 for more details).

43. **Considering these effects, results indicate that potential GDP growth rates could significantly suffer from rare but large-scale floods**. As shown in Table 3, rare floods with return periods of 100 years or more (i.e., a 1 percent annual probability or less) could reduce GDP by 6.7 to 8.9 percentage points.[11] More precisely, Cabo Verde faces a 1 percent annual probability of experiencing asset losses equivalent to approximately 5.8 percent of GDP, which could imply a GDP deviation from a "no-flood" scenario of 6.7. p.p. This impact is almost comparable to the impact of the 2008 global financial crisis for Cabo Verde[12]; It is also greater than one standard deviation of the annual GDP growth rate during the period 2010-2020 (i.e., 5.6), which could be viewed as a benchmark indicator to stress test debt sustainability. For one-in-a-500-year floods, the GDP impact is around half as large as the shock to GDP observed during the COVID crisis.[13] The growth impact is nonetheless relatively small for floods that could occur, on average, once every 10 years or more frequently.[14] Interestingly, results suggest a nonlinear relationship between asset losses and output losses, whereby GDP impacts are higher than asset losses for flood with a return period of 50 years or more. This reflects the amplification effects that could materialize in the case of large catastrophic floods and is consistent with empirical evidence (Felbermayr and Gröschl, 2014).

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[11] Frequent floods are those associated with a lower return period (such as 5 or 10 years). On the other hand, floods associated with larger return periods (50 or 100 years) occur less frequently but are of higher intensity and can cause larger impacts.

[12] During the global financial crisis, growth dropped from 6.7 percent in 2008 to -1.3 percent in 2009 (i.e. a 7.9 percentage points drop).

[13] Growth dropped from 5.7 percent in 2019 to -8.9 in 2020 (the start of the pandemic).

[14] The cumulative impacts of low intensity flood could significantly reduce GDP over decades as they are, by essence, more frequent. Nonetheless, the annual impact of a single event is small and unlikely to represent a significant risk in the framework of our stress test.

Table 3: Flood Impact on Capital and GDP for Cabo Verde

Return Period	Annual Probability	Asset losses (in % of GDP)	Peak GDP losses (in p.p)
2	50%	0.92	-0.27
5	20%	1.25	-0.71
10	10%	1.92	-1.58
25	4%	2.20	-1.94
50	2%	3.57	-3.73
100	1%	5.86	-6.70
250	0.40%	6.48	-7.51
500	0.20%	7.52	-8.86

Source: authors estimates based on revised Cabo Verde Disaster Risk Profile for floods
NB: GDP losses are to be interpreted as a deviation of GDP from the "no-flood" scenario.

44. **A second crucial dimension to calibrate the effects of flood on overall debt sustainability is the fiscal burden that the Government will bear in the aftermath of a flood.** Obviously, not all the costs associated to damaged or destroyed assets will have to be bear by the Government, since a large part of them are private assets. From a fiscal perspective, climate and disaster risks constitute contingent liabilities to government finances.[15] A review of most recent disasters in Cabo Verde shows that the costs imposed by adverse natural events are in fact made of both explicit (e.g., damages to public infrastructure, public buildings) and implicit (e.g., support to affected households, private dwellings) contingent liabilities. Contingent liabilities associated to disasters are thus to be viewed as a share of the total asset losses presented in column 3 of table 3. Nonetheless, the magnitude and nature of these liabilities is event-dependent and very uncertain. Ultimately, the fiscal cost of disasters primarily depends on the amount of implicit contingent liabilities that the Government is able to finance when the shock hits. In the remainder of the analysis, additional public expenditures associated to flood are assumed to represent 50% of the total losses to physical assets (i.e., 50% of column 3 of table 3). This would present a significant fiscal burden that ranges from USD 9 million (2-year return period) up to 75 million (500-year return period).

45. **A key final aspect that will alter the effects of floods on debt sustainability is the dynamic growth effects that might play out after a shock.** Following recent literature and in line with the dynamics observed after recent disasters in Cabo Verde, detrimental growth effects are calibrated to be gradually phased out, although they will persist until reconstruction is fully completed (see annex 2 for more details and the following authors for a comprehensive discussion: Hsiang and Jina 2014, Dell et al. 2014, Burke et al. 2015, Del Valle et al., 2020, Krichene et al. 2021). More precisely, the "peak growth effect" is reached during the year of the shock and is then reduced in line with reconstruction time. [16] Reconstruction time is

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[15] Contingent liabilities refer to obligations that are triggered when a potential, but uncertain future event occurs (International Monetary Fund, 2016).

[16] Implicitly this assumes that TFP and capital will take time to adjust but will eventually return to their pre-disaster trends once recovery and reconstruction are completed. As noted in Hallegatte et al. (2022a), in the immediate aftermath of a disaster, the

estimated as a function of (i) the intensity of the flood and (ii) the available post-disaster financing. As show in equation 1, more extreme floods (i.e., a bigger shock to assets losses) would lead to more years of reconstruction - hence longer adverse growth effects – while improved access to post-disaster financing (e.g., via a Cat DDO) leads to fewer years of reconstruction ceteris paribus. In this setting, fiscal space shape government's ability to finance disaster recovery and reconstruction, which in turn affects reconstruction time and the persistence of adverse growth impact.

$$\text{Reconstruction time} = \frac{\text{Public asset losses}_y}{\text{Yearly post−disaster financing}} \quad (1)$$

46. **Under the baseline scenario we estimate that the government can finance reconstruction at 2 percent of government expenditure annually.[17]** Since Cabo Verde has little fiscal space and is mostly credit-constrained – it cannot borrow commercially abroad, and it can only borrow small quantities domestically due to a small local financial sector- post-disaster financing is assumed to be capped under the baseline scenario. Under this assumption, the time needed for reconstruction is comprised between 1 to 6 years, depending on the severity of the flood (see annex 2 for the illustrative growth pathways associated to each return period). This calibration is aligned with what has been observed in the aftermath of recent disasters in Cabo Verde, where recovery and reconstruction have been constrained by institutional weaknesses and a lack of fiscal space.[18] It is also consistent with the official recovery framework established by the government of Cabo Verde which distinguishes a medium-term recovery that spans 1 to 3 years, while the long-term recovery can last 3 to 10 years, depending on the severity of the event.[19]

3. Debt Sustainability Analysis under different flood scenarios

47. **To assess the impact of floods on debt sustainability, we incorporate flood-related losses as an exogenous shock of a given probability that affects key macroeconomic parameters and shapes debt trajectory.** Figure 3 provides a conceptual framework, adapted from the IMF-World Bank Debt Sustainability Framework (DSF). This shows that a climate-related shock of a given probability (in our case, flood) leads to asset losses. As discussed in the

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substitutability of different capital stocks is very limited and reallocation of assets is only partially possible (e.g., bridges cannot be moved) and costly, which is why TFP and capital take time to return to pre-disaster trends.

[17] During the volcanic eruption of Fogo in November 2014, the government was able to mobilize around US$7.5 million in the short-term to finance recovery and reconstruction (equivalent to around 1.8 percent of government expenditure that year). Using the Fogo case as benchmark and adjusting for higher tax revenue since 2014, we therefore assume 2 percent of government expenditure is annually available in the baseline scenario.

[18] After the Fogo volcanic eruption (approx. a 20-year return period event), the period of recovery was set by the Government at a period of two years. (PDNA, 2015). The full recovery is however likely to have exceeded this two-year period.

[19] The recovery framework is available online here.

previous section, this shock generates adverse potential growth effects and implies additional unplanned government expenses. The ability to meet post-disaster financing needs will shape the magnitude and overall impact of the shock on GDP growth. The overall magnitude and persistence of adverse growth impacts will in return affect nominal GDP and at least temporarily reduce public sector revenue. Fiscal pressures arising this scissors effect on revenues and expenditures will lead to a worsening primary fiscal balance, which will further raise the gross financing requirement. By affecting the overall financing requirement, these channels thus affect the overall stock of debt and the amount of debt servicing required.

Figure 16: Conceptual Framework: How Climate-related Shocks can Affect Debt
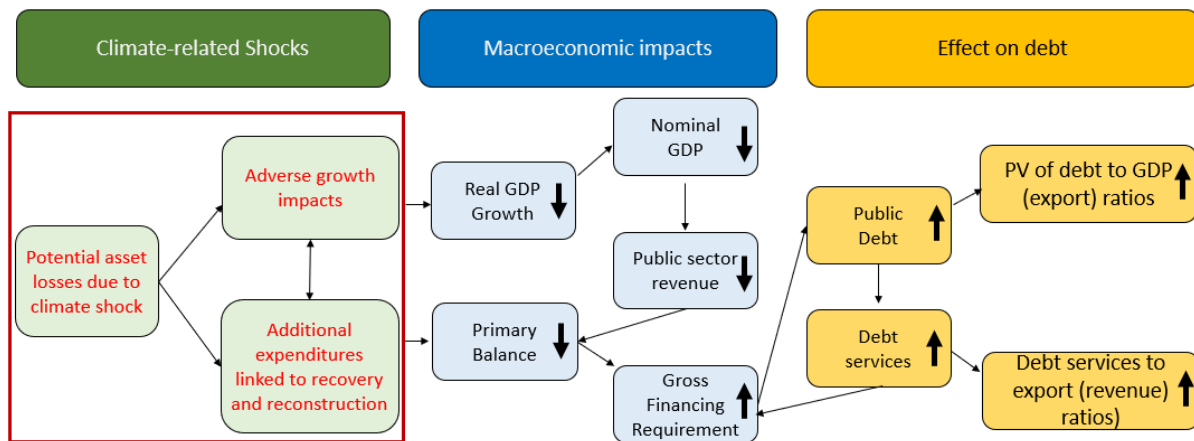
Source: authors' adapted from IMF-World Bank (2018) "Guidance note on Bank-Fund debt sustainability framework for low-income countries"

48. **The analysis then utilizes the IMF-World Bank Debt Sustainability Framework (DSF) to model the impact of floods on Cabo Verde's debt sustainability.** Box 1 provides more detail on the DSF. Our analysis explores how a shock in the year 2023 affects medium-term fiscal and debt sustainability up to 2042. We start with the most recent IMF-WB Debt Sustainability Analysis (DSA, completed in June 2022) and adjust the benchmark scenario to reflect new, higher growth figures for the year 2022. We assume the flooding occurs in the year 2023, and then adjust three key parameters in the DSA (in line with the mechanisms described in the previous section):

   • Government spending (which rises in line with reconstruction costs);
   • GDP growth rate (which deviates in line with the estimated annual growth impact); and
   • External debt accumulation (in case of Cat DDO).

Next, we consider how these shocks affects key parameters of debt sustainability in relation to its DSA debt carrying capacity thresholds (defined by IMF-WB):

   • Risk of public debt distress (PV of total public debt as share of GDP **< 70%**)

- Risk of external debt distress (PV of Public and Publicly Guaranteed (PPG) external debt-to-GDP ratio **< 55%**)

Box 2: The IMF-World Bank Debt Sustainability Framework (DSF) Explained

The IMF-World Bank Debt Sustainability Framework (DSF) uses indicative thresholds, linked to country classification, to analyze the risk of public and external debt distress. These thresholds are bounds above which the risk of debt distress is considered elevated.[20] Thresholds depend on countries' debt carrying capacity[21]. For Cabo Verde, two key parameters (among others) shape their debt sustainability in relation to their debt carrying capacity thresholds (defined by IMF-WB):

- **Risk of public debt distress**: measured based on present value (PV) of total public debt as share of GDP, that should be **below 70 percent.**
- **Risk of external debt distress:** measured based on prevent value (PV) of total public- and publicly guaranteed external debt-to-GDP ratio, that should be **below 55 percent**.

The DSF then qualifies countries as being under "low", "moderate" or "high" risk of debt distress in relation to these debt thresholds. The DSF conducts several stress tests to see how vulnerable a country's debt situation is to external shocks. From this, it provides three classifications:

- **Low risk of debt distress** if none of the debt burden indicators breach their respective thresholds under the baseline, or the most extreme stress test.
- **Moderate risk of debt distress** if none of the debt burden indicators breach their thresholds under the baseline, but at least one indicator breaches its threshold under the stress tests.
- **High risk of external debt distress** if any of the debt burden indicators breaches its threshold under the baseline.

The latest IMF-World Bank Debt Sustainability Analysis (DSA) for Cabo Verde shows that its current risk of overall debt distress remains high, while the risk of external debt distress is moderate. As explained before, it is classified accordingly because the PV of total public debt-to-GDP ratio is projected to breach the threshold during 2022–28 under the baseline scenario and stress test (and is thus at "high" risk). At the same time, from 2023 onwards, the present value of public and publicly guaranteed external debt-to-GDP ratio only breaches its threshold under stress test scenarios (and so is at "moderate" risk).[22]

Source: Authors' elaborations using IMF-World Bank (2018) and IMF-World Bank (2022).

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4. Baseline scenario

49. Results indicate that small recurrent floods have a relatively modest impact on Cabo Verde's debt sustainability, while extremely rare and large floods could push up public

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[20] For details, see IMF-World Bank (2018).

[21] Countries with stronger capacity (like Cabo Verde) benefit from higher thresholds. This is based on a composite measure covering a policy and institutional assessment, growth, reserve coverage, remittances, and world growth.

[22] Jointly, the external and overall debt outlook is assessed to be sustainable but predicated on a continued recovery of economic activity in 2022, a return to the pre-pandemic fiscal consolidation path as well as resumption of structural reforms, notably to restructure State-Owned Enterprises (SOEs) to reduce fiscal risks (including from contingent liabilities) and improve the business environment (see IMF-World Bank, 2022).

debt ratios and considerably shift the risk of anticipated debt-to-GDP trajectory. Figure 4 (left-hand figure) presents the present value (PV) of public debt as a share of GDP in the absence of flood and across different floods scenarios. These scenarios range from a 5-year return period (i.e. flood generating asset losses that have a 20 percent annual probability of being exceeded) to a 500-year return period (i.e. losses that have a 0.2 percent annual probability of being exceeded). Under the "no flood scenario", the PV of public debt is shown to quickly decrease from 103 percent in 2021 down to 70 percent by 2028. Small and recurrent floods (with a return period ranging from 2 to 25) push this trend up a little, so that public debt is expected to fall below the 70 percent threshold one year or two year later, by 2029 or 2030. Overall, a single low intensity flood event has a relatively modest impact on public debt. However, rarer but more damaging floods (i.e., flood ranging from a 50 to a 500-year return period) significantly alter the public debt ratio trajectory and could threaten debt sustainability: for tail events (once in 500 years), public debt would meet the risk threshold 14 years later than in the "no flood" scenario.

50. **For external debt, we similarly find that small recurrent floods have a relatively modest impact on external debt sustainability, while more extreme events could significantly delay the year where Cabo Verde falls below the indicative risk threshold.** Figure 45 (right-hand figure) presents the PV of public and publicly guaranteed external debt as a share of GDP across different flood scenarios. Under the "no flood scenario", external debt is shown to quickly decreases from 59 percent in 2021 down to 55 percent by 2022 (i.e., the indicative risk threshold). Any small and recurrent flood (with a return period of 25 years or less) has very little impact on this trend (in part because most of the government re-construction cost is financed domestically). However, tail events can significantly push up external debt ratios. For a level of flood-related losses that has a 1% annual probability of being exceeded (i.e., RP 100), the external debt-to-GDP trajectory displays a significant spike and creeps above the risk threshold until 2026.

5. High fiscal resilience scenario

51. **To consider policy options for improving debt sustainability, we compare the impacts of floods described above to these impacts under a high fiscal resilience scenario.**[23] This high fiscal resilience scenario entails two major elements: (i) risk financing instruments to quickly mobilize additional post-disaster resources in favorable financial conditions; (ii) a strong rule-based mechanism that facilitates an efficient allocation and execution of post-disaster resources to speed-up recovery on the ground. There is robust evidence that when governments quickly channel post-disaster resources through efficient and transparent rule-based mechanisms,

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[23] As a reminder, fiscal resilience is here understood as the ability to increase budgetary response in the aftermath of a disaster without jeopardizing fiscal sustainability.

economic recovery is considerably accelerated (Del Valle et al. 2020).[24] The accommodative fiscal policy conducted under this high fiscal resilience scenario is therefore calibrated assuming (i) a US$10 million Cat DDO is available[25] and (ii) the existing National Emergency Fund (FNE by its Portuguese acronym) allows to efficiently channel these additional resources, thereby boosting economic recovery and lessening the duration of adverse growth effects.[26]

52. **Results suggest that the high fiscal resilience scenario could help mitigating the impacts of flood on debt sustainability prospects, especially in the case of extreme events**. As the shock gets more severe, the ability to rapidly re-finance and implement a recovery and reconstruction plan marks a more pronounced difference between the two debt-to-GDP trajectories (see annex 2). As a result, the high fiscal resilience scenario would also help Cabo Verde fall below the indicative risk thresholds more quickly. Regarding public debt, for a 50-year return period flood, the difference between the two policy scenarios is one year (2031 in the baseline scenario, vs. 2030 in the high fiscal resilience scenario) and goes up to four years in the most extreme scenario 2042 under the 500-year return period baseline, versus 2038 in the high fiscal resilience scenario, see Figure 18 - left). Regarding external debt, the ratio stays below indicative risk threshold for all floods with a return period of 50 years or less. For more extreme rainfall (RP=250, RP=500), speedy access to financing helps the country fall below the risk threshold a year earlier (at the year 2026, and 2028, respectively, see Figure 18 - right). Importantly, for both public and external debt, this high fiscal resilience scenario only marginally limits the shift of the debt ratios trajectories vis-a-vis the "no-flood scenario" (see annex 2). These results thus highlight the need to complement the policy options detailed of this high fiscal resilience scenario with measures aimed at reducing climate and disaster risk in key growth-enhancing sectors.

53. **The results obtained in this chapter should be interpreted with caution.** The assessment focuses on flood damages alone and does not include other natural hazard risks that could also be amplified with climate change, such as sea-level rise or ocean warming. Importantly, the exercise focused only on macro-economic-level transmission channels affected by extreme floods and did not consider the cumulative impacts of more frequent small floods nor the redistributive effects of these shocks. Neither does it include a scenario of compounding shocks, where floods would occur concomitantly to other shocks (e.g., Covid-19 or financial crisis). However, given the totally exogenous nature of adverse natural events, Cabo Verde could potentially be hit by a "compounding shocks" scenario and these scenarios could be

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[24] Del Valle et al. investigate the case of Mexico and its disaster fund (i.e., FONDEN) and found that one year after a heavy rainfall event, economic activity -proxied through night lights- in municipalities that received FONDEN support is 6 percent higher than in those ineligibles, which in terms of GDP implies a GDP that grew 2.5 percent more in municipalities with Fonden support than those without.

[25] A US$10 million Development Policy Financing with a Catastrophe Deferred Drawdown Option (Cat DDO) was signed with the World Bank in 2022.

[26] As detailed in the previous section and in annex 2, the increase in post-disaster funding shortens the period needed to complete reconstruction.

included as part of future stress tests. In addition, results should be interpreted cautiously, given the high level of uncertainty at all layers of the analysis, including: (i) uncertainties related to the frequency of adverse natural events and the level of damages they could produce to physical assets in Cabo Verde; (ii) uncertainties about the quantitative effects of the shocks on the environment and socio-economic systems and their implication for the overall production process; and (iii) uncertainties about other macroeconomic variables that could shape debt refinancing strategies (e.g. tightening monetary policy in major global economies). Eventually, this assessment points to the need for more analytical work and new forms of data collection to ensure that disaster and climate risks can be more fully and robustly incorporated into DSA analysis.

Figure 17: Extreme floods could significantly shift the anticipated trajectory of debt

PV OF PUBLIC DEBT-TO-GDP RATIO

PV OF PPG EXTERNAL DEBT-TO-GDP RATIO
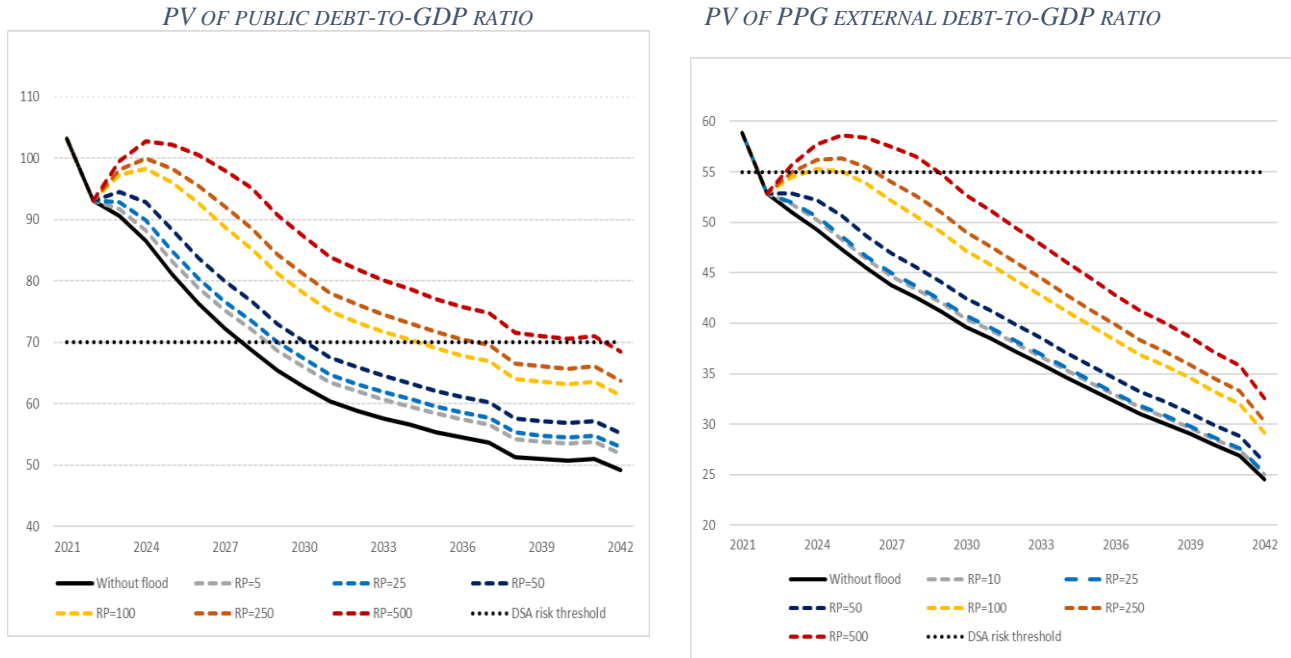
Figure 18: Under a "High Fiscal Resilience" scenario debt ratio would fall faster below the indicative risk threshold

YEAR WHERE PV OF PUBLIC DEBT AS SHARE OF GDP FALLS 70 BELOW PERCENT

YEAR WHERE THE PV OF PPG EXTERNAL DEBT-TO-GDP RATIO FALLS BELOW 55 PERCENT
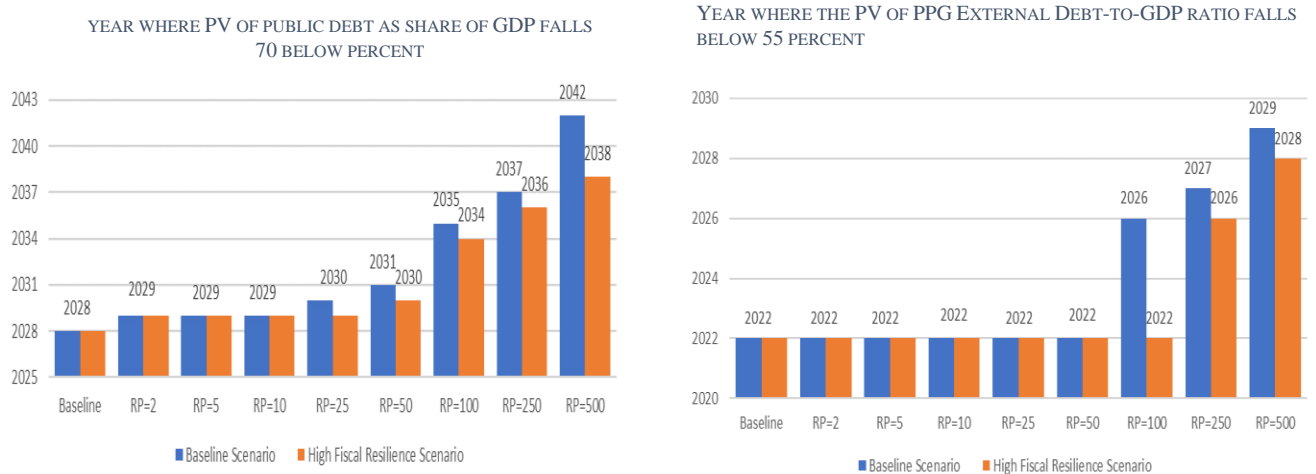
NOTE: RP= RETURN PERIOD ASSOCIATED TO EACH FLOOD SCENARIO; PV= PRESENT VALUE

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6. Conclusion and Policy Options

54. **This report uses the results of the revised Cabo Verde Disaster Risk Profile to stress test debt sustainability in face of extreme flood events.** The analysis provides detailed outcome across different flood return periods (i.e., floods-related losses of a given probability), including tail events, that allow to present more details of the macro-fiscal implications of extreme floods. These extreme events are becoming more frequent as climate changes and need to be carefully analyzed to ensure debt sustainability looking forward in particular in the context of Cabo Verde.

55. **Results show that, although recurrent small floods represent a limited threat, rare but more damaging floods could have a significant impact on Cabo Verde's debt sustainability.** A rare but catastrophic flood could significantly push up debt rates, which would shift Cabo Verde's public debt above its indicative debt carrying capacity thresholds (up to 14 years in the most extreme scenario, from 2028 under baseline to 2042). Adopting policies to strengthen fiscal resilience, including through a US$10 million Cat DDO and an efficient rule-based mechanism to allocate and execute post-disaster financing, is found to provide some protection by enabling a faster recovery and reducing GDP losses, thereby leading to an accelerated reduction of the debt to GDP ratio. This would help the country fall below the indicative debt risk thresholds more quickly. Yet, for the most severe floods, even under this strengthened fiscal resilience scenario, the trajectory of the debt to GDP ratio would significantly deviate from the "no-flood scenario", potentially derail ongoing fiscal consolidation efforts and highlighting the urgent need to invest in risk reduction and climate adaptation to limit potential losses.

56. **To reduce the risks highlighted in this chapter, authorities could consider policy options along three broad areas of reforms.** The policy options presented here draw from the upcoming CEM[27] and interested readers are encouraged to refer to this document for a more detailed presentation of these policy options. First, disaster and climate risk could be more systematically incorporated into the broader fiscal risk strategy. Authorities could for example continue reflecting risk factors and outline mitigation and provisioning measures in the fiscal risk statement that is published with the annual budget. This would ensure that climate and disaster risks assessments are used to inform fiscal policy making. Secondly, building upon the recently signed DPF with a Cat DDO with the World Bank, the Government could develop a more comprehensive risk financing strategy to increase its capacity to conduct counter-cyclical policies in the aftermath of a disaster. This strategy could seek to combine risk retention and risk transfer instruments to increase coverage, acknowledging that no single financial instrument can cover all risk. Risk transfer instruments such as traditional insurance

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[27] Cabo Verde Country Economic Memorandum: *Sailing Rough Seas, Accelerating Growth and Fostering Resilience to Climate Change.* World Bank Group

or more innovative market-based instruments such as Cat-Bonds or Cat-Swaps could be particularly relevant to provide coverage against extreme events considered in this study (i.e. rare but high-intensity events). Likewise, "*disaster clauses*" embedded in debt instruments to allow the scheduled debt service payments to be changed when a disaster or climate-related shock hit could constitute a relevant instrument to strengthen public debt sustainability in the face of extreme events. Ensuring that rule-based mechanisms are in place to increase efficiency and transparency in post-disaster resources allocation and execution is equally important. Finally, targeted investments in risk reduction and climate change adaptation will be required to limit the future impacts of adverse natural events and cushion development prospects in a changing climate. Climate-proofing critical infrastructures will deliver major savings in the face of more frequent and intense adverse natural events. Resilient infrastructures also contribute to fostering a quick and robust economic recovery, which in turn limits the potential negative spillovers and minimizes growth impacts associated to the initial shock. Public policies have therefore a critical role to build economic resilience to climate change and ensure the sustainability of debt and future development in Cabo Verde. Table 4 summarizes the policy options that could be considered to this end.

Table 4: Policy Options

Recommendation	Responsibility	Timeline
Account for, and incorporate, disaster and climate-related fiscal risks into the broader fiscal risk management strategy		
Strengthen the inclusion of disaster and climate risks in the fiscal risk statement	MoF/Fiscal Risk Committee	Short term
Incorporate these risks into medium-term fiscal policy documents such as the medium-term fiscal frameworks (MTFFs), medium-term debt strategy (MTDS), and Debt Sustainability Analysis.	MoF/Fiscal Risk Committee	Medium term
Develop an integrated risk-layered strategy to increase budgetary capacity for a quick response in the wake of a disaster while preserving public finance sustainability		
Delineate explicit and implicit contingent liabilities associated with disasters and climate-related shocks	MoF/Fiscal Risk Committee	Short term
Bring together existing risk financing instruments within a strategic and integrated vision and assess diverse risk-financing options to increase coverage against disasters and climate-related shocks, considering the wider macroeconomic conditions	MoF/Fiscal Risk Committee	Medium term
Promote rules-based mechanisms to increase efficiency and transparency in post-disaster resources allocation and execution	MoF/FNE	Medium term
Climate-proof critical public infrastructure, enforce risk-informed territorial planning and promote targeted investments in disaster risk reduction and climate adaptation		
Climate proof public investments through the incorporation of climate and disaster risk considerations into the design, formulation, and evaluation of new investment projects	MoF/DNP	Short term
Increase the resilience of road networks through risk-informed transport asset management.	MIOTH / Infraestruturas de Cabo Verde/ Estrades de Cabo	Medium term

	Verde (ECV)	
Strengthen territorial planning and increase coastal resilience through a mix of green and grey infrastructure that leverage Nature-based Solutions.	Ministry of Infrastructure, Territorial Planning and Housing (MIOTH) / INGT/ Ministry of Environment and Agriculture / Ministry of the Sea	Medium term

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Annex 1. Cabo Verde Disaster Risk Profile

To address the shortages associated with historical data and provide a more comprehensive view of risk, a Disaster Risk Profile was developed and later revised and improved for Cabo Verde focused on floods, drought, volcanic eruption, and earthquake. The Disaster Risk Profile provides a view of potential losses that disaster and climate-related events could generate to physical assets in a given region and have been used by an increasing number of countries as a foundation to inform disaster and climate resilience decision-making.

The modelling techniques used to develop a Risk Profile were originally developed by the international (re)insurance industry to assess the risk of different natural catastrophes on portfolios of underwritten physical assets (e.g., buildings) and are increasingly being used by governments to analyze their exposure to adverse natural events. These techniques are based on the science and engineering studies of natural hazards and their impacts on specific physical assets like buildings and infrastructure. Typically, these models comprise the following modules:

- *Exposure Module*: A geo-referenced database of assets at risk, which captures important attributes such as geographical location, type of occupancy (e.g., residential, commercial, industrial, agricultural) and construction type (e.g., wood, steel, masonry), age and number of stories.
- *Hazard Module*: A catalogue of thousands of potential natural catastrophe events that could occur in a region, each one defined by a specific frequency and severity of occurrence. Analyses are performed on the historical occurrence of catastrophic events to capture the extent of possible events, based on expert opinions.
- *Vulnerability Module*: A series of relationships which relate the damage to an asset to the level of intensity of a peril (e.g., ground shaking for earthquakes, wind speed for tropical cyclones). Relationships vary by peril and by the characteristics of each asset; for example, a small wooden house and a tall concrete building will respond in different ways to an earthquake and, as such, will be damaged in different ways and to different extents. On a larger scale, for instance when analyzing an entire neighborhood or city, proxies may be used to capture the overall vulnerability of an area.
- *Loss Module*: A combination of the information in the other three components in order to calculate the overall losses expected for selected perils impacting a portfolio of assets of interest. Typically, there are two kinds of risk metrics produced: average annual losses (AALs) and probable maximum losses (PMLs). The AAL is the expected loss, on average, every year for the risks being analyzed; while the PMLs describe the largest losses that might be expected to occur for a given return period (within a given period), such as a 1-in-50-year loss or a 1-in-250-year loss.

Risk metrics produced by these kind of models are particularly useful to policy makers in assessing different dimensions of risk including the probability of losses and the maximum loss that could be generated by major events (e.g., massive flooding or cyclone affecting the large part of a country).

In Cabo Verde, annual average losses from multiple natural hazards have been estimated at almost 1 percent of GDP (US$ 18.2 million). These are mainly driven by flood-related risk, which represent almost 70 percent of estimated AALs. Moreover, losses are spatially concentrated in the islands of Santiago, São Vicente and to a lesser extent Boa Vista, where most of the assets and population are located. When considering more extreme flood events, Santiago, and São Vicente islands each face an annual probability of 1 percent of losses exceeding US$ 37 million. Although we acknowledge that island-based Exceedance Probability (EP) curves are sub-additive, total asset losses at the national level are approximated by

summing the PMLs of each individual island. Under this assumption of strong correlation of losses across islands, the country faces a 1 percent annual probability of exceeding losses from flood in the order of magnitude of 5.9 percent of GDP (figure A.1). It is worth noting that these estimates are based on current climate patterns and do not factor-in potential impacts of future climate change.

FIGURE A.1. ASSET LOSSES FROM FLOODS APPROXIMATED AT THE NATIONAL LEVEL (IN PERCENTAGE OF GDP)
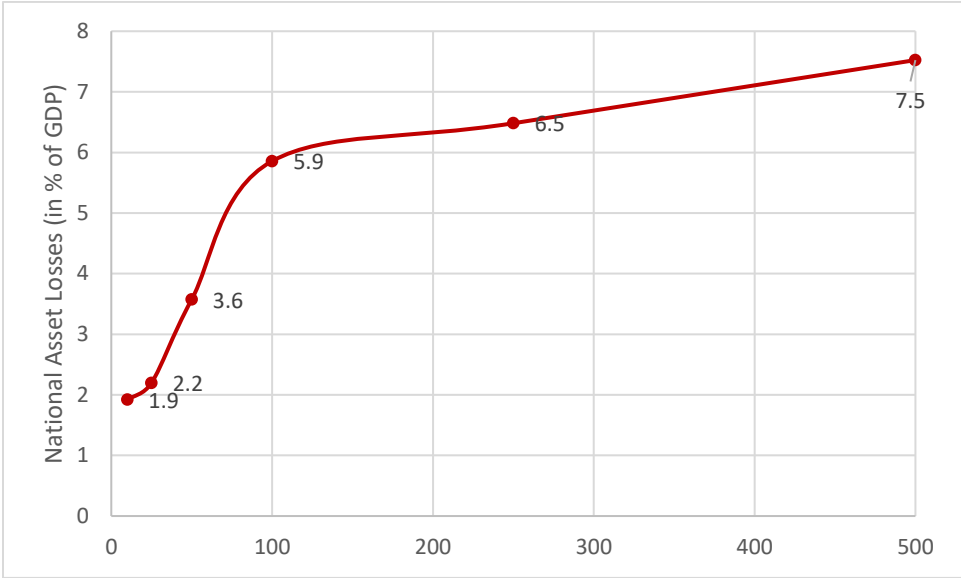
Source: Authors based on revised Cabo Verde Disaster Risk Profile (2020) for floods.

Annex 2. Deriving growth impacts from asset losses in Cabo Verde.

To translate damages to physical assets into growth impacts we use a standard Cobb-Douglas function as follows:

$$Y_t = Z_t \, k_{t-1}^\alpha \, l_t^{1-\alpha} \ (1)$$

Where Y_t is the output in period t, k and n are capital and labor inputs respectively and Z_t is the Total Factor Productivity (TFP). To approximate the growth rate of the output in the case of a given shock to capital, we derive the log-transformed equation (1) and assume that labor is maintained constant. Formally, this corresponds to:

$$LnY_t = LnZ_{y,t} + \alpha \, Ln \, k_{t-1} \ + (1-\alpha) Ln \, l_t$$

$$\frac{\Delta Y}{Y} = \frac{\Delta Z}{Z} + \alpha \, \frac{\Delta K_{t-1}}{K} + (1-\alpha) \, \frac{\Delta L}{L}$$

$$\frac{\Delta Y}{Y} = \frac{\Delta Z}{Z} + \alpha \, \frac{\Delta K}{K}$$

$$\Delta Y = \Delta Z_{y,t} + \alpha (Asset \ losses_y)_t$$

As discussed in the main text, floods impact the production function through two channels:

- *Asset losses*: immediate physical damages to capital and assets are based on the results of the flood risk profile described in annex 1. Asset losses are computed for different return periods ranging from 2 to 500 for each island and expressed as a share of the estimated total stock of capital in this island.[28] Asset losses are then aggregated at the national level to inform on the variation of K for a given return period (i.e., the term "*Asset losses_y*" above). A standard 0.3 coefficient is used for the value of output elasticity α.

- *Decline in total factor productivity*: the shock $\Delta Z_{y,t}$ is calibrated such that its value increases as the losses to physical assets rises. More precisely, for the 2-year return period asset losses, the TFP shock is null and then increases with a magnitude equal to the difference between the asset losses for the return period considered and the asset losses under the 2-year return period scenario. As an example, if asset losses increase from 0.9 to 5.9 -i.e., 5 percentage points- TFP will be reduced from 1 to 0.95. Implicitly, this calibration implies that affected assets include key TFP-enhancing infrastructure (i.e. airports, roads).

Impacts estimated according to this methodology are to be interpreted as a deviation from a "no flood" scenario given the probability of experiencing the level of losses to assets indicated by the return period. This implies that Cabo Verde faces a 1 percent annual probability of experiencing physical losses in the order of 5.8 percent of GDP, which could imply a GDP deviation from a "no-flood" scenario of approximately 6.7. p.p.

A key final aspect that needs to be considered is the dynamic growth effects that might play out after a shock. According to the standard neoclassical growth theory, capital destruction generated by disasters

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[28] Although the cat risk assessment is focused on buildings and infrastructure, we assume that other capital is geographically distributed in the same way -and thus similarly damaged by floods.

subsequently spur investment to replenish the capital stock and, over the medium term, puts product back to its steady state level. The growth rate of economic activity should thus be lower than trend on impact and, under the right institutions, recovery and reconstruction efforts could generate a rebound effect that translates into a higher growth rate than trend thereafter. In practice, this "rebound effect" has been rarely observed and largely depends on factors such as (i) the quality and criticality of the capital stock damaged or destroyed, (ii) the ability of the Government to put together and implement efficient counter-cyclical fiscal policies and (iii) the diversification and overall size of the economy (see Felbermayr and Gröschl, 2014, for an empirically grounded discussion of these dynamics). In fact, for Small Islands Developing States (SIDS) like Cabo Verde, empirical investigations indicate that adverse natural events generate substantial negative growth impacts and rebound effects do not materialize (Strobl 2012, Hsiang and Jina 2014, IMF 2019). Supply side constraints and limited fiscal space often result in delayed recovery and reconstruction, with reconstruction that can last five to ten years, magnifying the initial growth impacts of the shock rather than prompting a rebound effect.

FIGURE A.2. SCHEMATIC VIEW OF THE TIME DIMENSION OF FLOOD GROWTH EFFECTS
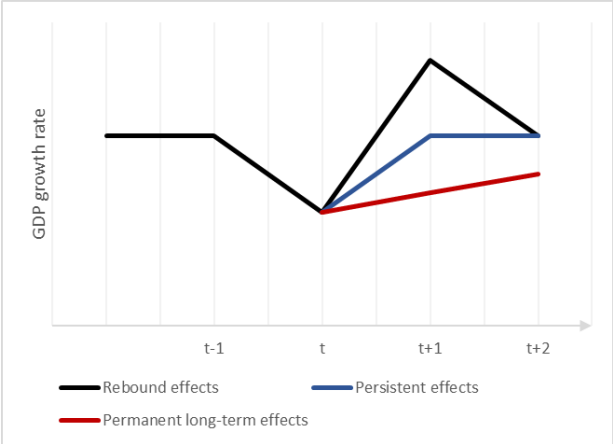
Source: authors adapted from Burke et al. (2015)

Following this growing literature, we assume that detrimental growth effects will persist until reconstruction is completed. In the baseline scenario, the "peak growth effect" is therefore reached during the year of the shock and growth effects are gradually phased out as a function of recovery and reconstruction efforts. This implies that adverse growth impacts are neither wiped off by a "rebound effect" in subsequent periods nor producing long-term effects that permanently reduce the ability of the country to grow. From a schematic point of view, in the aftermath of floods, Cabo Verde GDP growth rate will follow a path like the blue line in figure A.2. Using this approach, for the most severe floods (i.e., 500-year RP), adverse growth effects are estimated to last 5.3 years. Figure A.3. provides an illustration of these dynamic growth effects for different return periods, while figure A.4 recaps the conceptual framework and main assumptions used for this analysis.

FIGURE A.3. DYNAMIC GROWTH EFFECTS ASSOCIATED TO DIFFERENT FLOOD SCENARIOS
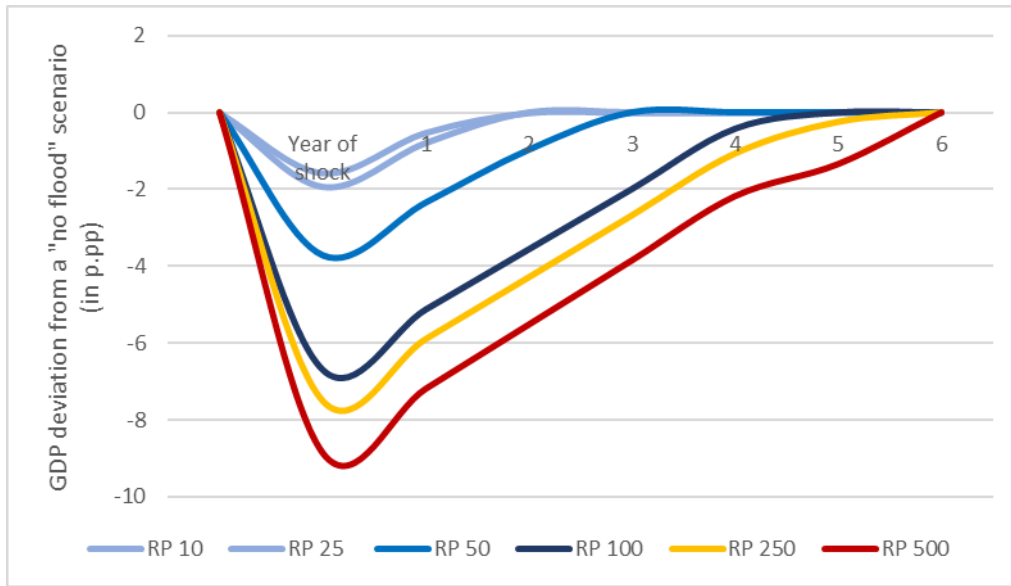

FIGURE A. 4. CONCEPTUAL FRAMEWORK AND MAIN ASSUMPTIONS USED TO DERIVE DYNAMIC GROWTH IMPACTS OF FLOODS
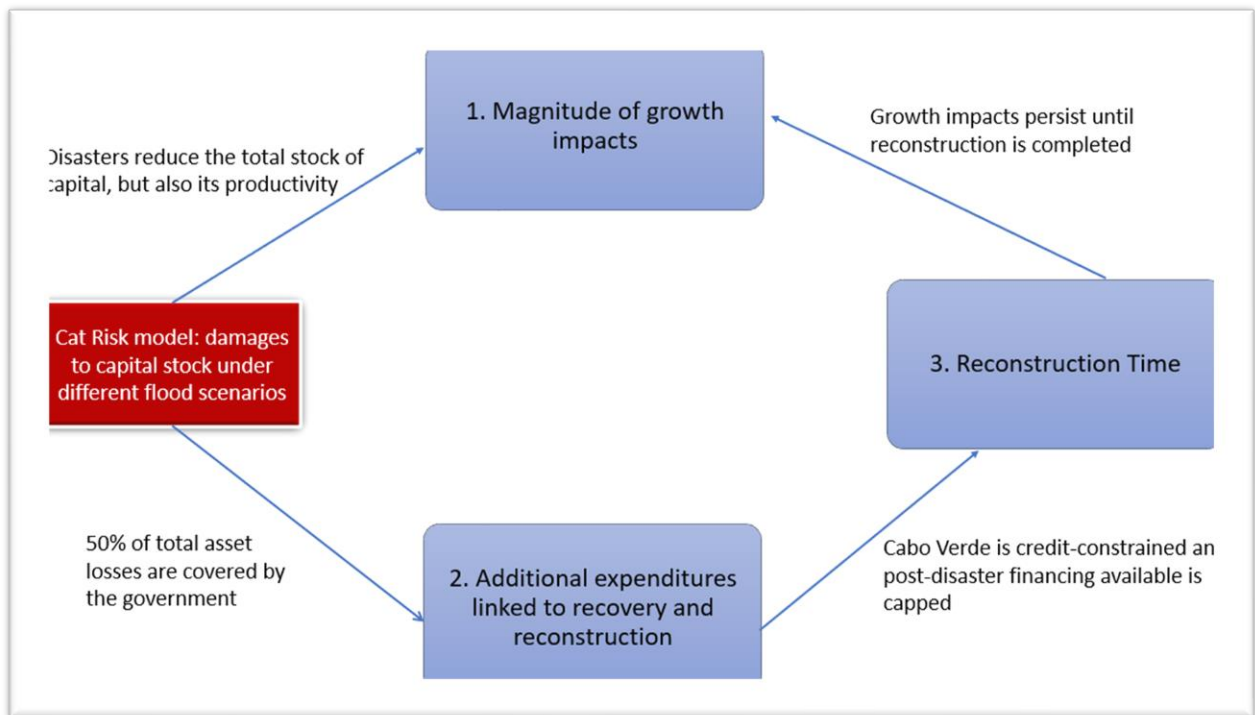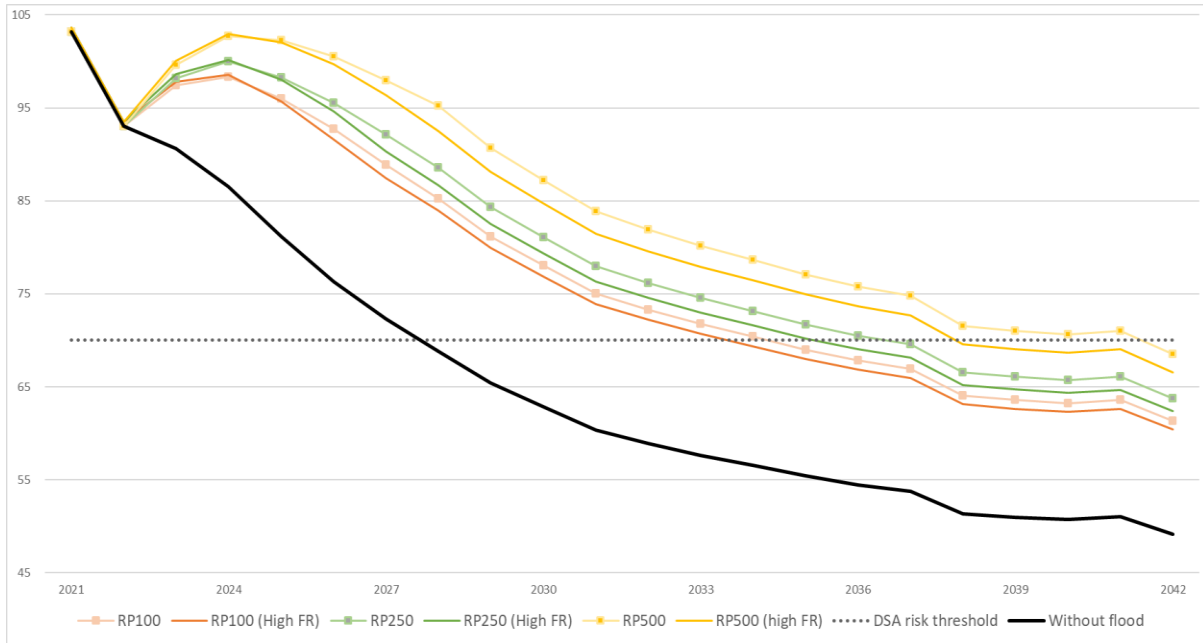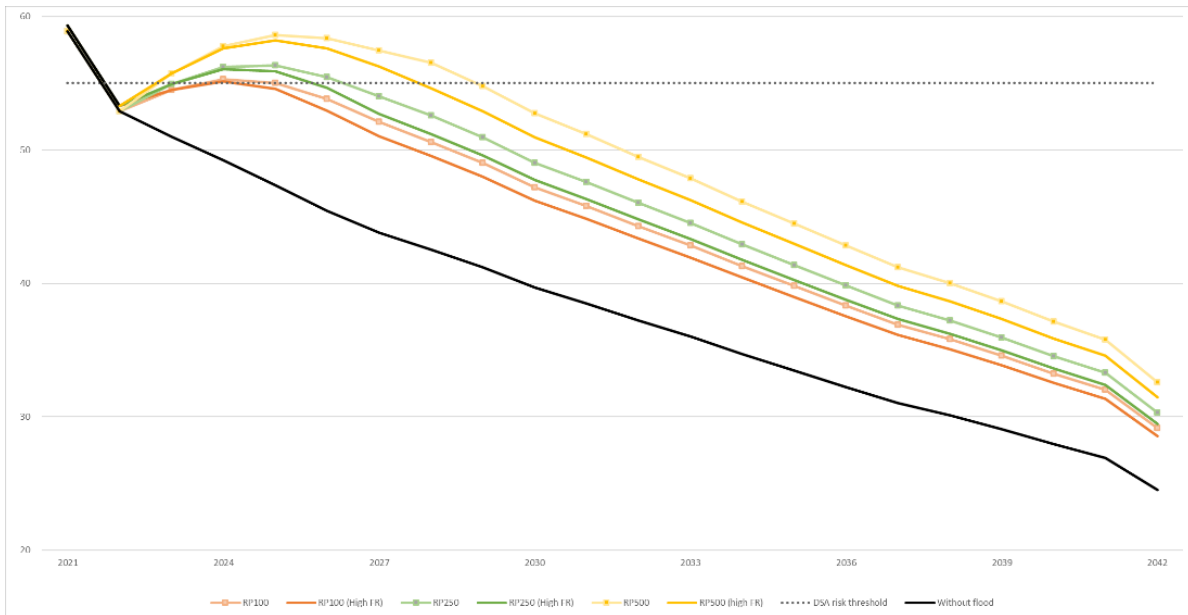
FIGURE A. 5. POTENTIAL EFFECTS OF EXTREME FLOOD ON PUBLIC DEBT TRAJECTORY UNDER THE BASELINE AND THE HIGH FISCAL RESILIENCE (HIGH FR) SCENARIOS (PV OF PUBLIC DEBT AS SHARE OF GDP)

Source: Authors' calculations and IMF-WB DSA.

FIGURE A.6. POTENTIAL EFFECTS OF EXTREME FLOOD ON EXTERNAL DEBT UNDER THE BASELINE AND THE HIGH FISCAL RESILIENCE (HIGH FR) SCENARIOS (PV OF PPG EXTERNAL DEBT-TO-GDP RATIO)

Source: Authors' calculations and IMF-WB DSA.

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