

MALDIVES DEVELOPMENT UPDATE

IN STORMY SEAS



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The Maldives Development Update (MDU) has two main aims. First, it reports on recent developments in the Maldivian economy, and places these in a longer term and global context. Based on these developments, and on policy changes over the period, it updates the outlook for the Maldivian economy. Second, the Update provides a more in-depth examination of selected economic and policy issues, and analysis of medium-term development challenges. It is intended for a wide audience, including policymakers, business leaders, financial market participants, think tanks, non-governmental organizations and the community of analysts and professionals engaged in the Maldives' evolving economy.

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Abbreviations

ASC	Airport Service Charge	OTEC	Ocean Thermal Energy Conversion
ASPIRE	Accelerating Sustainable Private Investments in Renewable Energy	NPL	Non-Performing Loans
BESS	Battery Energy Storage System	PIT	Personal Income Tax
BML	Bank of Maldives	POISED	Preparing Outer Islands for Sustainable Energy Development
BoP	Balance of Payments	PPA	Power Purchasing Agreement
BPT	Business Profit Tax	RED	Renewable Energy Development Fund
CAD	Current Account Deficit	SAP	Strategic Action Plan
CPI	Consumer Price Index	SIDS	Small Island Developing States
ESMAP	Energy Sector Management Assistance Program	SMEs	Small and Medium Enterprises
FDI	Foreign Direct Investment	SOE	State-Owned Enterprise
FRESA	Fund for Renewable Energy System Applications	Solar PV	Solar Photovoltaic
GDP	Gross Domestic Product	SREP	Scaling Up Renewable Energy Program
GoM	Government of Maldives	STELCO	State Electricity Company
GST	Goods and Services Tax	STEM	Science, Technology, Engineering and Math
GWh	Gigawatt hour	STO	State-Trading Organization
IMF	International Monetary Fund	UN	United Nations
IPP	Independent Power Producer	URA	Utility Regulatory Authority
IRENA	International Renewable Energy Agency	USD	United States Dollar
kWh	Kilowatt hour	WDI	World Development Indicators
MEA	Maldives Energy Authority	y-on-y	year-on-year
MIFCO	Maldives Industrial Fisheries Company		
MMA	Maldives Monetary Authority		
MoF	Ministry of Finance		
MTI	Macroeconomics, Trade and Investment		
MVR	Maldivian Rufiyaa		
MW	Megawatts		

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Executive Summary

The Maldivian economy registered robust growth in 2019...

Following three consecutive years of growth above 6 percent, the Maldivian economy kept momentum in 2019. Preliminary estimates indicate that real GDP decelerated slightly to 5.3 percent, from 6.9 percent in the previous year. Tourist arrivals reached a record high of 1.7 million, a 14.7 percent increase from 2018. Strong tourism growth compensated for softer construction activity, which grew by only 3.1 percent as many large infrastructure projects were completed in late 2018. This marked the slowest rate of construction growth since the public investment boom began in 2014.

...although external and fiscal imbalances kept mounting.

Bolstered by strong tourism exports and lower construction-related imports, the current account deficit narrowed to 26.7 percent of GDP from 28.2 percent of GDP in 2018. The large external deficit continued to be financed by foreign direct investment (FDI) and external borrowing. FDI inflows registered a record 15.9 percent of GDP in 2019, mostly focused on the development of tourist resorts. The fiscal deficit also remained elevated at 6.4 percent of GDP, a 1.7 percentage point increase compared to 2018. The widening of the deficit occurred as total spending continued to grow by double digits, outpacing the 6 percent growth of total receipts as the Government collected less General Goods and Services Tax and lower dividends from state-owned enterprises. Public and publicly guaranteed debt remained high at 77.5 percent of GDP at end-2019.

The COVID-19 pandemic has impacted the lives and livelihoods of Maldivians...

The global pandemic caused by the novel coronavirus (COVID-19) has impacted the Maldives' economy more than any other country in South Asia. Although the Government acted quickly to protect lives, barring incoming travelers from affected areas as early as February 3 and closing its borders on March 27, a substantial domestic outbreak commenced on April 15. As this report is being written, nearly 2,000 people have tested positive for COVID-19 and 8 have lost their lives to the disease. The real toll of the pandemic, however, is much higher, with thousands of livelihoods affected by the shutdown of tourism. Tourist arrivals fell by 11.1 and 63.4 percent year-on-year (y-on-y) in February and March respectively and remained at zero for the entire second quarter. Cumulatively, the 65 percent y-on-y fall in tourist arrivals from February-May 2020 exceeds the decline in tourist arrivals experienced in the four months after the 2004 Indian Ocean tsunami. Construction has also been affected, as half the COVID-19 cases affect Bangladeshi nationals, many of whom work in the sector, and as external financing has dried up.

...and highlighted longstanding fragilities in the country's growth model.

The COVID-19 pandemic has exposed the vulnerability of the Maldives' economic model. The Maldives relies on foreign currency inflows from tourism, foreign investment and loans to contemporaneously finance its large current account deficit. While the deficit is likely to narrow in 2020 as lower imports and remittances compensate for lower tourism earnings, the reversal of capital flows has made financing the deficit more challenging. Foreign reserve holdings have declined by 36 percent between December 2019 and May 2020, covering only 2 months of imports. On the fiscal side, total revenues and grants fell by 35 percent in nominal terms in Q1 2020, compared to the same quarter last year, and by 65 percent y-on-y in April. Given the need to allocate more resources to health and disaster management, the Government has slashed non-priority capital and recurrent spending, leading total expenditure to fall by 31.6 percent year-on-year in Q1 2020. Despite further cuts to salaries and wages, which led spending to fall by 63.1 percent in April, the Maldives' financing needs remain large.

The Government has responded to the crisis through fiscal and monetary policy measures...

To buffer the economic and social impact of the crisis, the Government announced a recovery package worth 2.5 percent of GDP comprising financing facilities and loan moratoria for businesses and households. The Government is also providing a monthly “Income Support Allowance” of MVR 5000 to Maldivian citizens who have lost their jobs or suffered pay cuts due to the pandemic. The Government has also provided discounts on utility bills and lowered fuel prices. The Maldives Monetary Authority has reduced the minimum reserve requirements from 10 to 7.5 percent to provide liquidity to the financial system. The MMA has further activated a USD 150 million swap facility with the Reserve Bank of India to enhance its foreign currency holdings and, following a temporary suspension of the Fiscal Responsibility Act, provided USD 179 million in short-term liquidity to the Government.

...but the economic outlook is uncertain...

Despite these measures, the economic impact of the crisis on the Maldives is expected to be profound. Should tourism gradually return in time for the high season in late-2020, real GDP is expected to contract by 13.0 percent in 2020, 18.5 percentage points lower than the pre-COVID-19 baseline. Under this scenario, the fiscal deficit is expected to increase to 14.5 percent of GDP, despite USD 220 million of expenditure cuts and the collection of personal income taxes for the first time in 2020, as both tax and non-tax revenue directly and indirectly linked to tourism plummet. Central government debt, and hence public and publicly guaranteed debt are projected to increase from 62.7 (77.5) percent of GDP at end-2019 to 78.9 (93.9) percent of GDP in 2020. While the current account deficit is expected to narrow to 16.3 percent of GDP in 2020, the availability of external financing for this deficit is uncertain.

...with risks tilted to the downside.

Given its unprecedented nature, the global economic uncertainty associated with the COVID-19 pandemic is exceptional. Should lockdowns persist and prevent tourists from returning to the Maldives in 2020, GDP is expected to contract by 17.5 percent in 2020. In the medium-term, the Maldives are expected to make a slow but steady recovery. The World Bank projects GDP growth in 2021 between 7.9 and 8.5 percent as tourism gradually resumes. Although the global destruction of wealth during the crisis risks dampening demand for the Maldives’ high-end resorts, the country’s unique “one-island one-resort” setup can facilitate social distancing and enhance the country’s ability to recover from the crisis.

Scaling up adoption of renewable energy can benefit the Maldives’ economy, environment and equity.

While Maldivians have enjoyed universal access to electricity since 2008, this has come at a high cost – both to the Government and to the people. Heavy reliance on imported diesel and fragmented island-based grids drive up the costs of electricity generation. Although the Government spends about 1 percent of GDP annually to subsidize electricity, end-user tariffs are among the highest in South Asia. Despite historically low oil prices due to the COVID-19 pandemic, which alleviates some of the pressure on the external and fiscal accounts, financial difficulties in the Maldives’ power sector persist as many firms and households struggle to pay their utility bills. The crisis thus highlights the need to enhance the sector’s financial viability by reducing electricity generation costs. This can be achieved by facilitating private investments in renewable energy, especially solar photovoltaic technology. Fulfilling the Government’s ambition of increasing the renewable energy share to 70 percent of total capacity by 2030 could generate a triple dividend through (i) aggregate diesel import and fuel subsidy savings; (ii) reduced carbon emissions; and (iii) the creation of new and innovative jobs in the renewable energy sector, especially for women and youth. Obstacles to realizing these benefits include high investment costs and space constraints, which require innovative solutions that leverage private sector investment.

A. Recent Economic Developments



1. The Maldivian economy maintained its growth momentum in 2019, but COVID-19 has unleashed a sharp recession

Growth remained robust in 2019 as tourist arrivals hit record highs...

The Maldives' real gross domestic product (GDP) grew by 5.3 percent y-on-y in 2019¹, lower than the rate of 6.9 percent reached in 2018 but in line with the long-term average. This fourth consecutive year of growth above 5.0 percent marked the longest period of stable and high growth in the Maldives since the mid-1990s. Value added from tourism, the main driver of the economy, expanded by an estimated 9.7 percent y-on-y. As new international flights commenced, a record number of new resorts opened² and the number of guesthouses continued to expand, total visitor arrivals reached historic levels of 1.7 million in 2019, 14.7 percent higher than the previous year. Total bednights³ also increased by 12.8 percent y-on-y. Western Europe⁴ and China remained the largest source of tourists, accounting for 23.1 percent and 16.7 percent of all arrivals, but the number of Indian visitors doubled and contributed the most to arrivals growth (Figure 1). This was due to more direct flights and new ferry routes from India, as well as a relaxation in bilateral visa regulations starting March 2019.

...compensating for slower construction growth in the first half of the year.

Buoyant tourism activity partially compensated for a slowdown in construction, the other major driver of growth. Construction activity slowed to its lowest levels since the public investment boom began in 2014, expanding by 3.1 percent from the previous year compared to an average annual growth of 16.8 percent between 2014-2018 (Figure 2). The slowdown occurred largely in the first half of the year as large public infrastructure investments initiated under the previous

¹ Calculated using preliminary quarterly data from Statistics Maldives.

² 19 new resorts opened in 2019, much higher than the 2008-2018 average of 5 resorts a year.

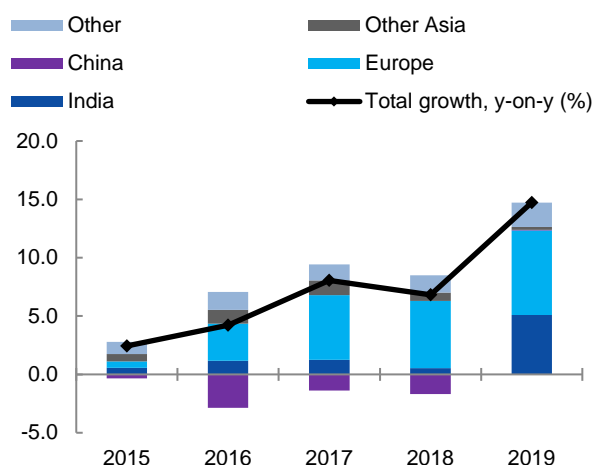
³ Bednights refer to the number of nights per person. For example, two people sharing a room and staying for two nights would generate four bednights.

⁴ This comprises Italy (8 percent), Germany (7.7 percent) and the United Kingdom (7.4 percent). India accounted for 9.7 percent of all arrivals.

administration, such as the Sinamalé bridge, were completed towards the end of 2018. Moreover, the Government ordered a comprehensive review of all construction sites in Malé city following a tragic accident in December 2018⁵ and subsequently amended registration procedures for construction companies, potentially leading to delays in tendering new projects. Import regulations for construction materials were also tightened in June 2019. However, the sector picked up strongly in Q4 as disbursements of the budget for the Public Sector Investment Program rose by 10.5 percent y-on-y.

Figure 1: Tourist arrivals jumped as the number of visitors from India doubled...

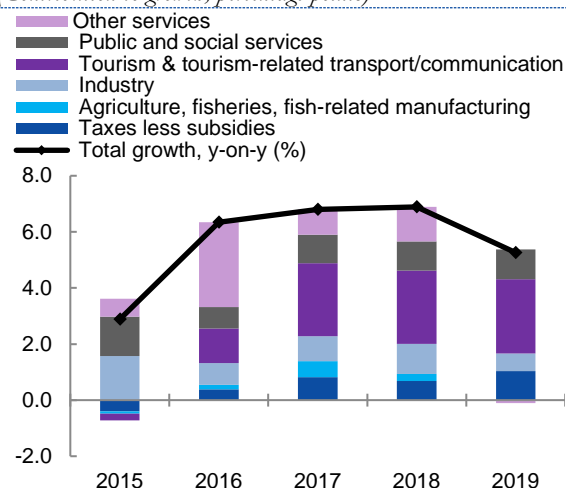
(Contribution to growth, percentage points)



Source: Ministry of Tourism, World Bank staff calculations

Figure 2: ... so growth remained robust even as construction slowed.

(Contribution to growth, percentage points)



Source: Statistics Maldives, World Bank staff calculations

A strong start to 2020 was quickly reversed by COVID-19, which prompted the first shutdown of tourism in the Maldives' history.

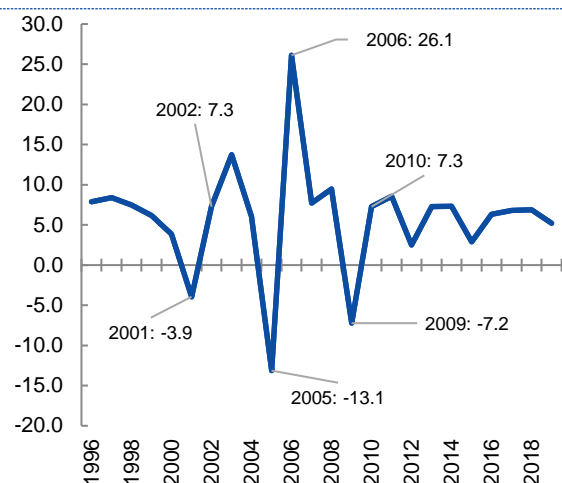
The economy likely slowed dramatically in the first half of 2020 due to the pandemic caused by the novel Coronavirus (COVID-19). Initially, a strong growth in visitors from China by 23.3 percent y-on-y drove total tourist arrivals up by 14.4 percent⁶ in January; however, tourist arrivals dropped by 11.1 percent in February as the Government prohibited arrivals from China starting February 4. As entry restrictions intensified, tourist arrivals plummeted 63.4 percent y-on-y in March. Tourist arrivals further dropped to zero in Q2 2020 as the Maldives closed its borders to incoming tourists indefinitely for the first time in history on March 27. While economic growth rebounded fairly quickly from previous shocks such as the September 2001 terrorist attacks, the 2008-2009 Global Financial Crisis and the December 2004 Indian Ocean tsunami (Figure 3), this time may be different as the decline in tourist arrivals following COVID-19 has been far greater than in the aftermath of previous events (Figure 4). Tourist arrivals have fallen by 65 percent from February to May 2020 compared to the same period last year, a larger fall than the 53 percent decline experienced in the four months after the Indian Ocean tsunami (see Box 1).

⁵ See [Sun Online International \(2018\)](#).

⁶ Arrivals data from Ministry of Tourism, as reported in MMA monthly statistics, April 2020.

Figure 3: The Maldives has weathered previous shocks relatively well...

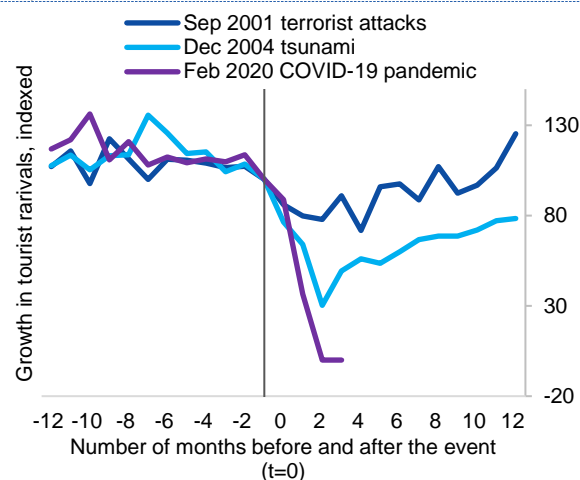
(Real GDP growth, y-on-y, percent)



Source: Statistics Maldives, World Bank staff calculations

Figure 4: ...but this time is likely to be different as the fall in tourist arrivals is far greater than before.

(Growth in tourist arrivals, y-on-y, month before event indexed to 100)



Source: Ministry of Tourism, World Bank staff calculations

Note: X-axis represents the number of months before and after the event, which takes place in period t=0.

Box 1: The Maldives recovered relatively quickly from the 2004 Indian Ocean tsunami, but COVID-19 may be different

A small, low-lying country with a high degree of economic concentration in a single activity, the Maldives is extremely vulnerable to a range of external shocks. The largest of these in recent history is the December 2004 Indian Ocean tsunami, which claimed an estimated 300,000 casualties in 14 countries. In the Maldives, the tsunami led to at least 82 fatalities, 1300 injuries, the displacement of 7 percent of the population and affected the livelihoods of thousands more. The physical damages were also severe, amounting to USD 470 million or 62 percent of the country's GDP at the time, not including the cost of environmental damage and substantial soil erosion that affected agricultural activity.

The tsunami resulted in the largest recorded yearly drop in GDP in the Maldives' history. Real GDP growth contracted by 13.1 percent in 2005, as tourist arrivals fell by 35.9 percent and led to an equivalent drop in real tourism output. Nevertheless, the economy rebounded strongly the following year as tourists steadily returned and reconstruction efforts occurred. The number of tourist arrivals had returned to pre-tsunami levels by January 2006 and grew by 52.3 percent on average that year. As a result, real GDP growth rebounded by 26.1 percent in 2006.

The COVID-19 pandemic is a different, but at least equally as devastating kind of shock. On the one hand, there has been no destruction of the physical capital stock and hence no need for reconstruction financing. However, while the tsunami was strictly a supply-side shock, COVID-19 has induced a much deeper recession by affecting aggregate supply and demand simultaneously in both advanced and emerging market economies. Rebuilding after this crisis will hence require different strategies and policy responses, while continuing to invest in disaster risk and environmental resilience.

Source: Authors based on World Bank (2006)

COVID-19 has also adversely affected the construction sector, which relies on

Construction activity has also been drastically affected by the pandemic – initially by disruptions in procuring imports of machinery, equipment and materials from Asia, and subsequently by the spread of the disease among foreign nationals employed in the sector⁷. The Government has repatriated over a thousand workers and relocated others to try and limit the spread of the disease. Projects

⁷ The Maldives National Association of Construction Industry estimates that the construction sector employs roughly 7,000 locals and 50,000 foreign workers. Source: <https://edition.mv/news/16655>

foreign labor and financing...

have also started to come to a halt across the country due to logistical challenges in transporting materials⁸. Some construction activity to build quarantine facilities and workers' quarters has taken place, but these projects are relatively small. The industry association estimates losses of at least USD 40 million in Q1 2020⁹.

...as well as fisheries, an important source of livelihood outside the capital.

The fisheries sector, a major employer especially for Maldivian men residing outside the Malé region¹⁰, has been impacted by the pandemic. Exports of fresh, chilled or frozen tuna, which account for 70 percent of all domestic goods exports, fell by 60 percent in March (see section 3 of Part A) due to weak demand and logistical difficulties in transporting shipments to Thailand. These problems are not unique to the Maldives but are particularly constraining given its limited storage and canning capacities. However, as European markets began to reopen in mid-May, the sector showed incipient signs of recovery¹¹.

COVID-19 has temporarily reversed progress on poverty reduction...

The Maldives have made significant progress in reducing poverty in recent years, with last available estimates suggesting that only 6.6 percent of the population consumed less than the international upper middle-income poverty line of USD 5.50 per day in 2016. The shock to tourism as part of COVID-19 adversely affects employment and household earnings, as one-third of adult males and a quarter of females are engaged in tourism-related jobs. Lower-income households that depend on fisheries are also affected as exports of raw fish have declined, following weaker demand due to the pandemic. As a result, the poverty rate is expected to increase as the negative shock to consumption leads households that had been close to the poverty line prior to the pandemic to fall below. A larger impact is expected in the atolls, as there is greater dependence on fisheries and the poverty was already higher prior to the pandemic.

... and highlights structural challenges in the Maldivian model of growth and development.

Like the 2004 tsunami, the COVID-19 pandemic draws attention to longstanding fragilities in the Maldives' growth model. While efforts have been made to diversify away from high-end resorts – for example, by allowing locals to operate guesthouses – economic activity remains largely entrenched in tourism. The other main driver of growth, construction, is heavily reliant on foreign labor and external sources of financing. These challenges, also experienced by other Small Island Developing States (SIDS), make the Maldives particularly vulnerable to exogenous shocks such as COVID-19. Although the Government has taken proactive and important short-term steps to contain the spread of the pandemic (see Box 2), strategies to enhance macro-fiscal resilience are needed in the medium and long term.

Box 2: Combating COVID-19: what has the Government of the Maldives done?

The Maldives took prompt action to tackle COVID-19 well before the index case was confirmed on March 7. Thermal screening of passengers had begun at Velana International Airport on January 22, while foreign passengers travelling from China had been barred from entering the country starting February 3. On March 12, with only 7 confirmed cases, the GoM declared a state of emergency, barring visitors from 10 countries, closing schools and prohibiting travel between resort islands and local islands. Finally, on March 27, the Government took the historic decision of closing its borders to foreign tourists, shutting down two-thirds of its economy. These public health and physical distancing measures have only intensified since the first locally transmitted case was confirmed on April 16. Virtually all inter-island travel and public gatherings greater than 3 persons were banned nationwide and Greater Malé was under

⁸ Source: MNACI, as reported in the International Federation of Asian and Western Pacific Contractors' Association (2020).

⁹ Source: <https://edition.mv/news/16655>

¹⁰ According to the 2014 Census, about 13 percent of Maldivian men are employed in the fisheries sector, and this is the most important source of jobs for men in inhabited islands outside Malé.

¹¹ Prices of frozen yellowfin tuna rose to USD 3.88 per kg in European markets from USD 1.62 pre-pandemic. Source: Maldives Seafood Processors and Exporters Association.

lockdown for nearly two months. These measures have begun to be phased out starting May 28, but in a gradual and cautious manner over four weeks.

The Government has taken steps to reprioritize public expenditures so that it can spend more on health and relief measures to households and businesses. On March 18, the Ministry of Finance announced a relief package of MVR 2.5 billion (USD 65 million) or about 2.9 percent of GDP comprising expenditure cuts in non-priority areas and special financing for fisheries and tourism. Student, housing and SME loans were also officially deferred by six months, and utility bills were discounted by 40 percent in April and May. More recently, in May, salaries of public sector employees earning more than MVR20,000 (USD 1290) a month were slashed by 20-35 percent. Such measures are intended to free up resources for pressing health and social welfare needs. The Income Support Allowance scheme will provide MVR5,000 per month to Maldivian workers and freelancers who have been furloughed, retrenched, or suffered pay cuts as a result of the pandemic. So far, the Government has paid out MVR 1.9 million (USD 12,337) in income support to nearly 500 individuals registered with its Jobs Center portal. The Government has also increased spending on the Aasandha health insurance scheme, exempted medical products from import duties and ramped up COVID-19 testing significantly in the Greater Malé region.

These policies are largely in line with the immediate priority to protect lives and incomes of Maldivians. Moving forward, the Government will need to take further measures to ensure a strong economic recovery and build resilience to future shocks. The Government's plan to issue guidelines for a 'new normal' and 'safe tourism' are some examples of how it can help firms reopen in a staggered, but steady manner. Another could be to prioritize SME participation in government procurement of goods and services. The Government will also need to work with the private sector to establish and enforce strict hygiene standards and invest in worker training to meet these standards, especially in tourism and construction. In the longer term, the COVID-19 crisis offers the Maldives an opportunity to rethink its growth and development model, finding ways to reinvent and reorient itself towards a more digital economy, while remaining a coveted tourist destination.

Source: Authors based on [Ministry of Finance \(2020a\)](#) and various news articles

2. Price levels remain stable in the wake of the COVID-19 pandemic

Overall inflation remained low in 2019.

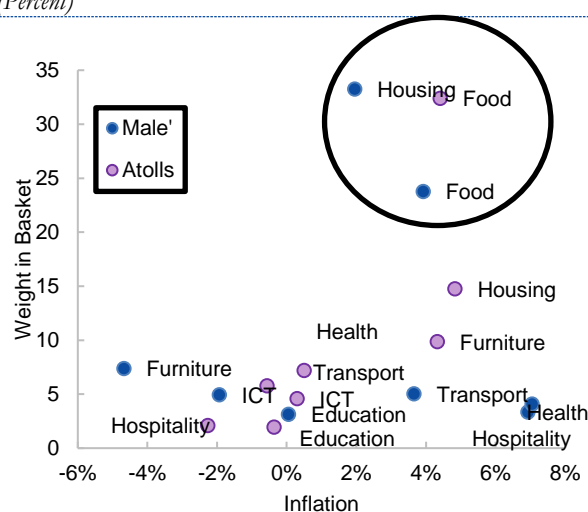
Average inflation for 2019 was low and stood at 0.2 percent, following a deflationary year 2018 when prices decreased by 0.1 percent. The headline inflation rate, however, masks important differences between the capital Malé and the other atolls: while average inflation in the capital in 2019 stood at 1.3 percent, atolls experienced an average decline in prices of 0.8 percent due to a slower expansion of rent prices and demand. In 2019 there were two main drivers of price growth (Figure 5). First, food and beverages, most of which are imported, experienced price increases of about 4 percent both in Malé and in the atolls. Second expenditure on housing and fuel in Malé, including rent, utilities and gas, remained a key driver of prices, increasing by an average of 2 percent throughout 2019.

Measures taken to alleviate the effects of the COVID-19 crisis have led to an overall fall in prices.

Price levels have remained unchanged since the onset of the COVID-19 crisis (Figure 6). This follows both a deceleration in demand and policy measures that reduced prices. Among the latter, the Government has passed on oil price savings to consumers and has provided free water since the beginning of the crisis. Similarly, the free provision of internet and communication services by the main carriers have led to a 10.2 percent year-on-year price drop for information and communication services in March 2020. The Government is also providing a 40 percent discount for electricity bills in April and May, which is expected to have further decelerated inflation. Food price growth remained stable at 3.6 percent in March.

Figure 5: Food products and housing in Malé were the key inflation drivers in 2019

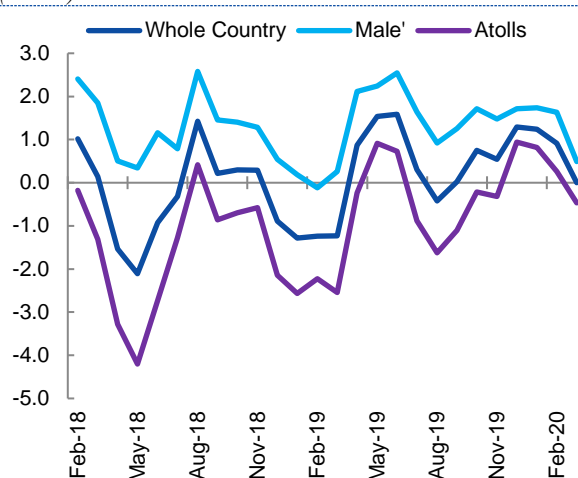
(Percent)



Source: MMA, World Bank staff calculations

Figure 6: Inflation remained moderate throughout 2019, with prices dropping after COVID-19

(Percent)



Source: MMA, World Bank staff calculations

3. The Maldives Monetary Authority has taken initial measures to provide liquidity to the private and public sector to address the crisis

The MMA's policy throughout 2019 supported credit growth to the private sector while maintaining a steady ratio of non-performing loans.

Throughout 2019, the MMA's key policy levers – the overnight deposit and borrowing rates and the minimum reserve requirement – remained unchanged at 1.5, 10 and 10 percent, respectively. Credit provision to the private sector increased by 7.5 percent compared to 2018, with most loans provided to the tourism and the construction sectors. The share of non-performing loans (NPLs) averaged 9.5 percent throughout 2019, 0.7 percentage points higher than in 2018. Risks were mitigated through the establishment of earmarked provisions to cover NPL-related losses. In 2019, these provisions were sufficient to cover 87 percent of the NPL portfolio.¹² Banks' and non-bank financial companies' total capital holdings accounted for 47 and 44 percent of risk-weighted assets, which significantly exceeds the minimum requirement of 12 percent and thus provided adequate buffer to the sector.

Monetary aggregates reflect the severity of COVID-19's economic impact...

The global COVID-19 pandemic has imposed a significant shock on the Maldives. The resulting slowdown in economic activity is reflected in an abrupt deceleration of money growth starting in February 2020: while broad money in the economy – including cash, highly liquid assets and transferable deposits – grew at an average annualized rate of 9.8 percent in the last quarter of 2019, it had turned negative by February 2020 (Figure 7). This slowdown primarily reflects a reduction in foreign currency earnings by Maldivian firms and individuals, adversely affecting foreign currency deposits in the banking sector and ultimately slowing down foreign asset accumulation of other depository corporations.

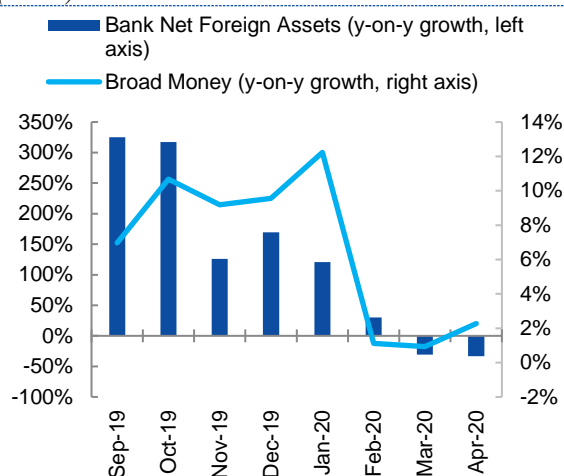
...which has led the MMA to relax minimum reserve requirements.

In response to the crisis, the MMA has reduced the minimum reserve requirement to 7.5 percent in late March 2020, from a level of 10 percent at which it had been held constant since August 2015, aiming to enhance banks' liquidity and their ability to provide credit to the private sector. Data available to date does not yet show a positive effect of this measure and instead suggests a modest increase of foreign bank deposits with the MMA in April 2020 (Figure 8).

¹² MMA, 2020.

Figure 7: COVID-19 has reduced money in circulation and banks' foreign asset holdings.

(Percent)

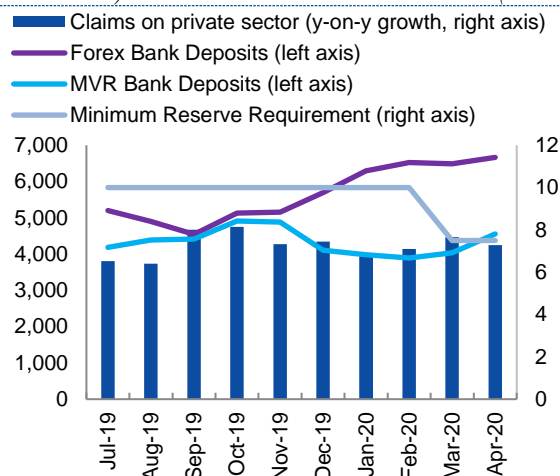


Source: MMA, World Bank staff calculations

Figure 8: MMA has reduced minimum reserve requirements to provide liquidity.

(Million MVR)

(Percent)



Source: MMA, World Bank staff calculations

Following increased pressure on the exchange rate, the activation of a Swap Facility with the Reserve Bank of India has provided a short-term boost to gross reserves...

The USD-MVR exchange rate is actively managed by the MMA through foreign exchange market interventions. Capital outflows following the global crisis have exerted downward pressure on the MVR, necessitating increased market interventions (Figure 8). To facilitate this, the Maldives activated a USD 150 million swap facility with the Reserve Bank of India in April 2020. This facility was part of an economic agreement between India and the Maldives which was signed in July 2019 and contains a total potential swap volume of USD 400 million. The activation of the swap line has provided a temporary boost to reserves (Figure 9). Usable reserves, which net out short-term liabilities of the MMA, amounted to USD 230 million in April 2020, covering 2 months of merchandise imports.

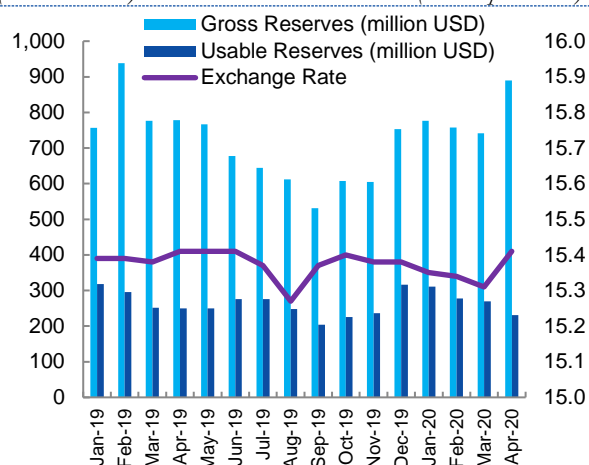
...and the MMA has provided significant short-term financing to the Government of the Maldives since the onset of the crisis.

Throughout 2019, the MMA has consistently reduced its holding of Government Bonds while maintaining a roughly constant amount of Government T-Bills on the balance sheet. Since March 2020, the MMA has provided short-term advances to the government to assist in the financing for necessary expenditures. This occurred after the parliament had temporarily suspended the Fiscal Responsibility Act, allowing the Government to borrow up to approximately USD 270 million from the MMA¹³ (Figure 10). The amount of such advances had increased to USD 179 million in May 2020. These advances are on a direct loan basis and thus provide liquidity to the public sector.

¹³ [Ministry of Finance Maldives \(2020b\)](#).

Figure 9: The activation of a swap facility with the RBI has boosted gross reserves.

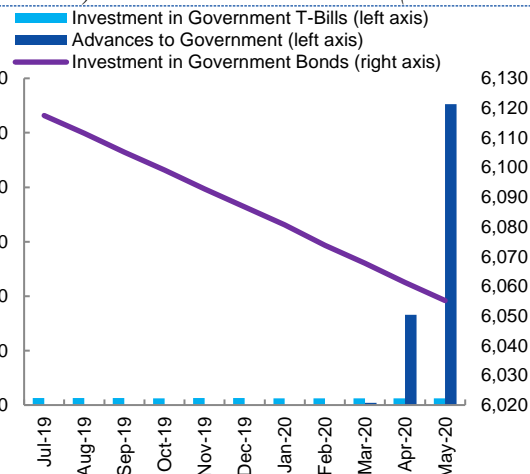
(Million USD) (MVR per USD)



Source: MMA, World Bank staff calculations

Figure 10: The MMA has increased advances to the government since the beginning of the crisis.

(Million MVR) (Million MVR)



Source: MMA, World Bank staff calculations

4. COVID-19 has reduced foreign currency inflows and put pressure on foreign reserves, but non-tourism exports had already underperformed in 2019

The current account deficit narrowed as a share of GDP in 2019....

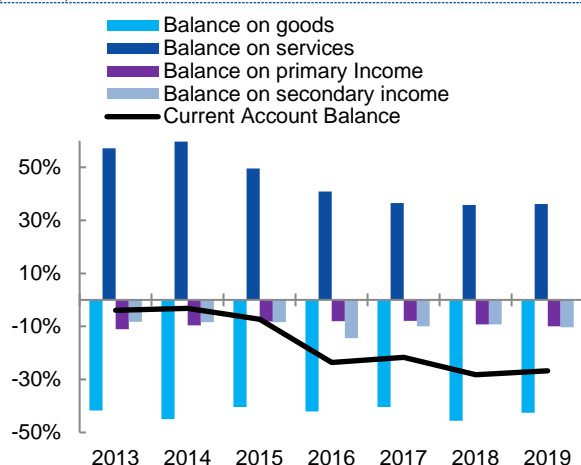
The Maldives' tourism-driven and foreign-financing-fueled growth model is reflected in a balance of payment in which substantial current account deficits are financed by foreign direct investment and external borrowing. The current account deficit stood at 26.7 percent of GDP in 2019 compared to 28.2 percent in 2018 (Figure 11), driven in about equal shares by a trade deficit, remittance outflows and dividend payments to foreign entities. While the trade deficit narrowed in 2019, primary and secondary income outflows widened as dividend and remittance outflows increased by 13 and 12 percent in nominal terms compared to 2018, respectively.

...as growing tourism exports and slowing construction imports narrowed the trade deficit...

The Maldives' trade balance has traditionally displayed a dichotomy. On the one hand, substantial tourism exports generate large surplus earnings in the service sector. In 2019, service exports accounted for over USD 3 billion, or 60.2 percent of GDP. Travel receipts grew by 4.3 percent y-on-y, accounting for over 80 percent of total export growth in 2019. On the other hand, large scale infrastructure investments have temporarily elevated material and machinery imports, resulting in a negative merchandise trade balance (Figure 12). In 2019, imports for construction contracted by 9 percent, with multiple mega-projects nearing completion. Driven by this, the aggregate import bill narrowed to 73 percent of GDP, from 77 percent in 2018. As a result, the trade deficit decreased from 9.7 to 6.5 percent of GDP in 2019.

Figure 11: The current account deficit narrowed in 2019...

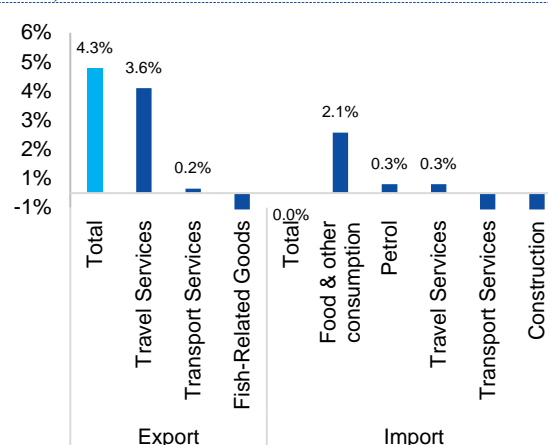
(Percent)



Source: MMA, World Bank staff calculations

Figure 12: ...due to strong growth in tourism exports and slowing construction imports.

(Percent)



Source: MMA, World Bank staff calculations

...even though fisheries export earnings declined by 13 percent.

Fisheries are an important source of employment and merchandise export earnings. In 2019, export earnings from fisheries declined by 13 percent, with a particularly large decline in the last quarter (Figure 13). This was driven by skipjack tuna following a slump in global demand—in part due to oversupply in Thailand, one of the largest fish processors – that eroded prices and opportunities for exports, resulting in declining values and volumes. In addition, limited capacity at the Maldives Industrial Fisheries Cooperation (MIFCO), a subsidiary of the State Trading Organization (STO) that handles the processing and canning of the catch, has depressed export earnings for many years, exacerbating the impact of the negative demand shock.

The COVID-19 outbreak led to a collapse of trade, practically eliminating tourism exports,...

The COVID-19 pandemic has posed an unprecedented and severe shock to services exports, which mainly comprises travel and tourism. Tourist arrivals and bed-nights had declined by 64 and 44 percent respectively in March 2020, before the ban on visitors reduced these figures to zero in April. While no official data on tourism receipts for these months is available, estimates suggest that they collapsed to approximately USD 150 million in March, 58 percent less than a year prior, before dropping to zero in April (Figure 14).

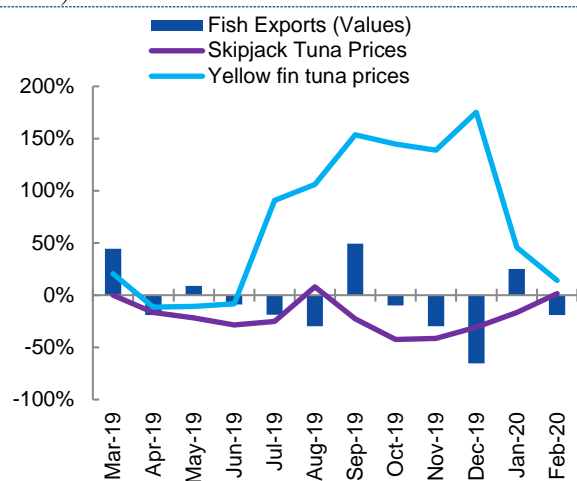
...substantially impacting global demand for fish exports,...

Preliminary data from the Maldives Customs Service illustrates the impact of the crisis on merchandise trade (Figure 14). Total domestic merchandise exports averaged USD 13 million per month in March and April 2020, 36 percent lower than the same period last year. Fresh fish exports were especially hard hit by a decline in global demand as restaurants closed, and frozen fish exports suffered from transport issues, with many international flights grounded. By contrast, global demand for canned fish picked up as consumers opted for less perishable goods due to wide-ranging mobility restrictions, leading to a 75 percent increase in exports between January and March 2020 before returning to levels comparable to January in April.¹⁴

¹⁴ See [FAO \(2020\)](#) for a discussion of changes to international fish demand patterns.

Figure 13: Fish exports declined in 2019 due to slowing global skipjack demand and associated price drops.

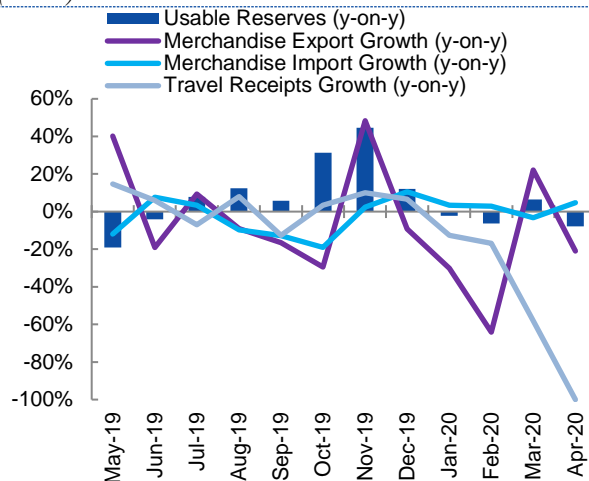
(Percent)



Source: Maldives Customs Service and MMA

Figure 14: COVID-19 resulted in a rapid decline in exports and imports, and opened up an external financing gap.

(Percent)



Source: Maldives Customs Service and MMA

...but also reducing the import bill as well as dividend and remittance outflows.

The slowdown in tourism also impacted the demand for supplies such as food and petroleum. At the same time, a drop in global oil prices from an average of USD 64 per barrel in 2019 to USD 23 in April 2020 substantially reduced the Maldives' oil import bill.¹⁵ As a result, imports decreased across the board to a level of USD 116 million in April 2020, 54 percent less than the previous year. With the deceleration in merchandise imports outpacing the slowdown in fisheries exports, the merchandise trade deficit more than halved to USD 100 million in April 2020. Remittances and dividend outflows are expected to decelerate as well, following income reductions for many of the Maldives' approximately 100,000 migrant workers, on-going repatriation efforts and losses in the tourism sector.¹⁶

In 2019, strong foreign direct investments financed the current account deficit...

In 2019, the Maldives attracted FDI of USD 900 billion, or 15.9 percent of GDP. This record number – a year-on-year growth of 55 percent – was driven by substantial new investments in resorts and accounts for 75 percent of the total financial account surplus. This investment boom was consistent with rapid growth in tourism demand throughout 2019, which attracted foreign investors from Europe and the United States in addition to investments from Asia.

...whereas other investments and portfolio flows narrowed compared to 2018.

Other investments, which include foreign borrowing and central bank transactions, declined by 72 percent in nominal terms in 2019. Borrowing abroad by the government and the private sector also declined compared to 2018, when large sovereign bond issuances and the activation of a USD 100 million swap facility with the Reserve Bank of India resulted in a spike in the financial account. The repayment of the swap facility further reduced net other investments. Portfolio investments recorded a marginal net outflow of USD 2 million in 2019. Considering net errors and omissions of USD 323 million, the BoP recorded a surplus of USD 42 million in 2019. The COVID-19 pandemic has led to a decline in reserves in early 2020, with usable reserves standing at USD 201 million in May 2020, 19 percent lower than a year prior and 36 percent below the level of December 2020 before the COVID-19 pandemic.

¹⁵ The oil price figures refer to Brent crude oil. See [World Bank \(2020\)](#).

¹⁶ Data based on Maldives immigration.

Table 1: Balance of Payments

(in Million USD)	2017	2018	2019
1. Current and Capital Account Balance	-1,027	-1,503	-1,499
Balance on goods and services	-182	-518	-362
Balance on primary Income	-376	-492	-558
Balance on secondary income	-469	-493	-579
o/w Remittances	-475	-532	-594
2. Financial Account Balance	910	1,835	1,218
Direct investment	458	576	891
Portfolio investment	479	103	-2
Other investment	-27	1,156	329
3. Net errors & omissions	237	-207	323
Overall balance (1+2+3)	120	125	42
Reserves	587	712	753
(in percent of GDP)	2017	2018	2019
1. Current and Capital Account Balance	-21.7	-28.2	-26.7
Balance on goods and services	-3.9	-9.7	-6.4
Balance on primary Income	-7.9	-9.2	-9.9
Balance on secondary income	-9.9	-9.3	-10.3
o/w Remittances	-10.0	-10.0	-10.6
2. Financial Account Balance	19.2	34.5	21.7
Direct investment	9.7	10.8	15.9
Portfolio investment	10.1	1.9	0.0
Other investment	-0.6	21.7	5.9
3. Net errors & omission	5.0	-3.9	5.7
Overall balance (1+2+3)	2.5	2.4	0.7
Reserves (in months of imports)	2.0	2.1	2.2

Source: World Bank staff calculations using MMA data.

Note: 2019 nominal GDP using World Bank staff estimates.

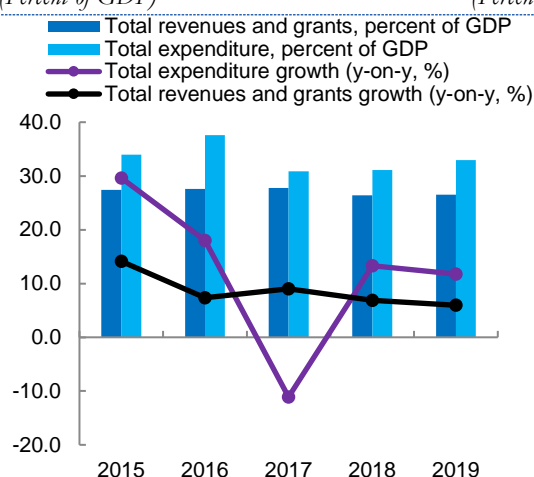
5. The fiscal deficit widened in 2019, reducing fiscal space prior to the pandemic

Fiscal vulnerabilities were already mounting before the COVID-19 shock.

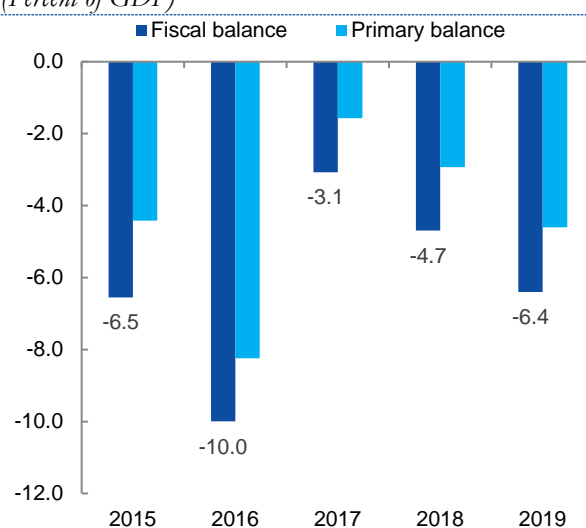
The overall trend of expansionary fiscal policy, high debt and deficits in the Maldives continued in 2019. Total expenditure grew by 11.7 percent y-on-y in nominal terms, lower than the 13.3 percent in 2018 (Figure 15). Spending growth kept momentum as the Government tried to deliver on electoral pledges¹⁷ made prior to the November 2018 election. Meanwhile, total revenues and grants only increased by 6.0 percent y-on-y, lower than in 2018. As a result, the fiscal deficit widened to an estimated 6.4 percent of GDP in 2019 from 4.7 percent of GDP¹⁸ in 2018 (Figure 16). The primary deficit also increased to an estimated 4.6 percent of GDP to 2.9 percent previously. Total public and publicly guaranteed debt also continued to increase, standing at an estimated 77.5 percent of GDP as of end-December 2019.

¹⁷ These include reducing electricity prices, eliminating undergraduate tuition fees and expanding public housing.

¹⁸ The denominator refers to World Bank estimates of nominal GDP in 2019, as full year GDP data for 2019 has not been officially released by Statistics Maldives.

Figure 15: Spending growth outpaced revenues...
(Percent of GDP)

Source: Ministry of Finance, World Bank staff calculations

Figure 16: ...leading the fiscal deficit to widen.
(Percent of GDP)

Source: Ministry of Finance, World Bank staff calculations

Revenues grew at their slowest pace in five years as SOE dividends and GST collections fell, and as T-GST underperformed...

Total revenues excluding grants amounted to USD 1.4 billion in 2019 – 2.4 percent higher than in 2018, but much lower than recent average growth of 8.7 percent. Lower state-owned enterprise (SOE) dividends¹⁹, which fell by 35 percent compared to the previous year, presented a key drag on revenues and resulted in total non-tax revenues to detract 0.9 percentage points from overall revenue growth (Figure 17). The revised 2019 budget had projected more than triple the amount received from SOEs, indicating over-optimistic forecasts of liquidity²⁰. In addition, lower collections of the General Goods and Services tax due to slower construction activity detracted 0.3 percentage points from overall revenue growth. Even tourism GST (T-GST) underperformed, increasing by 2.5 percent y-on-y (compared to 13.9 percent in 2018) despite the record number of tourists. This potentially indicates some underreporting or under-collection of T-GST, possibly due to the use of online booking companies located offshore²¹. Airport service charges, for example, increased by 13.4 percent y-on-y, more in line with arrivals growth. Import duties, which account for a fifth of tax revenues, decelerated to 9.3 percent y-on-y from 11.5 percent in 2018, in line with lower merchandise imports.

...and plunged further in Q1 2020 as tourist activity dwindled to zero.

The closure of tourism due to COVID-19 has triggered an unprecedented shortfall in state revenues. Total revenues excluding grants fell by 35 percent y-on-y in nominal terms in Q1 2020 (Figure 18). Non-tax revenues (specifically rent from resorts, airport service charges and airport development fees) as well as tourist GST revenues contributed the most to the decline, in tandem with the fall in tourist arrivals throughout the quarter. April data showed even more severe declines across the board, with only an estimated USD 42 million²² in total revenues collected – a drop of 64.6 percent compared to the same period last year. While this plunge was largely driven by revenues directly related to tourism, virtually all sources of revenue experienced large declines in April²³ as domestic activity came to a halt.

¹⁹ This was potentially due to large decreases in the net profits of the Maldives Integrated Tourism Development Corporation (MITDC) and the Maldives Transport and Construction Company (MTCC) in 2018, according to quarterly reports.

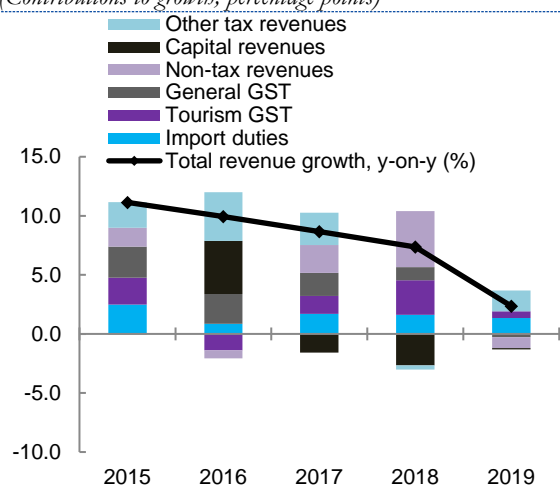
²⁰ SOEs are required to pay 60 percent of their previous year's net profits in dividends.

²¹ See IMF (2019) for further discussion.

²² Based on MIRA monthly data and MOF weekly fiscal data.

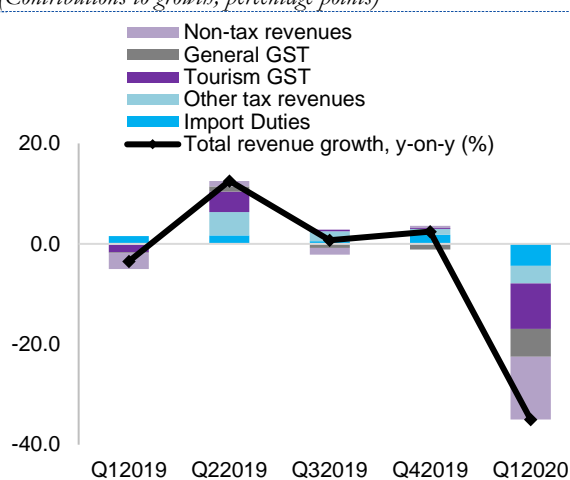
²³ The only exception was rent on resorts, which fell 46.1 percent y-on-y.

Figure 17: In 2019, non-tax revenues and GST collections dragged down growth in state revenues
(Contributions to growth, percentage points)



Source: Ministry of Finance, World Bank staff calculations

Figure 18: Both tax and non-tax sources of revenue have plummeted in Q1 2020
(Contributions to growth, percentage points)



Source: Ministry of Finance, World Bank staff calculations

Total spending continued to grow by double digits in 2019, but spending on PSIP fell substantially.

The Government spent USD 1.85 billion in 2019, 11.7 percent higher than in the previous year. Growth was mostly driven by spending on losses and write-offs²⁴, which contributed 3.7 percentage points to overall revenue growth, and by spending on goods and services²⁵, which contributed 2.7 percentage points (Figure 19). Grants, contributions and subsidies – traditionally a major driver of spending growth – decelerated as spending on the Aasandha health insurance scheme fell by 17.5 percent y-on-y; however, this was mostly due to the payment of arrears in 2018 (and hence a high base) rather than due to cost savings. Expenditures on salaries, traditionally a major driver of growth, accelerated slightly from 7.8 to 8.5 percent y-on-y, but was overall contained. Total capital spending grew at a more moderate rate of 4.0 percent y-on-y in 2019²⁶, contributing 1.2 pp to overall growth. The increase in capital spending was mostly due to higher investment outlays, which jumped 11.9 percent mostly due to capital injections to SOEs. However, spending on the Public Sector Investment Program (PSIP) decreased by 26 percent y-on-y, the largest annual drop since its massive expansion in 2016. Lower spending on PSIP also contributed to the deceleration in construction activity (see Part B).

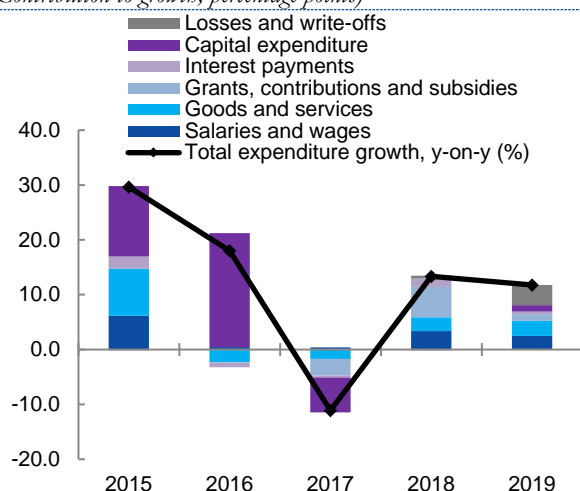
²⁴ Ministry of Finance (2020c) reviews these in detail on page 53. The Government paid USD 68 million to several companies for unlawful termination of contracts by the previous administration, notably Noomadi Resorts (USD55 million).

²⁵ A large contributor was medical consumables procured in relation to the opening of Dharumavantha Hospital. See Ministry of Finance (2020c).

²⁶ Total capital spending grew 16.9 percent annually on average between 2015-2018.

Figure 19: Spending continued to increase by double digits in 2019, despite lower spending on PSIP

(Contribution to growth, percentage points)

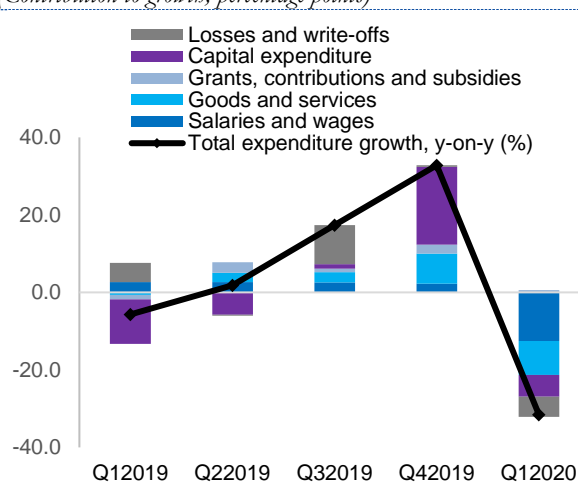


Source: Ministry of Finance, staff calculations

Note: Goods and services refers to operational and administrative expenses excluding grants, contributions and subsidies.

Figure 20: COVID-19 has led the Government to cut recurrent and capital spending in Q12020

(Contribution to growth, percentage points)



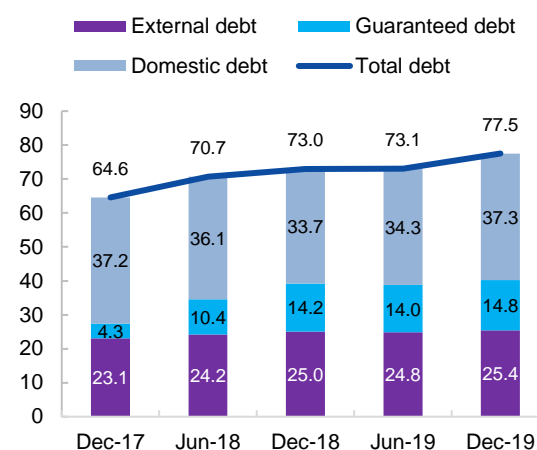
Source: Ministry of Finance, staff calculations

Note: Goods and services refers to operational and administrative expenses excluding grants, contributions and subsidies.

Debt continued to increase in 2019, though by less than in the previous year...

Total public and publicly guaranteed debt stood at 77.5 percent of GDP in December 2019. Debt-to-GDP grew by 5.5 percentage points of GDP compared to end-2018, lower than the previous year's increase of 8 percentage points. Most of this was due to an increase in domestic central government debt, which rose to 37.3 percent of GDP. External and guaranteed debt accounted for 25.4 and 14.8 percent of GDP. Guaranteed debt remains high due to a swathe of non-concessional loans signed in 2017-2018 for housing, transport and water and sanitation infrastructure.

Figure 21: The debt ratio continued to rise, but the increase was mostly domestic-related



Source: Ministry of Finance, World Bank staff calculations

...but the Government urgently needs new sources of financing.

The Government had planned several reforms to increase revenue collection in 2020, notably the introduction of a Personal Income Tax which was gazetted in December 2019 (see Box 3). While such efforts are commendable and continue to be important in the medium-term, they are likely to make little impact given the size of financing needs created by the pandemic. To compensate for the revenue shortfall, the Government is attempting to raise external financing of over USD500 million²⁷. To date, the Government has received USD 28.9 million in budget support loans from the IMF Rapid Credit Facility and USD 30 million in COVID-19 related support from the World Bank. The financing needs are immense given the highly uncertain outlook.

²⁷ According to [Ministry of Finance \(2020d\)](#), the Government expects to raise approximately USD 273 million and intends to issue a USD300 million bond/sukuk in the coming months. It has already secured USD 296 million in external financing.

Box 3: Prior to the COVID-19 outbreak, the Maldives had taken significant steps towards identifying new sources of revenue

Revenue collection in the Maldives depends primarily on receipts from trade and tourism. To enhance fiscal sustainability, the Government of the Maldives had initiated multiple measures to increase revenue mobilization prior to the COVID-19 crisis. One salient measure was the introduction of a personal income tax to support domestic resource mobilization. The tax came into effect on January 1, 2020 as part of a novel Income Tax Act and is expected to start collecting revenue from April 2020. Until this date, the Maldives had been one of only a few countries in the world that did not tax personal income.

The new tax will be levied on salaries, wages, allowances and income derived from sole partnerships after deducting a tax-free allowance of MVR 720,000 per year (USD 46,400). This allowance is comparatively high, and estimates using the 2016 Household Income and Expenditure Survey suggest that less than 5 percent of the economically active population will be liable to remit tax payments under the new system. This feature makes the tax highly progressive, but also limits its ability to raise revenue. Income in excess of the tax-free allowance will be taxed using a progressive schedule with marginal rates of 5.5 to 15 percent. Tax payments will be withheld at source for salaried individuals to reduce tax evasion. World Bank estimates suggest that the tax will raise about 0.23 percent of GDP in revenue.

To further advance revenue collection, the Ministry of Finance had also planned to increase the Airport Service Charge (ASC) - a tax levied on airplane departures – prior to the COVID-19 pandemic. As part of this plan, the ASC amount would differentiate by the traveler's class of travel, requiring international passengers to pay USD 30 if travelling in economy, and USD 60, 90 and 120 if travelling in business or first class, or by private jet. The existing ASC, which had been in effect since 2016, had collected 12 USD per passenger from domestic travelers and USD 25 from international ones. All passengers departing from one of three international airports in the Maldives (Hulhule', Gan and Hanimadhoo) are subject to pay the ASC, which is remitted by the airline on their behalf. While this reform is not expected to raise revenue during the COVID-19 crisis, estimates suggest that it has the potential of generating additional revenue of up to MVR 230 million per year once tourism returns to pre-crisis levels, thus providing crucial financing to aid the country's recovery.

Source: Authors

B. Outlook and Risks



1. The outlook is highly uncertain

The rapid evolution of the global pandemic makes the outlook more uncertain than usual.

Projecting macroeconomic and fiscal variables is abound with uncertainty in normal times. This time, however, uncertainty is compounded manifold by the unprecedented nature of the COVID-19 pandemic. The Maldives' near-term economic future depends heavily on factors which are currently unknown and largely outside of its control. For instance, a complete resumption of tourism will likely occur once a vaccine is available and has been commercially deployed globally, but the timing of when this will happen remains unclear. Similarly, many characteristics of the virus remain unknown, and will likely dictate policy responses in the Maldives and in tourist-sending countries as they become known. To account for this uncertainty, this section discusses the economic outlook in two scenarios: (i) a baseline scenario, where tourists slowly start to return to the country in Q4 2020 and arrivals steadily increase throughout 2021-2022, and (ii) a downside scenario where tourists do not return to the Maldives for the remainder of 2020, and much more gradually thereafter in 2021-2022.

The Maldives is likely to experience output losses comparable to that following the 2004 tsunami, if not worse.

Given its heavy reliance on tourism as a driver of growth, the Maldives is expected to be one of the hardest hit countries in the world due to the COVID-19 pandemic. In the baseline scenario, real GDP is expected to contract by 13.0 percent in 2020, 18.5 percentage points lower than the pre-COVID-19 baseline. This is comparable to the 2004 tsunami, when real GDP growth contracted by 13.1 percent. These projections are predicated on the assumption that tourists will gradually return to the Maldives in time for the high season, resulting in an overall drop in tourist arrivals of 50 percent compared to 2019. Should tourists not return at all to the Maldives for the rest of 2020, the decline in tourist arrivals is expected to be more pronounced, resulting in a deeper GDP contraction of -17.5 percent²⁸.

²⁸ The Government's own GDP growth estimate in 2020 ranges from -11.5 percent in the best-case scenario to -22.9 percent in the worst-case scenario.

The road to recovery is long.

In the medium-term, the Maldives are expected to make a slow but steady recovery. As tourism gradually resumes, the World Bank projects real GDP growth in 2021 at 8.5 percent in the baseline and 7.9 percent in the downside. While these estimates are much lower than the rebound in growth following previous shocks (see Box 1), they take into account the fact that the Maldives has never fully shut down tourist activity, and that this shock has disproportionately affected China and Italy, two of its top five tourist markets. Even if traveler sentiment improves faster than expected, there are also significant supply-side issues, as the airline industry has already suffered billions of dollars in losses and will take time to ramp up commercial flights to the Maldives. In addition, most foreign workers, who make up half of all workers in the resort industry, have likely been furloughed/laid off and repatriated. Returning to even half the normal capacity would therefore require rehiring thousands of workers from abroad. Similarly, the construction sector, which depends on foreign labor, inputs and financing, is unlikely to pick up rapidly in the near term.

Pressure on the external accounts and reserves is expected to intensify.

Under the baseline scenario, in which tourists gradually start returning for the high season towards the end of 2020, exports are expected to contract to 40.2 percent of GDP in 2020, from a level of 66.6 percent on 2019. This contraction would be more severe under the downside scenario: if the lockdown persists until October, exports are expected to contract to 36.8 percent of GDP in 2020. Despite the contraction in exports, the current account deficit is expected to narrow to 16.3 percent of GDP under the baseline scenario, and 17.5 percent under the downside scenario, as equipment imports for infrastructure and other construction projects are brought to a halt, demand for food and beverage imports in the tourism sector remain slow and remittance and dividend outflows decelerate. The availability of foreign direct and portfolio investments to finance the current account deficit is expected to decrease in 2020 as capital flows out of emerging markets, leaving debt-creating flows and official reserves as the major financing source.

The fiscal deficit is expected to triple in 2020 and remain elevated in the medium-term...

Projected total revenue and grants in 2020 have been revised down from USD 1,940 million to USD 787 million, a 48 percent decline compared to 2019. The slump in revenues is expected to lead the fiscal deficit to more than double from 6.4 percent of GDP in 2019 to 14.5 percent of GDP in 2020. This is despite the Government's plans to cut expenses by more than USD 220 million and the collection of income taxes for the first time in 2020. Other planned revenue reforms, such as changes to airport departure fees and service charges, are unlikely to make much difference even if implemented. Moreover, lease rent payable by resorts and agricultural islands has been granted a deferral for the remainder of 2020²⁹. The fiscal deficit is expected to narrow in 2021 and 2022 once tourism returns, but it is projected to remain elevated in the double-digits until 2022.

...and the debt is projected to rise further.

Total central government debt³⁰ is forecast to rise from 62.7 percent of GDP at end-2019 to 78.9 percent of GDP at end-2020 as the Government seeks external financing to cover the revenue shortfall and meet its existing obligations, which are already high. Consequently, public and publicly guaranteed, or PPG debt is also projected to rise from 77.5 to 93.8 percent of GDP in 2020. Even before the COVID-19 crisis, the Maldives was already assessed to be at high risk of external (and overall) debt distress³¹. In 2020, debt service on external loans is estimated at USD 219.2 million. About 45 percent is owed to the Export-Import Bank of China, the Industrial and Commercial Bank of China, and the China Development Bank.

²⁹ As reported by [Maldives Net](#).

³⁰ Central government debt excludes guaranteed debt, which amounted to an estimated 14.8 percent of GDP at end-2019. Public and publicly guaranteed debt includes this amount.

³¹ See the Joint World Bank and IMF Debt Sustainability Analysis (2020).

Table 2: The projected macroeconomic outlook is bleak, and risks are heavily tilted to the downside

	2019e	2020f	2021f	2022f	2020f	2021f	2022f
		Baseline			Downside	Downside	
Year-on-year change, percent							
GDP	5.2	-13	8.5	6.7	-17.5	7.9	5.9
CPI (end-of-period or eop)	-0.1	1.3	1.2	1.1	0.9	1.2	1.1
In percent of GDP							
Revenues and grants	26.5	15.1	18.7	21.8	12.1	15.7	17.7
Expenditures	32.9	29.6	32.2	33.3	28.6	31.2	32.2
Overall fiscal balance	-6.4	-14.5	-13.5	-11.5	-16.5	-15.5	-14.5
Primary fiscal balance	-4.6	-12	-11.2	-9.4	-13.9	-13.1	-12.3
Central government debt (excluding guarantees)	62.7	78.9	82.6	84.9	82.6	86	88.4
Current account balance	-26.7	-16.3	-17.3	-18.4	-17.5	-18.6	-19.6
Exports of goods and services	66.6	40.2	48.3	53	36.8	39.9	43.5
Imports of goods and services	73	40.9	48.8	54	38.9	41.8	45.3

Source: World Bank staff estimates based on data from MOF and MMA.

Note: 1. 2019 data refers to staff estimates, which differ from official Government estimates. 2020-2022 are forecasts that are current at the time of writing and subject to change. 2. Total PPG debt was estimated at 77.5 percent of GDP, of which guaranteed debt represents 14.8 percent of GDP.

2. Risks are heavily tilted to the downside

Uncertainty and risk abound on the Maldives' recovery.

Much of the speed of the economic recovery – not just in the Maldives but worldwide – hinges on the hitherto unknown evolution of the COVID-19 pandemic. Up until the time of writing, several key factors concerning the virus remain unknown: (i) the seasonality of the disease, (ii) the likelihood of reinfection, (iii) possible mutations of the disease and (iv) the timing and availability of a vaccine, at least for the current strain of the virus and a cure which reduces fatality. All economic forecasts, including for the Maldives, are therefore highly clouded by uncertainty.

External financing risks are severe.

While a narrower current account deficit reduces the Maldives' external financing needs compared to pre-COVID projections, obtaining financing for the remaining deficit during a global crisis is extremely challenging. The Maldives' high financing needs have traditionally been met just-in-time by high foreign exchange inflows from tourism, through foreign direct investments and through public and private borrowing – all of which are expected to be impacted significantly by the crisis. Moreover, because the Maldives had a steady inflow of funding, it did not accumulate substantial foreign currency reserve holdings and hence has limited buffers to weather a drying up of foreign financing. Nonetheless, there are three potential mitigating factors for this risk. First, there are no large bullet payments until 2023, when the maiden USD 250 million sovereign bond the Government placed in 2017 is due. The repayment schedule for the second international bond, placed for USD 100 million with Abu Dhabi, has been extended from 2023 to 2026. Second, the Sovereign Development Fund³² has accumulated USD 193 million as of mid-May 2020, which mitigates rollover risks. Finally, the Government has a USD 400 million swap agreement with RBI, of which USD 150 million has been drawn to-date.

³² The SDF was established in 2017 for the repayment of sovereign bonds. It is mainly financed by airport development fees and airport service charges.

**The Maldives’
unique brand of
tourism has certain
advantages...**

Even as the global economy returns to normal, the Maldives will have to compete with similar destinations such as Indonesia and Thailand³³ for a smaller pool of tourists. Here, its unique geography and longstanding reputation for luxury tourism make it well-positioned to cater to high-end travelers, as this segment has access to private transportation to reach the islands. The country’s ‘one island, one resort’ concept also gives it an advantage over competitors, as travelers can be more readily assured of physical distancing and other measures to minimize the spread of the disease. However, it is possible that even high-end tourism will not return to ‘normal’ in the next five years, as the loss in global wealth that has occurred as a result of the pandemic may impinge on tourism.

**...but signaling to
tourists that it is a
safe destination will
be crucial.**

The Maldives has already taken some important steps to provide relief to households and firms and to safeguard its tourism industry. For example, the GoM releases regular, comprehensive information on the evolution of the disease, helping to keep the public and potential travelers informed. In a bid to minimize layoffs, it has also encouraged workers to register complaints of unlawful termination or other labor grievances on the Jobs Center portal. Moving forward, the GoM could consider other policy measures to signal that the Maldives is a safe tourist destination and establish itself as a strong contender for a smaller pool of travelers once the pandemic subsides. For example, it could establish and enforce stringent hygiene standards for all those involved in the tourism and transport industry, such as Singapore’s [Clean Mark](#) campaign. Such regulations would help to ensure worker safety and build the confidence of travelers to return to the Maldives. Encouragingly, the GoM has already begun drafting “safe tourism guidelines” for the industry as it gears up to reopen borders in July 2020.

³³ These were countries considered most similar to the Maldives by respondents of the Visitors Survey conducted in August 2019. Source: Ministry of Tourism (2019).

C. Special Focus: Harnessing Renewable Energy



Overview

In 2008, the Maldives became the first country in South Asia to successfully achieve universal electrification.

With 1,192 islands spread across roughly 90,000 square kilometers, the Maldives is one of the world's most geographically dispersed countries. This dispersion, coupled with the fact that most inhabited islands are extremely small, makes it challenging to centrally generate electricity and distribute it through a comprehensive grid network – a prerequisite to realize economies of scale. Despite these obstacles, the Maldives became the first country in South Asia to provide universal access to electricity in 2008.³⁴ Since then, as mandated by government policy, all inhabited, industrial and resort islands have 24-hour electricity service.

Electricity service provision in the Maldives is comparatively costly and inefficient.

Most electricity in the Maldives is generated and distributed by two state-owned utilities – STELCO and FENAKA – which operate diesel-fueled powerhouses and small, isolated, island-based grid systems on each inhabited island. End-user tariffs are among the highest in the region. Diesel fuel for the generators is imported by the State Trading Organization (STO), which sells fuel at a fixed price to utilities. The government subsidizes electricity provision through fuel subsidies, reimbursing STO if the selling price to the state utilities falls below the market rate, and through usage subsidies, which compensate utilities when generation costs exceed regulated end-user tariffs. Together, these subsidies amounted to approximately USD 58 million or 1.0 percent of GDP in 2019³⁵. This underscores the importance of improving the financial sustainability of the utilities, exploring cost-reducing options and enhancing the overall efficiency in electricity provision. Cost savings from energy subsidies and fuel imports could be allocated to other important public spending or to reduce the government's fiscal deficit, which stood at 6.4 percent of GDP in 2019.

³⁴ Bhutan is the only other country in South Asia with universal electrification, but this was achieved in 2016.

³⁵ World Bank staff estimates based on data in Ministry of Finance (2020).

The global COVID-19 pandemic has exposed additional vulnerabilities in the electricity sector.

The unprecedented slump in global (and domestic) aggregate demand imposed a significant shock on the Maldivian economy (see part A and B). The electricity sector has not been spared: electricity demand has fallen due to the economic slowdown, and bill collection rates for the utilities have dropped by approximately 50-70 percent since the start of the pandemic³⁶. Even with oil prices at historic lows³⁷, declining revenue and payment shortfalls have led utilities to expect significant cashflow shortfalls in the coming months, imposing further fiscal pressure on already tight public resources. In addition, as part of the COVID-19 relief package (see Box 2), the Government has subsidized 40 percent of electricity bills in April and May.

Investments in distribution and renewable generation are necessary to enhance the sustainability and financial viability of the power sector.

Two investments can help lower generation and distribution costs, which will enhance the financial sustainability of the power sector and reduce end-user tariffs. First, investing in renewable energy sources, most prominently solar, can reduce generation costs, generate fiscal and external savings, provide environmental benefits and generate jobs. Increasing the share of the renewables in the generation mix by 20 percentage points³⁸ could reduce the oil import bill by 5 percent and energy sector subsidies by 14 percent based on 2019 levels.³⁹ Second, the distribution network can be strengthened through investments in grid infrastructure and storage systems to improve operational efficiency and flexibility to integrate renewable energy. Battery energy storage systems are crucial to address the variability of power output from renewable energy sources.

Scaling up the share of renewable energy is a laudable but challenging goal.

This article examines the Maldives' significant potential for diversifying its energy mix to include more renewable sources and makes the case for scaling up such investments. The first part highlights why the current reliance on diesel is unsustainable, both from an environmental but also from a macroeconomic and fiscal perspective. It then lays out the many possibilities for renewable energy in the Maldives. The second part explores the Government of the Maldives' (GoM) efforts to scale up renewable energy and provides suggestions for how investment in the sector can be catalyzed. Given constrained public finances, leveraging private sector participation through an independent power producer model and other complementary reforms will be essential.

1. The current model of electricity generation is unsustainable

Demand for electricity has risen steadily in the Maldives over the past decade, reflecting robust economic growth.

Between 2007 and 2017, total electricity consumption grew by 6.2 percent annually on average⁴⁰, outpacing average annual GDP growth of 5.4 percent over the same period (Figure 22). Total electricity consumption amounted to 750 gigawatt hours (GWh)⁴¹ in 2018 – much higher on a per capita basis than other countries in the region, but lower than the average upper middle-income country.⁴² The increase in electricity demand partly reflects the growth of the tourism sector, the mainstay of the Maldivian economy

³⁶ From World Bank team discussions with STELCO and FENAKA.

³⁷ Average crude oil prices stood at USD 62 per barrel in January 2020 and fell to USD 21 per barrel in April. They are now expected to average USD35 per barrel in 2020, a 43 percent drop from 2019. See [World Bank \(2020\)](#).

³⁸ This is a renewable energy target set in the National Strategic Action Plan (SAP) for 2019-2023.

³⁹ These calculations are based on 2019 oil prices, a 2019 fuel import bill of USD 465 million and energy sector subsidies of USD 58 million.

⁴⁰ Calculated from estimates by the United States' Energy Information Administration (EIA).

⁴¹ Source: Ministry of Environment (2018).

⁴² Per capita electricity consumption is about 1.8 MWh in the Maldives, compared to 0.7 MWh/person in the average South Asian country and 3.5 MWh/person in the average upper middle-income country. Source: World Development Indicators and EIA.

Electricity is generated and distributed via a patchwork of independent, isolated island-based grid systems.

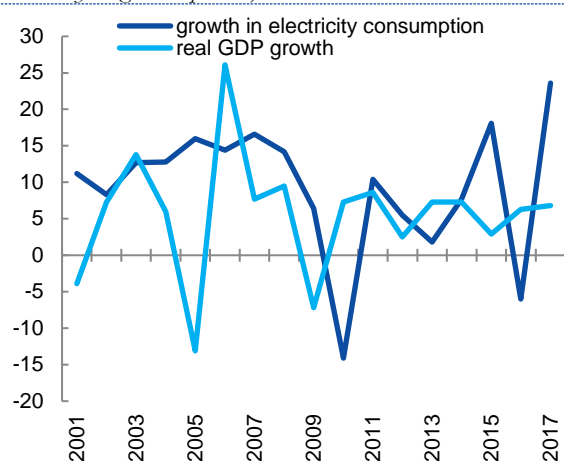
Each island has their own powerhouse and distribution facility, effectively operating as single, isolated island power grids.⁴³ There are 186 powerhouses on inhabited islands (excluding industrial islands and islands used exclusively as resorts or where service is provided by Island Councils), collectively generating 319 Megawatts (MW) from diesel. Two state-owned utilities are responsible for delivering power supply to the majority of these islands⁴⁴: the State Electric Company (STELCO), which operates 35 powerhouses in the Greater Malé region and nearby islands, and FENAKA, which operates over 148 powerhouses in more remote islands.⁴⁵ In addition, resort islands, which independently manage their own electricity supply, have 210 MW of installed capacity as of 2018.⁴⁶

Maldives relies on imported diesel to meet almost all its power needs.

In 2019, the country imported over 700,000 metric tons of fuel, 80 percent of which consisted of diesel – mostly from the United Arab Emirates but also China, Singapore and Malaysia. The remainder consists of petroleum products, aviation fuel and cooking gas. This translated to a costly import bill of USD 465 million – equivalent to almost a fifth of all imports⁴⁷ and 8.3 percent of GDP. The costs of fuel imports can be even higher when oil prices rise: between 2011-2014, when crude oil averaged USD 102 per barrel, fuel imports made up nearly a third of all imports and cost the country 15.2 percent of GDP (Figure 23).

Figure 22: Strong growth in electricity consumption mostly reflects robust economic activity...

(Year-on-year growth, percent)

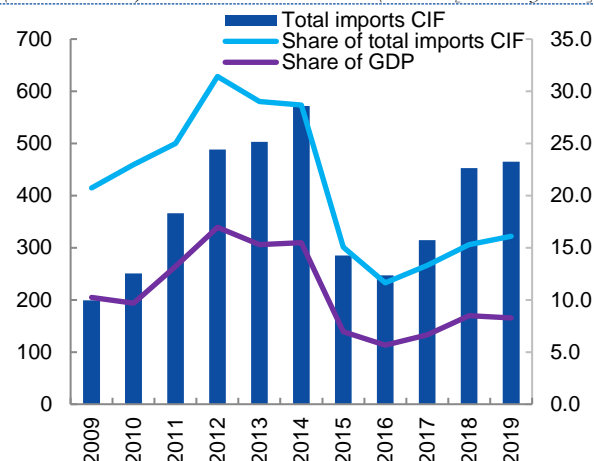


Source: Staff calculations based on data from the United States EIA and Statistics Maldives.

Figure 23: ...but high dependence on fuel imports has led to a hefty bill

(USD millions)

(Percent [secondary axis])



Source: Staff calculations based on data from World Bank, MMA and the Maldives Customs Service.

Note: CIF refers to cost, insurance and freight basis.

⁴³ The only two exceptions are (i) the interconnection between the power grids of Malé, Hulhulé and Hulhumalé, which is nearing completion under the Fifth Power Project financed by the Exim Bank of China, and (ii) the central powerhouse in Addu.

⁴⁴ In addition, the Malé Water and Sewerage Company operates one powerhouse on V. Rakheedhoo; one powerhouse is operated by an island council; and one by a private company.

⁴⁵ FENAKA was formed in 2012 as a merger of 6 regional utilities that were set up in 2009 to serve the outer islands. This decision was instrumental in improving access to electricity, as prior to 2009 these islands relied on locally managed, community-owned generators which varied in quality, resulting in intermittent electricity supply.

⁴⁶ Source: Ministry of Environment.

⁴⁷ As measured on a cost, insurance and freight basis (CIF). Source: Maldives Customs Service.

The lack of economies of scale and poor quality of infrastructure has resulted in high costs of electricity service.

The total cost of electricity production is estimated to range between USD 0.19 to USD 0.33 per kWh for the most efficient generators, increasing to USD 0.69 per kWh for more remote outer islands.⁴⁸ This is higher than, for instance, in India, where estimates suggest costs amount to USD 0.048 cents per kWh for fossil fuel generation, and significantly higher than in developed countries without similar geographic challenges.⁴⁹ Moreover, operational and maintenance costs are also high. In addition to grid losses that arise frequently in the organically grown distribution networks, imported fuel must be transported from the capital to outer islands. This process needs to be repeated several times a month since most islands lack adequate fuel storage facilities that are equipped with flow meters and are hence prone to leakages. In 2015, for example, 64 percent of the country's diesel bunkering capacity was located on one small island, Funadhoo, near the capital, and none in the north⁵⁰.

To reduce the cost of electricity for end-users, the Government provides two types of subsidies.

The Government indirectly subsidizes the purchase of imported fuel by the public utilities. Regardless of the market price, these utilities purchase diesel from the State Trading Organization (STO), the main fuel importer and supplier, at a maximum of MVR 7.6 (USD 0.52) per liter. If market and hence import prices exceed this threshold, the Government compensates STO directly for the difference. This price ceiling is adjusted occasionally (Figure 24). Moreover, the Government directly subsidizes the utilities through a usage subsidy. This is done by capping the end-user tariffs for retail and commercial customers up to 400 kWh, using a progressive schedule in brackets of 100 kWh. As the capped end-user tariffs are insufficient to meet generation costs, the Government compensates utilities by providing a transfer equivalent to the difference between their (self-reported) generation cost and the end-user tariff.

These energy subsidy schemes add to the Maldives' fiscal burden.

In 2019, the GoM spent approximately USD 37 million and USD 21 million on fuel and usage subsidies respectively⁵¹. This amounts to about 1 percent of GDP. Despite these subsidies, end-user tariffs remain high compared to the region and to upper middle-income countries (Figure 25). Moreover, while subsidies help utilities to recover part of their losses from high service costs, STELCO and FENAKA continue to experience financial difficulties and thus have limited capacity to make capital investments. According to the latest quarterly report on state-owned enterprises,⁵² STELCO's debt-to-equity ratio stood at 385 percent. While FENAKA is not as highly leveraged, with a debt-to-equity ratio of 70 percent as of end-Q3 2019, the company has reported operational losses over the last three years. Such financial vulnerabilities not only reduce the creditworthiness of these companies and increase their investment costs but are also contingent liabilities for the Government.

⁴⁸ Source: Ministry of Environment.

⁴⁹ US EIA and India Central Electricity Regulatory Commission.

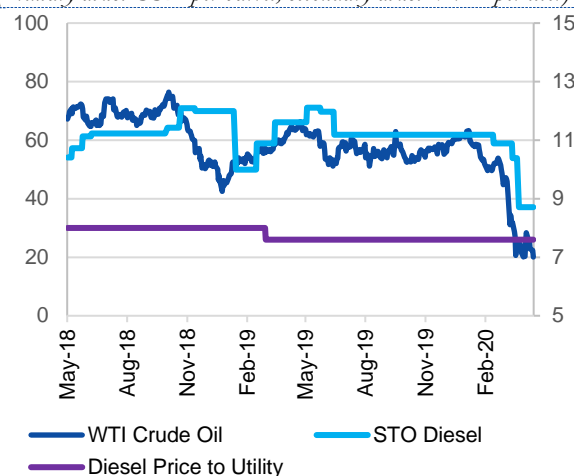
⁵⁰ Shumais and Mohamed (2019).

⁵¹ Ministry of Finance (2020).

⁵² Ministry of Finance (2019).

Figure 24: The Government subsidizes fuel in two ways...

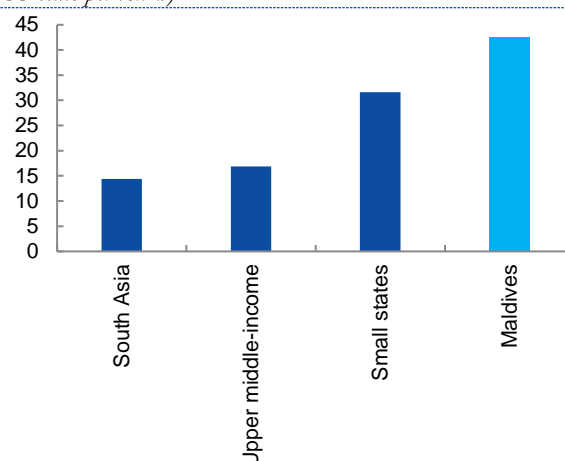
(Primary axis: USD per barrel, secondary axis: MVR per liter)



Source: Staff calculations based on data from World Bank and STO.

Figure 25: ...but the cost of electricity remains the highest in the region and compared to peers

(US cents per kWh)



Source: Staff calculations from World Bank Doing Business project (2016-2020 methodology).

Note: Data refers to average of 2018-2020. Average tariff for one warehouse, assumed to consume 112 kWh per hour for 8 hours a day for 30 days in January.

2. Transitioning towards renewable energy offers a promising alternative for the economy, the environment and the people of the Maldives

Developing and transitioning away from the current, diesel dependent model of electricity generation towards cleaner renewable energy solutions is a key priority for the Government of the Maldives.

Over the past decade, the GoM has actively launched several strategies and initiatives to scale up the application of renewable energy technologies. In 2016, the GoM launched the Maldives Energy Policy and Strategy. Key features of this national energy policy include providing all citizens with access to affordable and reliable electricity services, increasing energy security, promoting energy efficiency and conservation, and moving toward the target of renewable energy-based electricity supply. The National Strategic Action Plan (SAP) for 2019-2023 includes a specific pillar for “Clean Energy”, including a 2023 target to increase the share of renewable energy in the national energy mix by 20 percentage points compared to 2018 levels (see Annex for details). The GoM also committed to installing a minimum of 10 MW of solar photovoltaic (solar PV) under net metering regulations by 2023. The SAP also includes a 2023 target to decrease the fuel usage for electricity generation by 40 million liters and increase renewable energy storage capacity to 30 MWh. Reinforcing the commitments made under the SAP, the Minister of Environment announced at the UN Climate Action Summit in September 2019 that the Maldives would increase the share of renewable energy to 70 percent of the national energy mix by 2030.

Transitioning towards a renewable energy can benefit the Maldives in multiple ways.

Moving away from fossil fuels towards renewable sources of energy could benefit the Maldives in several ways. First, it would reduce external pressure and free up fiscal space by reducing diesel imports and fuel subsidy expenditure. Second, increasing the share of renewable energy would reduce the overall cost of electricity service and provide an opportunity to improve financial sustainability of the sector, as well as affordability of electricity. Third, transitioning away from fossil fuels could also reduce air pollution and carbon emissions. Finally, investing in renewable energy has the potential to create new and innovative jobs for Maldivians, especially for women. To assess the potential benefits of the GoM’s transition, this article attempts to quantify the two major policy commitments made by the GoM in the past year. Firstly, corresponding to the target set for 2023 in the Government’s Strategic Action Plan of 2019-23 we consider a 20-percentage point increase in the share of renewables in aggregate generation

capacity. With a current installed capacity of 319 MW in inhabited islands, this amounts to an addition of over 60 MW by 2023 (the “2023 target”). A second policy commitment made by the GoM involves an increase of the renewable generation capacity to 70 percent of total capacity by 2030 (the “2030 target”). This implies an additional increase of about 400 MW between 2023 and 2030, with a modest demand growth assumed and the 2023 target considered.

Potential benefits are illustrated as follows:

Reduction in fuel subsidy expenditure: World Bank estimates suggest that had the 2023 target been achieved by the Maldives in 2019, electricity sector subsidy expenditure would have been 13.7 percent lower. Under the 2030 target, these savings would have reduced electricity subsidy expenditure by 44 percent (Figure 26). The fiscal gains can be compounded if they are combined with an alignment of diesel retail prices with market prices. For instance, a 20 percent increase in the fuel subsidy reference price from MVR 7.6 to MVR 9.1 would reduce subsidy expenditure by about 27 percent annually, based on 2019 fuel import and price levels.⁵³ These fiscal savings could be reallocated to more productive areas of spending, especially to health and social protection needs that have become more pressing in the wake of the COVID-19 pandemic.

Moreover, these policy commitments would result in a significant reduction in the country’s vulnerability to external oil price shocks and improvement in the external balance: World Bank estimates suggest that had the 2023 target been achieved in 2019 the country’s oil import bill would have been 5.3 percent smaller than its realized value. Had the Maldives achieved the 2030 target, oil imports would have decreased by 17 percent (Figure 26).⁵⁴ By reducing the current account deficit, this would alleviate pressure on the country’s balance of payments and reserves (see section B).

The amount of investment required to realize the renewable energy transition in the Maldives is significant, but benefits would outweigh costs by 2040.

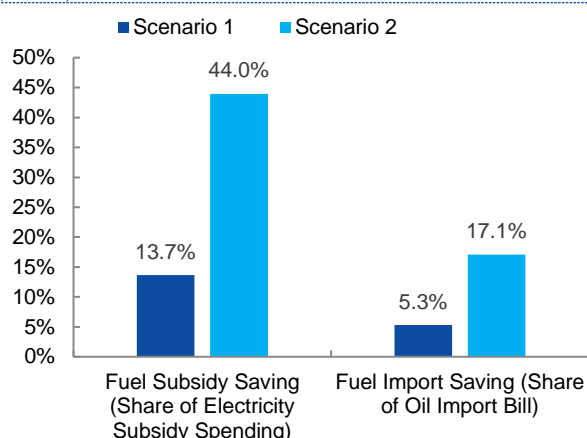
Achieving the targets set by the GoM will require significant investments in the energy sector. A total investment of up to USD 300 million would be needed to achieve the 2023 targets, comprised of the following: (i) about USD 60-90 million based on recent experience of procuring solar PV in the Maldives; (ii) about USD 60-90 million in battery storage systems; and (iii) about USD 75-120 million in grid upgrades to facilitate the transition. Reaching the 2030 target of raising the renewable energy share to 70 percent in the fast-growing power system would require further investments of approximately USD 1 billion, including investments across the generation, transmission and distribution chains. A potential pathway towards these targets is depicted in Figure 27. If the GoM were to follow this pathway, World Bank estimates suggest that the net present value of benefits in terms of fuel import and subsidy savings would outweigh the investment costs by 2040⁵⁵. These calculations ignore additional financial benefits from renewable investments, including lower cost of electricity generation.

⁵³ The savings are calculated based on 2019 oil prices and would be lower if prices remain low after the crisis.

⁵⁴ These calculations are based on aggregate oil imports of USD 465 million in 2019 for a total fuel import of 700,000 metric tons.

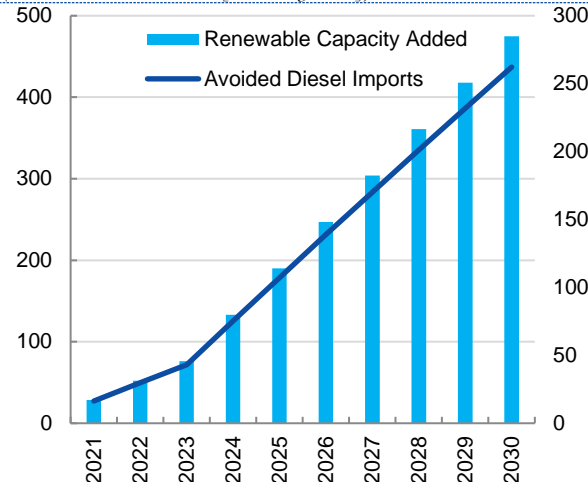
⁵⁵ These calculations are based on a 5 percent discount rate and an assumed aggregate investment need of USD 1.3 billion which is distributed between 2021 and 2030 according to the share of renewable energy installed annually as depicted in Figure 27. The calculations further assume that oil prices return to 2019 levels in 2021 and remain at this level until 2030.

Figure 26: The external and fiscal benefits of increasing the share of renewables are substantial
(Percent)



Source: World Bank staff calculations.

Figure 27: Ramping up renewable investments is costly, but benefits outweigh investment costs
(MWs / Million Liters [secondary axis])



Source: World Bank staff calculations.

Investing in renewable energy can also create lasting benefits for the environment.

Fossil fuels generate 94 percent of the Maldives' emissions, are a major source of pollution and contribute to a per capita carbon footprint significantly above the South Asian average (Figure 28).⁵⁶ Investing in renewable energy can reduce air pollution and help the Maldives meet its Nationally Determined Contributions under the Paris Accord of reducing carbon emissions by 10 to 24 percent. A World Bank (2019d) study suggests that replacing 40 percent of diesel-fired electricity generators with solar PV and battery-energy storage systems on just five major islands in the Maldives would reduce total greenhouse gas emissions by 445,000 tons between 2020 and 2040.

Investing in renewable energy has the potential to create new and innovative jobs for Maldivians, especially for women.

Global estimates suggest that the renewable energy sector directly and indirectly employs 11 million people worldwide, a third of which is in the solar PV industry (Figure 29).⁵⁷ This number is expected to increase to 42 million people by 2050, given the sector's favorable growth prospects.⁵⁸ In Kenya, India and Nigeria, it is estimated that the decentralized renewable energy sector already employs as many people as traditional utilities,⁵⁹ creating a large number of skilled jobs in manufacturing and services. Expanding the renewable energy sector in the Maldives could similarly create many high-quality "green jobs", especially in the outer atolls. This could be especially relevant for women: findings from a global survey conducted by IRENA found that women represent 32 percent of the renewable energy workforce, higher than the 22 percent average of the conventional energy sectors – such as oil and gas.⁶⁰ Investment in renewable energy in the Maldives could thus boost female employment in a sector in which thus far only 12 percent of employees are female.⁶¹

⁵⁶ Ministry of Environment (2020a).

⁵⁷ IRENA (2019).

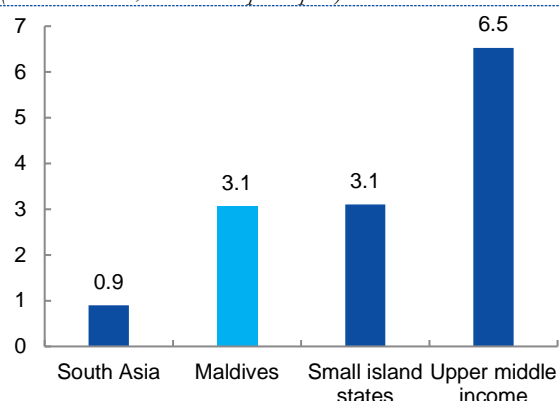
⁵⁸ IRENA (2020b).

⁵⁹ Power for All (2019).

⁶⁰ IRENA (2020b).

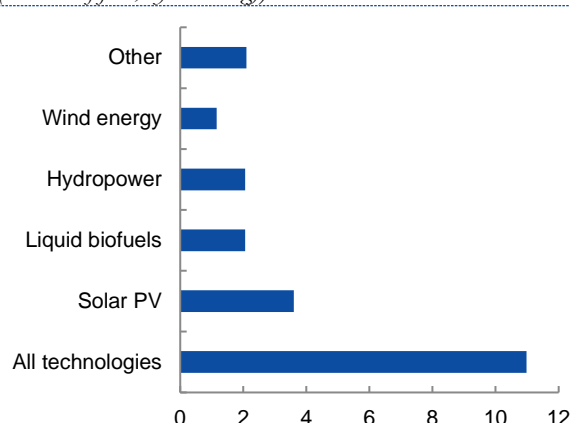
⁶¹ Ministry of Environment (2020c).

Figure 28: The Maldives' high carbon footprint can be mitigated through renewable investments
(CO₂ emissions, metric tons per capita)



Source: Staff calculations from World Bank WDI and IEA.

Figure 29: Renewable energy investments have generated many jobs globally
(millions of jobs, by technology)



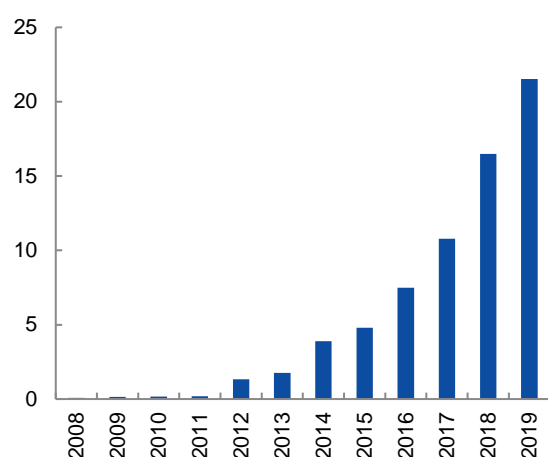
Source: IRENA (2019a).

3. Generation capacity from renewable energy sources has increased over the past decade, but it has yet to be exploited to its full potential

The Maldives has increased renewable energy generation capacity, but there is potential to scale up further.

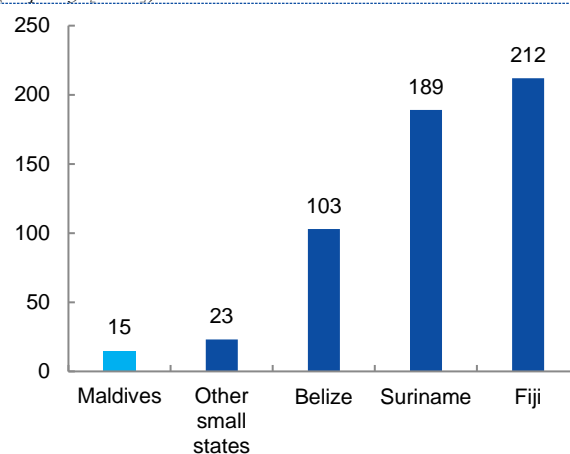
Total installed renewable energy capacity has increased significantly in the Maldives over the past decade. In 2009, the country only had 1.64 MW installed; by 2019, this figure had jumped to 21.52 MW (Figure 30). A total of 7 MWh of battery storage has also been introduced through solar PV-battery-diesel hybrid energy systems.⁶² Despite these advances, renewable energy sources, primarily solar PV, make up only 4 percent of the total energy mix in the Maldives. Compared to other small states – especially to Belize, Suriname and Fiji – the Maldives still lags behind in renewable energy generation (Figure 31).

Figure 30: Total installed renewable energy capacity has increased dramatically over the past decade...
(Capacity [MW])



Source: Staff calculations from IRENA (2020).

Figure 31: ...but the Maldives has significant untapped potential
(Capacity [MW])



Source: Staff calculations from IRENA (2020).

Of all the potential renewable energy applications, solar

With an average 280-300 sunny days per year and a global horizontal irradiance (GHI) in a range of 2,000 – 2,050 kWh per m² per year, the Maldives is an ideal candidate for solar PV systems, which are relatively simple to deploy, operate and maintain. Annual solar PV output is estimated to be 1,530 – 1,600 kWh per

⁶² Climate Investment Fund (2019).

has the most scalability potential.

kilowatt peak with low seasonal variability.⁶³ While the initial cost of investing in solar PV is still high, the technology is becoming cost competitive, with module prices having fallen by 90 percent since the end of 2009⁶⁴ due to economies of scale and technological improvements. Solar PV generation costs in the Maldives have also dropped considerably from the country's first competitive solar PV bid in 2014. Bids under the first phase of the World Bank-funded Accelerating Sustainable Private Investments in Renewable Energy ([ASPIRE](#)) project came in at about USD 0.21 per kWh, but these have since fallen to nearly USD 0.11 per kWh in 2019 – significantly lower than the current costs of diesel-powered generation, which average USD 0.19 to USD 0.33 per kWh (see above).

Rooftop and floating solar PV systems offer a solution to land constraints.

In the Maldives, especially in Malé, installing large-scale ground-mounted solar PV can be particularly challenging because of land space constraints. However, this constraint can be addressed by leveraging different types of PV applications such as rooftop solar PV and floating solar PV, particularly offshore. While rooftop PV systems are more common and cheaper to install, floating systems hold tremendous potential in the Maldives since they can be installed in the ocean and connected to the grid using an undersea or floating cable.⁶⁵ These systems were first installed in the country by Swimsol, a private Austrian developer, in 2014. To date, the company has installed nine different platforms on resort islands in the Maldives.⁶⁶ Although relatively small in scale, this positive experience with floating PV suggests that the technology can be further scaled up. In the Seychelles, for example, a 5 MW offshore floating PV system was competitively bid and awarded under a power purchase agreement with a USD 0.095 per kWh tariff in January 2020.⁶⁷ Once constructed (commissioning expected end 2020), this will be the largest offshore floating PV system in the world.

Wind has relatively low potential in the Maldives and requires further exploration.

Ground measurement of the wind resource potential was recently carried out for a period of two years at two selected sites, one in Hoarafushi in the northern part of the country and the other in Thulusdhoo in the Greater Malé region, with the support of the World Bank. The mean wind speed adjusted with long-term reference data for 16 years was 5.4 m per second and 5.9 m per second at a hub height of 100 meter in Hoarafushi and Thulusdhoo, with the average net capacity factor estimated at 15.8 percent and 18.7 percent.⁶⁸ These results highlight that exploiting on-shore wind for power generation might not be a cost effective solution for the Maldives. However, the resource potential could be higher for offshore wind applications where wind turbines are installed in the deep sea, far flung from the islands. While the commercial viability of offshore wind generation technology is improving globally;⁶⁹ further exploration and assessment is needed in the Maldives, as the deep seas and steep slopes of the atolls complicate the placing of wind turbines.⁷⁰

To integrate variable renewable energy into the grid system, additional investments in

A key challenge of using solar and wind technology is the inherent variability of power generation profile, as power is produced only when the sun is shining or the wind is blowing. Therefore, generation output varies throughout the day and across the seasons. This variability of renewable energy makes it challenging for power system operations and regulators to integrate renewable energy in the grid

⁶³ World Bank (2018). More information available at <https://globalsolaratlas.info/>.

⁶⁴ IRENA (2019b).

⁶⁵ World Bank (2019b).

⁶⁶ This includes the world's largest floating solar system on LUX* resort in South Ari Atoll, which generates 678 kilowatt-peak and saves over 260,000 liters of diesel annually. Source: Edition MV.

⁶⁷ Bonnelame (2020).

⁶⁸ World Bank (2019a). More information available at <https://globalwindatlas.info/>

⁶⁹ World Bank (2019c).

⁷⁰ IRENA (2015).

energy storage capacity are critical.

system while maintaining the reliability of electricity service. To address such challenges, it is important to improve the flexibility of power systems, allowing continuous service despite fluctuations in supply and demand. Energy storage technologies such as battery energy storage systems (BESS) can help to smooth out the supply of electricity, in addition to providing multiple grid services to the power system⁷¹. The distribution grid network can also be reinforced for more flexibility by enhancing the physical network capacity and digitalizing the grid systems.

Generating energy from better waste management is an option, but there are several difficulties.

Waste-to-energy generation produces electricity from solid waste by treating and then burning it. The heat generated in the incineration process creates steam which is used to generate electricity. While this method seems like a double win – electricity generation and solid waste management – the process is complex, requiring an intricate waste sorting system to ensure a reliable supply of waste with consistent properties that support energy conversion. Moreover, waste-to-energy systems require extensive pollution controls that must be tightly monitored and well maintained, as a failure to do so can result in the release of toxic airborne pollutants. The GoM has recently established a regional waste management centre at R. Vandhoo to cover four northern atolls which can produce up to 500 kW daily. The GoM has also initiated plans to build a waste-to-energy facility in the island of Thilafushi to supply 8 MW of power to the Greater Malé region. A 1.5 MW waste-to-energy facility was also proposed for Addu City.

With technological advancements, other types of renewable energies could also have a future in the Maldives.

As an island nation, the Maldives can explore the potential of other renewable energy technologies from the sea. Ocean current energy is one example, as certain channels within the atolls may allow for the harnessing of ocean currents to run underwater turbines. Wave, or hydrokinetic energy, is another source of renewable energy that can be extracted from the surface of the ocean. Ocean thermal energy conversion can produce electricity by exploiting the temperature difference between deep cold ocean and warm surface waters. However, these technologies are still far from reaching technical and commercial viability and require further research and development before being deployed. The GoM is conducting a detailed assessment and research on these alternative renewable energy technologies.

Electric mobility offers a great opportunity for the transition to renewable energy.

After the electricity sector, transportation is the second biggest consumer of final energy consumption, accounting for a third of the total. Electrifying the transport sector would thus reduce consumption of imported petrol and diesel, and hence the emission of local air pollutants and greenhouse gases. The Maldives is well-positioned to do this: as the islands are geographically compact, issues of charging infrastructure and driving range that are typically associated with electric vehicles are minimal. Electric vehicles could offer solutions for electricity storage and grid services through vehicle-to-grid technologies. As motorcycles and two-wheelers already account for most of the land-based transportation, electrifying them would be a key part of an electric mobility strategy in the Maldives. There are already 770 battery scooters registered and operating in Greater Malé.⁷² The Government and private sector players are conducting assessments to seek feasible options to introduce electric mobility, but some barriers to scaling up are the relatively small size of the market and high upfront investment requirements.

⁷¹ BESS also provide multiple grid services to the power system, including enhancing reliability through system frequency regulation, lowering system cost by offsetting peak load with renewables, increasing efficiency of existing generators by replacing their reserve requirements, and serving as backup power in case of a grid outage. Source: World Bank (2019d).

⁷² Source: National Bureau of Statistics.

4. More needs to be done to leverage private sector participation in the sector

The investment needed to scale up renewable energy cannot be fully financed by the public sector.

As discussed previously, aggregate investment needs to achieve the GoM's target are large. Although STELCO and FENAKA have made efforts to invest in renewables, they are already highly leveraged and are thus unable to finance the renewable energy transition. Similarly, the GoM faces a substantial foreign debt burden and remains at high risk of debt distress,⁷³ which limits opportunities for direct public financing of renewable energy expansion.

Previous efforts to provide financing to the private sector for renewable energy investments have shown limited success.

The Maldives has endeavored to increase private sector participation in clean energy. One initiative is the "Bank of Maldives (BML) Green Loan", launched in 2016, that offers loans to businesses up to MVR 20 million (around USD 1.3 million) for renewable energy investments. Earlier, in 2008, it launched the Fund for Renewable Energy System Applications (FRESA), and the Renewable Energy Development Fund (RED) in 2011, which provide concessional loans to small-scale private sector investors and utilities, respectively.⁷⁴ However, the number of solar projects financed from these initiatives is too small to be considered transformative. Instead, development finance institutions have played a critical role in financing the energy transition in the Maldives. For instance, the Asian Development Bank led the Preparing Outer Islands for Sustainable Energy Development (POISED) project in 2014, which resulted in the installation of 7.5 MW solar PV systems on the rooftops of public buildings on five islands served by FENAKA. Similarly, in 2016, the GoM, with support from the World Bank, launched the ASPIRE program to encourage private sector investment in the solar market through independent power producer (IPP) competitive tenders.

Greater use of the IPP model and distributed generation can help mobilize private capital.

While the public sector cannot directly finance the renewable energy transition, it can implement two mechanisms that encourage the private sector to invest in generation capacity. First, public utilities may procure IPPs to develop for large-scale renewable energy plants to add substantial generation capacity. Private investment in generation may be mobilized through a power purchasing agreement (PPA) arrangement, which is a long-term agreement (typically 15-25 years) between a purchaser or "off-taker" (i.e. the state-owned electricity utility) and a privately-owned power producer. By selling electricity to the off-taker at a price defined in the PPA, the private sector earns a guaranteed return on its long-term investment. Box 4 provides an example of how this would work. Second, the GoM could further encourage residential, industrial and commercial electricity consumers to invest in distributed renewable energy generation such as rooftop solar PV. These consumers could borrow in order to invest or sign a contract with a third-party renewable energy service provider which finances and operates the distributed generation systems and sells electricity to the consumers. Distributed generation would help overcome the significant land constraints in the Maldives and improve system efficiency as a significant portion of the electricity is consumed on site, which reduces pressure on the grid and eliminates distribution losses. The GoM is actively working to put necessary policies in place to encourage investment in distributed generation.⁷⁵

⁷³ As assessed by the IMF-World Bank Joint Debt Sustainability Analysis (IMF, 2020).

⁷⁴ Ministry of Environment (2020b).

⁷⁵ Government of the Maldives (2019).

Box 4: Using effective risk mitigation to procure large-scale solar PV IPPs through PPAs – Experience from the World Bank’s ASPIRE project.

Since 2014, the World Bank has financed the Accelerating Sustainable Private Investments in Renewable Energy (ASPIRE) Project. The project has supported two rounds of competitive bidding of solar PV independent power producers with a total generation capacity of 6.5 MW in the Greater Malé region. A comprehensive risk mitigation package was financed by the World Bank and offered by the GoM as part of the bidding package to the private sector to reduce risks and leverage private sector investment.

Under the World Bank-financed ASPIRE project, the Phase 1 sub-project of 1.5 MW rooftop solar PV in Hulhumalé has been operational since March 2018. The Phase 2 sub-project for 5 MW in Greater Malé has been awarded and PPA negotiations are underway with the winning bidder. Between Phase 1 and Phase 2 bidding a significant tariff reduction was achieved, from USD 0.21 per kWh to USD 0.11 USD per kWh.

Given the weak financial position of the power sector, the provision of an effective risk mitigation package was pivotal in mobilizing private sector capital for both Phase 1 and Phase 2. The ASPIRE risk mitigation package offered coverage for both ongoing payments and termination payments due under the particular PPA, thereby enhancing the creditworthiness of both the off-taker and the GoM. In the near term, similar risk mitigation instruments will be necessary to encourage private sector participation in renewable investments, which can be provided through a collaboration of the GoM with development finance institutions.

Experience suggests that guarantees to encourage private sector participation can address the challenge of currency inconvertibility. The Maldives’ large current account deficit and limited currency reserves pose risks related to the availability of foreign currency in the market as current PPAs are denominated in US dollars, while payments for electricity sold are payable in local currency. The GoM may help mitigate the risk through ringfencing adequate reserves for the convertibility of renewable energy IPPs or by revising the PPA template to allow payment to IPPs in USD. A policy commitment has been set out in the Strategic Action Plan 2019-2023 to revise PPA templates accordingly. Subject to various requirements, this arrangement has been agreed upon between the Ministry of Environment, the Ministry of Finance and the Maldives Monetary Authority.

Building on the experience and lessons learned, the World Bank is preparing the Accelerating Renewable Energy Integration and Sustainable Energy (ARISE) Project with the GoM to further scale up the approach of effective risk mitigation and competitive tendering.

Source: Authors

Detailed power system planning to facilitate the integration of renewable energy would further reduce the risks facing prospective private sector investors.

Providing opportunities for private investors to finance the renewable energy transition requires knowing where to invest what, and how much. Conducting a detailed power system planning exercise is therefore a prerequisite to leveraging private capital, as it can identify where the renewable energy generation capacity should be located, what the technical bottlenecks to the transition in the current grid are and what additional system requirements exist. A planning exercise can help the authorities identify where, when and how to add generation capacity from renewable energy to meet growing electricity demand, as well as options for strengthening the grid network. The output from this planning exercise⁷⁶ could be a detailed investment plan that can guide future investment in generation capacity, distribution network, battery storage, and other system enhancements. Investments in grid upgrades and battery storage are particularly critical to integrate larger-scale variable renewable energy into small-island based grid systems and to help mitigate private sector risks. Given limited public finances and the lack of market-based arrangements to enable the private sector to finance grid assets and/or generate a return on long-run grid investments in the Maldives, coordination with development finance institutions to source concessional financing will remain important in the near-term. Moving forward, however, the

⁷⁶ The GoM, with support from the World Bank, will undertake such a planning exercise this year.

Government should consider developing a policy and regulatory framework, supported by contractual agreements, to enable private sector participation in the deployment of BESS and other grid assets.

The Government can further encourage distributed generation by addressing challenges in net metering and by developing a renewable energy service company (RESCO) market.

Distributed generation, for instance through rooftop solar and net metering arrangements, is a crucial complement to large-scale solar investments. Net metering allows small scale residential and commercial customers who generate their own electricity from solar power to sell the electricity they are not using back into the grid and credit the energy they feed into the grid against their own electricity use. Despite its significant potential in the context of a severely land-constrained country, distributed generation has yet to be exploited to its full potential in the Maldives. While the country adopted net metering regulations in 2015, the uptake has been limited to 942 kW as of 2019.⁷⁷ The GoM is reviewing the progress made so far and currently revising the regulations. Challenges for scaling up distributed generation include (i) a nascent domestic PV market; (ii) limited financing options; (iii) a lack of third-party RESCOs, which can finance and operate distributed generation and thus reduce the burden of upfront capital investments otherwise required by consumers; (iv) limited grid stability; and (v) no proven precedent of aggregating fragmented demands for economies of scale. The GoM plans to address these challenges in the revised regulations and to pilot the installation of solar rooftop in Malé in cooperation with STELCO. The GoM has also provided tax and duty exemptions for the import of renewable energy equipment to further encourage investment in the sector.

Scaling up renewable energy adoption requires a workforce that has the skills to install, operate and maintain these technologies.

Increasing renewable energy deployment, either through large scale IPPs or distributed generation, will require significant local capacity for renewable energy installation, operation and maintenance. The skills gap in the Maldives can be addressed by improving the quality of education and promoting technical and vocational training, especially including initiatives that will support participation of women in science, technology, engineering and math (STEM) education and renewable energy projects. The GoM can engage with development partners and local educational institutions and companies to ensure that a sufficient number of properly trained professional are in place to support private sector investment in renewables.

5. COVID-19 may delay plans, but the Government should continue to lay the groundwork for a cleaner, brighter future

COVID-19 has driven energy prices down to historic levels, alleviating some macro-fiscal pressure.

As many countries shut down economic activity and sharply reduced travel and transportation, global crude oil prices recorded their steepest drop in history, with WTI prices even reaching negative territory. Although price movements were mainly driven by demand effects, a supply glut – as producers failed to curb production until mid-April – exacerbated the situation. For energy importers such as the Maldives, cheaper oil may appear to be a silver lining amid the pandemic. Indeed, in March and April, the Maldives only spent an estimated USD 73.8 million on imports of fuels and lubricants, 45 percent less than compared to the same period last year. Importing less fuel, and at lower cost, would reduce the pressure on the trade and fiscal deficits in the near-term, all else equal.

The crisis provides the Maldives with the opportunity to revisit its energy policies for enhanced resilience.

As with the oil price plunge in 2014-16, during which many countries implemented fiscal and energy subsidy reforms, the Maldives could take advantage of the present moment to strengthen the country's resilience to oil price fluctuations. While eliminating energy subsidies may not be immediately feasible given that many firms and households have been adversely impacted by the pandemic, the GoM can improve cost recovery, while still maintaining affordability for the most

⁷⁷ Source: Ministry of Environment.

severely affected consumer categories and consumption bands. The structure and delivery mechanism of fuel and usage subsidies can be also adjusted toward more targeted and efficient subsidies, and reassessed to increase fiscal space in the medium and long-term. Establishing these policies now will go a long way when oil prices eventually and inevitably return to pre-crisis levels.

The crisis is also an opportunity to reinforce the Maldives' transition towards cleaner, more efficient energy sources.

The Maldives has done a commendable job in maintaining universal access to electricity in the wake of the pandemic, especially to hospitals and households. Moving forward, the GoM can take steps to ensure the progress it has made in ramping up renewables over the past decade is not lost. The Government of India, for example, is considering creating autonomous supply chains and lowering import duties to facilitate imports for solar investments from alternative locations besides China. Vietnam has proposed a two-year extension of feed-in-tariffs for wind to 2023 to protect its project pipeline for wind turbines. France and Germany have adjusted tender schemes and provided greater laxity to investors for missed project deadlines due to the pandemic. The Maldives can seize the opportunity to similarly safeguard clean energy investments.

Clean energy investments may also help the Maldivian economy rebound more strongly.

Like most governments around the world, the GoM's stimulus package (see Box 2) has rightly focused on providing relief to the firms and households most affected by the pandemic. As the Government moves from the 'relief' to 'recovery' stage of policy measures, it can also consider enacting climate-friendly fiscal policies that help the economy become more resilient to shocks such as climate change. According to a recent global survey of 200+ experts, such "green stimulus policies" helped countries to increase investment and create jobs faster than traditional fiscal measures following the Global Financial Crisis⁷⁸. Supporting clean physical infrastructure investment or efficiency retrofit projects, for example, may deliver higher multipliers compared to investments in traditional transport infrastructure, as the former are very labor intensive in the early stages and more efficient in the long run. Although the impact of such policies may differ in the Maldives depending on design, implementation and country-specific characteristics, investing in renewable energy can help strengthen the country's resilience to external shocks in the medium and long term.

⁷⁸ Hepburn et al (2020).

Annex

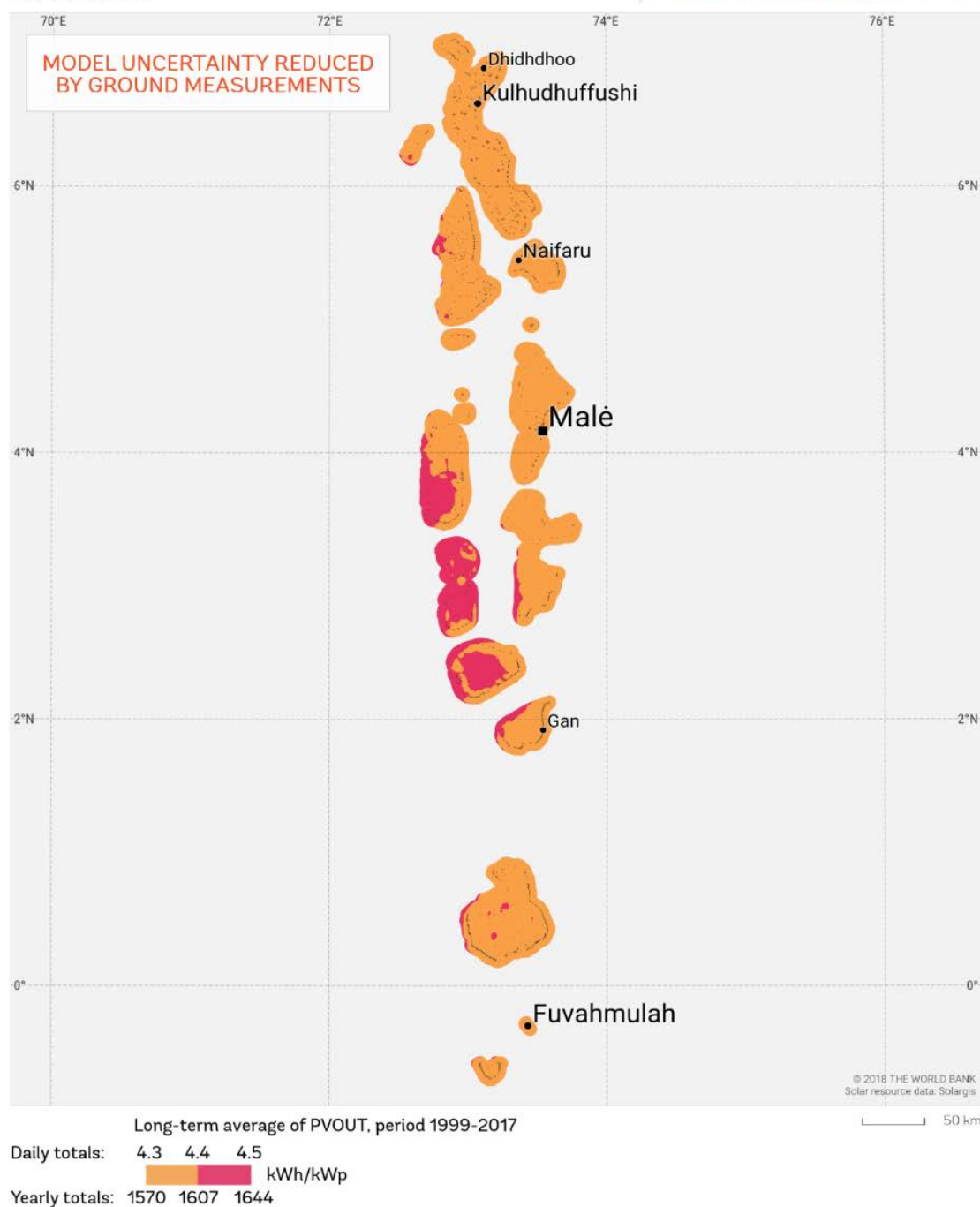
Table 3: The Government of Maldives' action plan on clean energy

Maldives Strategic Action Plan (SAP), 2019-2023, on Clean Energy		
Policy	Targets	Strategy
Policy 1: Ensure access to affordable and reliable supply of electricity to all citizens	By 2023, electricity subsidy implemented on a means tested basis By 2023, reduce distribution inefficiency by maintaining distribution loss within 7%	Strategy 1.1: Increase affordability of electricity to reduce economic burden on all citizens Strategy 1.2: Develop electricity infrastructure on the islands to ensure uninterrupted and efficient supply of electricity
Policy 2: Expand and develop the renewable energy sector	By 2023, share of renewable energy in the national energy mix increased by 20% compared to 2018 levels By 2023, at least 10MW of solar PV is installed under net metering regulation	Strategy 2.1: Create an enabling environment to upscale renewable energy investments Strategy 2.2: Create an enabling environment for domestic users to adopt renewable energy Strategy 2.3: Develop a mechanism to create ease in supplying renewable energy to the electricity network Strategy 2.4: Enable the transportation industry to adopt vehicles that use renewable Energy
Policy 3: Increase national energy security through diversification of sources for energy production and expansion of energy storage	By 2023, reduce fuel usage for electricity generation by 40 million liters By 2023, renewable energy storage capacity is increased to 30MWh	Strategy 3.1: Diversify energy sources for electricity production while reducing the reliance on imported fossil fuels Strategy 3.2: Establish a safe and adequate energy and fuel storage systems
Policy 4: Strengthen the institutional and regulatory framework of the energy sector	By 2021, Utility Regulatory Authority (URA) for integrated utility services is functional By 2023, new public infrastructure projects shall have provision to install renewable energy By 2023, energy data is up to date and reliable and utilized for policy making	Strategy 4.1: Provide electricity through an integrated utility service provision model and decentralize the utilities to ensure cost-effectiveness Strategy 4.2: Develop legal and regulatory framework to promote renewable energy production and usage Strategy 4.3: Develop institutional and human resource capacity of the energy sector Strategy 4.4: Develop a mechanism for reliable energy data collection and access
Policy 5: Promote energy conservation and efficiency	By 2023, green labelling is implemented for energy sector By 2022, provisions for green procurement in the Public Finance Act is implemented	Strategy 5.1: Increase demand side energy efficiency and conservation
Source: Maldives Strategic Action Plan (SAP), 2019-2023.		

Figure 32: Solar PV potential in the Maldives

SOLAR RESOURCE MAP

PHOTOVOLTAIC POWER POTENTIAL MALDIVES



Source: World Bank Group (2019), funded by ESMAP and ASTAE and prepared by Solargis. For more information, please visit <http://globalsolaratlas.info>

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