INTERNATIONAL MONETARY FUND

IMF Country Report No. 25/137

MAURITIUS

SELECTED ISSUES

June 2025

This paper on Mauritius was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on May 28, 2025.

Copies of this report are available to the public from

International Monetary Fund • Publication Services
PO Box 92780 • Washington, D.C. 20090
Telephone: (202) 623-7430 • Fax: (202) 623-7201
E-mail: publications@imf.org Web: http://www.imf.org

International Monetary Fund
Washington, D.C.

INTERNATIONAL MONETARY FUND

MAURITIUS

SELECTED ISSUES

May 28, 2025

Approved By
African Department

Prepared By Félix F. Simione (AFR) and Vaishali Ashtakala (AFR).

CONTENTS

TABLES

DISTRIBUTIONAL IMPACT OF FISCAL POLICY

Mauritius' supportive fiscal policies have helped reduce poverty and inequality in recent years. At the same time, the underlying fiscal expansion has contributed to a deterioration of the fiscal position. With currently limited fiscal space to support long-term growth, Mauritius aims to rebuilding policy buffers through fiscal consolidation while preserving the recent gains in social and poverty indicators. Analysis based on the 2023 household survey data suggests that there is room to make savings on social expenditure and increase tax revenue. Policies to achieve this may include better targeting of social benefits and reforming the VAT and PIT through streamlining of exemptions and allowances and reducing the tax payment threshold. It should be possible to implement these measures while continuing to protect the poor and the vulnerable.

A. Background

1. Social protection has featured prominently in Mauritius' policy goals in recent years. As the authorities aspire to place Mauritius among high-income and developed countries, fiscal policy in recent years has tilted towards achieving social goals. A significant increase in social transfers and pensions, as well as introduction of new allowances and bonuses, have significantly increased current spending following the pandemic. This social orientation of fiscal policy contributed to higher household income and consumption, thereby helping reduce the national poverty rate when assessed from an income-based approach.

2. At the same time, the fiscal expansion has contributed to a higher public debt-to-GDP ratio. The stock of public debt increased by almost 30 ppt of GDP to around 90 percent of GDP between end-June 2019 and end-June 2025. While the fiscal expansion was accompanied by poverty and inequality reduction, capital spending—important to support long-term growth—has stagnated. Looking forward, the authorities aim to support growth through higher capital spending, but the fiscal space to do so is currently limited. Against this backdrop, this paper focuses on the challenge to restore fiscal space through fiscal consolidation while preserving recent gains in social and poverty indicators.

3. This paper assesses the extent to which Mauritius can recalibrate its fiscal policy to restore fiscal sustainability while protecting the poor and the vulnerable. Section B takes stock of the evolution of poverty and inequality in recent years. Section C discusses potential options to reform social transfers and tax exemptions while safeguarding poverty objectives. Section D concludes.

B. Recent Trends in Poverty and Inequality

4. Mauritius has made significant progress in poverty reduction. The latest Household Budget Survey (HBS) was conducted in 2023. According to the authorities' estimate (based on Mauritius' national poverty line), the national relative poverty rate fell from 9.6 percent in 2017 to

7.3 percent in 2023.[1] Adopting the World Bank's poverty line for upper middle-income countries of US$ 6.85 per person per day, the estimated poverty rate in 2023 would be slightly higher at 7.5 percent, lower than in many small island states, though generally higher than in OECD countries

5. The poverty rate is fairly equal across gender but varies considerably by education. The difference between women and men in poverty rates is minimal, with women's rate only 0.4 ppt higher. However, there is a notable difference when it comes to education. The poverty rate reaches around 11 percent for households with completed primary education only, compared to around 2 percent for those with upper secondary education. The poverty rate is also strikingly higher in Rodrigues compared to other regions of Mauritius.

6. Supportive government policies have contributed to poverty reduction. While the labor force and productivity have declined in recent years, substantial government policies in the form of broad-based subsidies and targeted allowances have helped maintain adequate income to low-income individuals. As a result, household income and expenditure are estimated to have increased by about 22 and 18 percent in real terms, respectively, between 2017 and 2023. Statistics Mauritius estimates that, absent social support measures, the poverty rate would have been substantially higher.

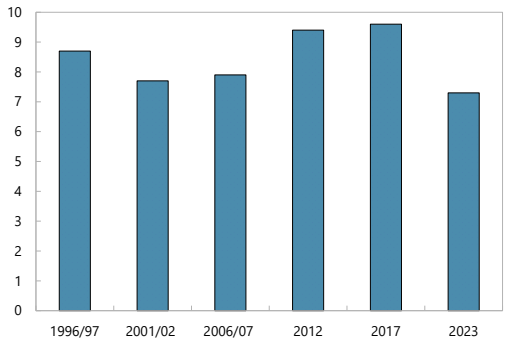
7. Employment status, gender, education, and age are important predictors of individual income (Annex 1). As the poverty measure used in this paper is based on income, a look at the determinants of income is useful. The analysis shows that, as expected, being unemployed is highly associated with lower income. Female is associated with earning around 28 percent lower income. Primary education achievers are associated with 14 percent higher income relative to those who did not complete primary education. The return is even higher for secondary school graduates whose income is 62 percent higher than those who did not complete primary education. Also, as expected, income is nonlinearly related to age. That is, income increases with age until a certain point, after which it declines (as corroborated by the negative coefficient associated with the square of age). These results also hold qualitatively when the dependent variable is the index of asset ownership rather than income. There are also important seasonal and regional variations. On average, income tends to be lower during the cyclone season than otherwise, and significantly lower in Rodrigues than in other regions.

8. Inequality has also declined in recent years. Based on the HBS2023 data, the estimated Gini coefficient at the household level is 0.33 in 2023, down from 0.40 in 2017. As with poverty, the index of inequality tends to be substantially higher in the outer Rodrigues region.

[1] The poverty rate is computed as the percentage of households possessing a monthly net income per adult equivalent below the national poverty line. The poverty line, estimated at Rs 12,378, is computed as half of the median of household net income per adult equivalent. The number of adult equivalents (E) is estimated such that $E = (A + 0.7*C)^{0.7}$, where A is the number of adults in the household (aged 16 years and over) and C is the number of children (aged below 16 years).

Figure 1. Mauritius: Proportion of Households in Relative Poverty, 1996/97–2023

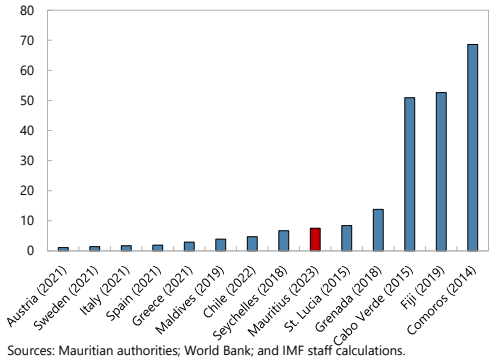
(in percent)



Sources: Mauritian authorities; and IMF staff calculations.

Figure 2. Selected Economies: Poverty Rate Based on International Poverty Line of US$6.85 a Day

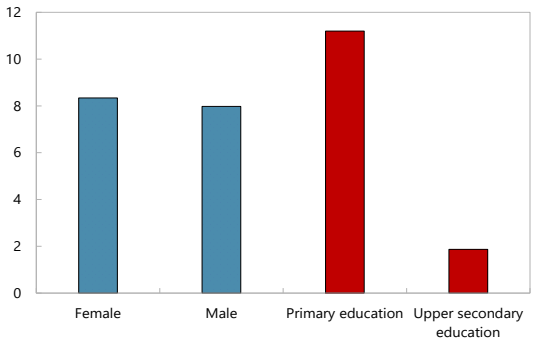
(in percent)



Sources: Mauritian authorities; World Bank; and IMF staff calculations.

Figure 3. Mauritius: Poverty Rate, 2023

(in percent)



Source: IMF staff estimates based on the 2023 Household Budget Survey.

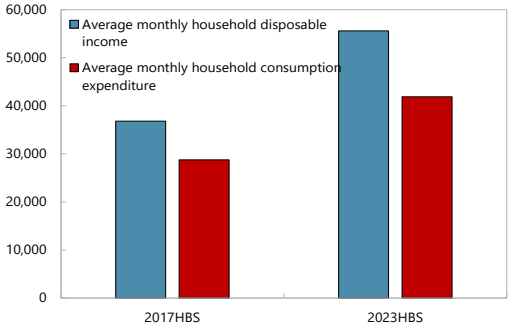
Figure 4. Mauritius: Poverty Rate by District, 2023

(in percent)

Sources: IMF staff estimates based on the 2023 Household Budget Survey.

Figure 5. Mauritius: Household Income and Expenditure

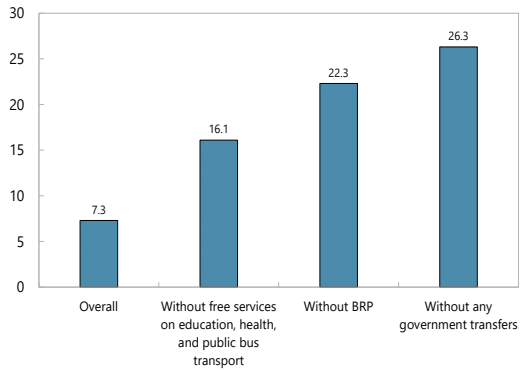
(in rupees)



Source: Statistics Mauritius.

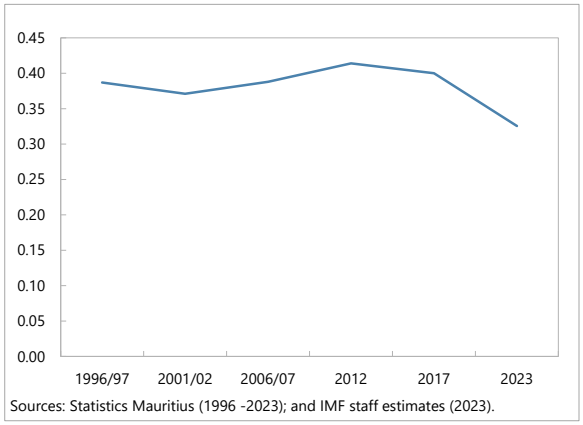
Figure 6. Mauritius: Poverty Rate, 2023

(in percent of households)



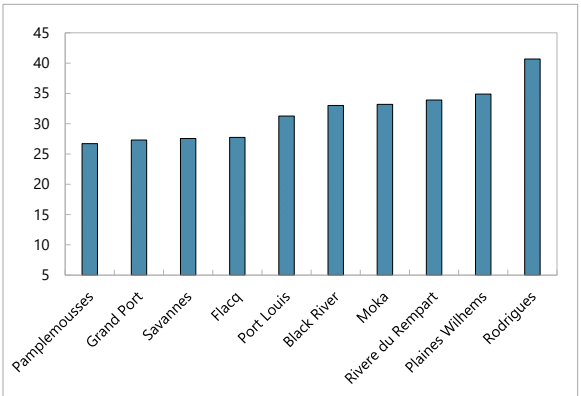
Sources: Ministry of Finance; Statistics Mauritius; and IMF staff calculations.

Figure 7. Mauritius: Inequality GINI Index, 1996–2023



Sources: Statistics Mauritius (1996 -2023); and IMF staff estimates (2023).

Figure 8. Mauritius: Inequality GINI Index by Region, 2023



Sources: 2023 Household Budget Survey; and IMF staff caclulations.

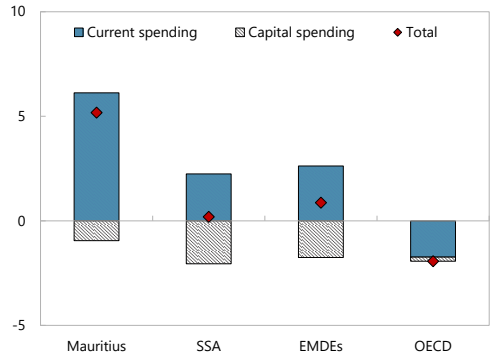
Sources: Country authorities' and IMF staff calculations

C. Addressing Poverty Through Fiscal Policy

9. Poverty-reducing fiscal policy has contributed to higher private consumption but also higher public debt. Relatively generous social protection transfers and entitlements have helped reduce poverty. At the same time, they have contributed to a notable increase in public current spending in recent years, which is significantly higher in Mauritius compared to other countries, including many small islands. On the other hand, the relatively high import content of Mauritius' consumption basket reduces the growth multiplier effect from higher public current transfers, which has delivered a higher public debt close to 90 percent of GDP by end-June 2025.

Figure 9. Mauritius: Change in Total Spending, 2010–2022

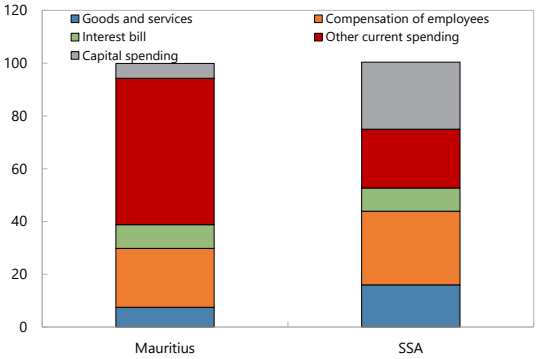
(in percent of GDP)



Sources: IMF FAD expenditure assessment database; and IMF staff calculations.

Figure 10. Mauritius and SSA: Economic Classification, 2022

(in percent of total)



Sources: IMF FAD expenditure assessment database; and IMF staff calculations.

10. While supportive fiscal policies have helped reduce poverty by preserving income, there seems to be room to contain fiscal spending while protecting the poor. There is room to improve the targeting of existing social benefit programs while protecting the poor. For the six social programs considered (Table 1), low-income individuals, compared to their higher income counterparts, account for a much smaller share among the beneficiaries. For example, only 11 percent of the beneficiaries of the BRP (universal) old-age pension are low income. This significant imbalance is evident also for the other five programs. This suggests that the targeting could be improved while continuing to protect the poor. That is, it appears possible in principle to reduce social benefit spending, notably the BRP, by targeting it to those most in need without increasing poverty.

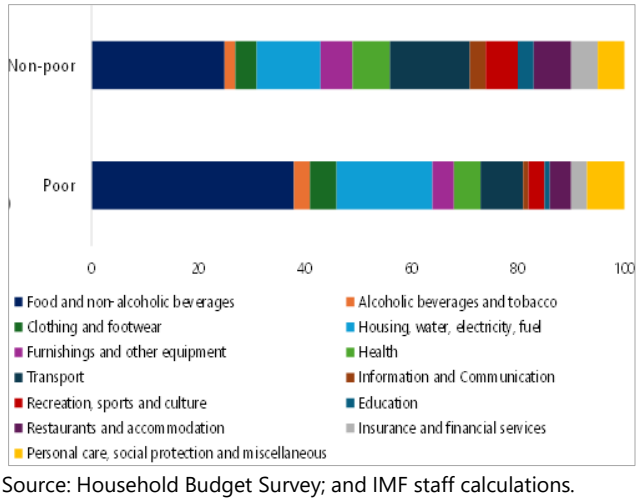
Table 1. Mauritius: Share of Low-Income Recipients of Social Benefits, 2023
(In percent of total number of benefit recipients)

Benefit Type	Poor	Non-poor
Old age pension (BRP)	11.0	89.0
Basic Widow Pension/Child Allowance	17.5	82.5
Basic Invalid Pension/Carer's Allowance	14.4	85.6
Social aid (medical, spouse, rent allowance, etc.)	15.0	85.0
Other social benefits (unemployment, hardship relief, food aid, fisherman's)	15.1	84.9
Scholarship grants	15.0	85.0

Source: 2023 Household Budget Survey and IMF staff estimates.
Note: Beneficiaries' incidence shows the proportion of beneficiaries in each group.

11. There seems to be room to make VAT exemptions more progressive while mobilizing more revenue. Presently, VAT exemptions apply to products including wheat, cereal flours, bread, primary agricultural and horticulture produce, and various other foods. These exemptions provide some progressivity to the VAT framework (as suggested by the higher share of food in the household budget for lower-income households), while also benefiting higher-income households who consume them. Furthermore, luxury products such as entrance fees to cinemas, concerts, and shows, and aircraft leasing are exempted, though entertainment accounts for a small fraction of the budget of low-income households. As a result, although the statutory VAT rate is 15 percent, staff's calculations based on the World Bank Enterprise Survey data show that, in Mauritius, the average effective rate of consumption taxes, mostly the VAT, is much lower at 6.5 percent. These features of the present VAT framework may be updated to further reduce its regressivity. Removing or better targeting the exemptions could help increase VAT revenue without reducing protection for the most vulnerable as, for example, part of the extra revenue could be used to finance targeted transfers to low-income households.

Figure 11. Mauritius: Consumption Share of Household Budget, 2023
(in percent)

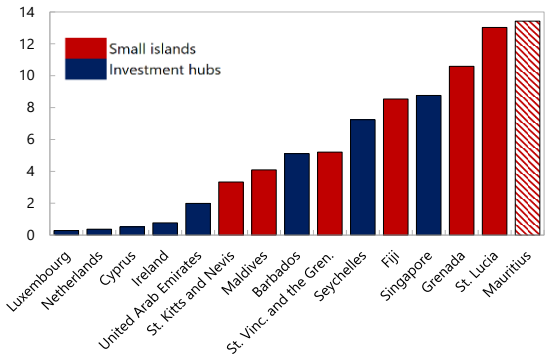


Source: Household Budget Survey; and IMF staff calculations.

12. There is room to lower the VAT payment threshold and still protect the most vulnerable SMEs. The VAT payment thresholds in Mauritius is among the lowest compared to both other small islands and investment hubs, suggesting that the threshold could be reduced while still protecting low-income SMEs. The current VAT payment threshold is annual turnover of Rs 6 million, which covers about one in every four companies. Calculations based on data from the World Bank's 2023 Enterprise Survey suggests that lowering the threshold to Rs 3 million would turn an additional ten percent of enterprises into taxpayers, generating additional Rs 4 billion (or 0.6 percent of GDP) in revenue.[2] Such reform would still allow around 15 percent of enterprises to remain exempted from VAT, hence addressing distributional concerns.

Figure 12. Selected Economies: VAT Registration Threshold, 2022

(In percent of GDP per capita)



Source: IMF staff calculations.

13. The personal income tax (PIT) system is also relatively generous. A more differentiated rate schedule was introduced in 2023, removing some distortions and increasing the progressivity of the PIT. However, the PIT remains relatively generous, exempting annual gross income below Rs 390,000. The HBS2023 data show that over 60 percent of income earners have incomes below that threshold, making them effectively tax exempt. This keeps a large share of the population outside of the tax base, lowering the average tax rate for most taxpayers, including very high earners.

Figure 13a. Mauritius: Cumulative Distribution of Turnover of Enterprises, 2023

(in total annual sales in rupees)

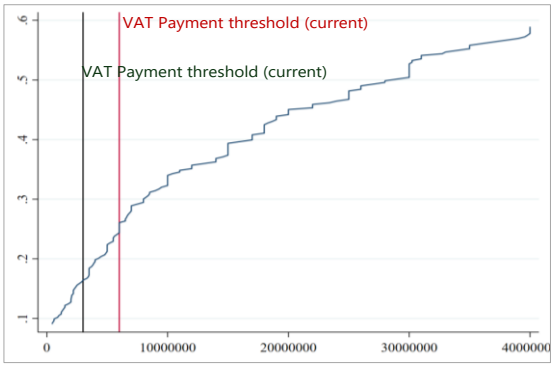
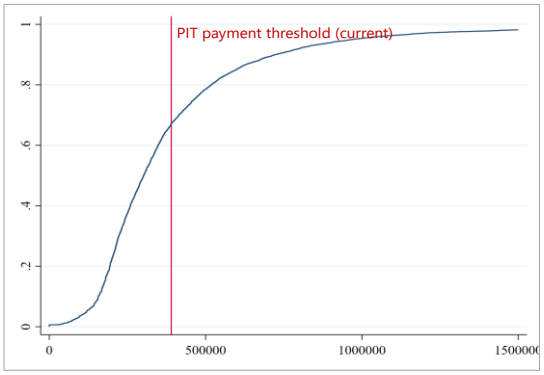


Figure 13b. Mauritius: Cumulative Distribution of Gross Income, 2023

(in annual gross income in rupees)

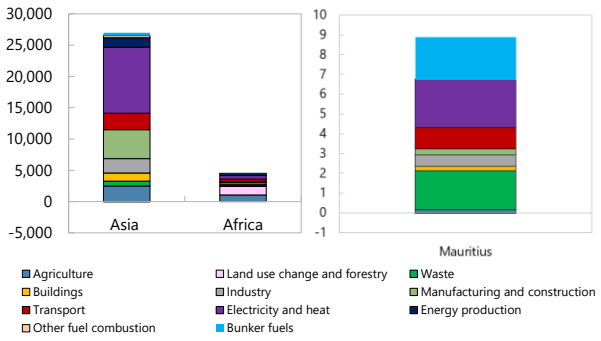


Sources: World Bank Enterprise Survey; and IMF staff estimates based on Mauritius' 2023 Household Budget Survey.

[2] The revenue yield of Rs 4 billion is calculated by multiplying the proposed change in the threshold (Rs 3 million) by the number of companies with turnover of Rs 3-6 million, adjusted by the C-efficiency of VAT of 55 percent.

14. Removal of some excise duty exemptions may also help improve tax progressivity and increase revenue. Mauritius' tax policy currently grants excise duties on the import of electric vehicles. This costs the budget an estimated 0.1 percent of GDP in foregone revenue every year. At the same time, HBS 2023 data show that only around 30 percent of low-income households possess a vehicle, compared to 64 percent of higher-income households. This contrast is arguably larger with regards to electric cars which are typically more expensive. Based on these figures, it is estimated that unwinding the excise duty exemptions on electric vehicles would have a relatively small negative effect on low-income households (as the number of low-income households purchasing electric vehicles is negligible), while it would help increase revenue.

Figure 14. Selected Economies: CO_2 Emissions by Sector and Region, 2021
(In millions of tons of CO_2)



Sources: Our World in Data; and IMF staff calculations.

D. Conclusions

15. There seem to be room to rebuild fiscal policy buffers in Mauritius while preserving recent gains in social and poverty indicators. Supportive fiscal policies have helped reduce poverty and inequality in recent years. The social orientation of fiscal policy has contributed to higher household income, helping reduce poverty. With poverty down to a relatively low level, there is room to make savings on social expenditure and increase tax revenue. This could be achieved through better targeting of social benefits, notably the BRP universal pension. Reforming the VAT and PIT systems through streamlining of exemptions and allowances and reducing the tax payment threshold should also help. Given the room to make the allocation of social benefits and tax expenditures more tilted towards low-income households, it is estimated that the proposed measures may be implemented while continuing to protect the most vulnerable households.

Annex I. Regression Results

Annex I. Table 1. Mauritius: Regression Results, 2023

Dependent variable is the log of individual net income	
Unemployed	-1.0291***
	(0.1532)
Age	0.0278***
	(0.0016)
Agesq	-0.0002***
	(0.0000)
Female	-0.2763***
	(0.0094)
Primary ed. completion	0.1412***
	(0.0179)
Secondary ed. completion	0.6166***
	(0.0125)
Household size	-0.0170***
	(0.0030)
Cyclone season	-0.0447***
	(0.0112)
Pamplemousses	0.1036***
	(0.0196)
Rivere du Rempart	0.1082***
	(0.0214)
Flacq	0.0880***
	(0.0203)
Grand Port	0.1145***
	(0.0200)
Savannes	0.1349***
	(0.0231)
Plaines Wilhems	0.1447***
	(0.0172)
Moka	0.1421***
	(0.0226)
Black River	0.0470**
	(0.0235)
Rodrigues	-0.0668**
	(0.0300)
Observations	14,497
R-squared	0.2618
F-test	230.14

***, **, and * denote statistical significance at 1, 5, and 10 percent, respectively.
Robust standard errors in parentheses

References

Republic of Mauritius (Statistics Mauritius). 2025. Poverty Analysis 2023.

Republic of Mauritius (Statistics Mauritius). 2020. Poverty Analysis 2017.

Statistics Mauritius. Mauritius Household Budget Survey 2023.

World Bank. Enterprise Survey Database: https://www.enterprisesurveys.org/en/data [Accessed in January 2025].

World Bank. World Development Indicators. https://data.worldbank.org/indicator/SI.POV.UMIC; [Accessed in April 2025].

RESIDENTIAL REAL ESTATE SECTOR DEVELOPMENTS

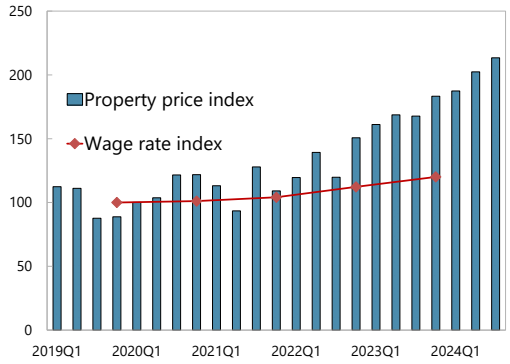
Residential real estate prices have increased by 80 percent since 2019. By significantly outpacing the 20 percent increase in nominal wages, this has worsened housing affordability. It also raises financial stability risks. While post-pandemic macroprudential policy has aimed to contain financial stability risks emanating from the real estate sector, fiscal measures seem to have boosted demand and real estate prices contributing to signs of overheating. Considerations should be given to scaling back post-pandemic fiscal measures that have contributed to signs of overheating in the residential real estate sector.

A. Mauritius and Cross-Country Evidence, 2014–2024

1. Mauritius' housing market started displaying signs of overheating at end-2022 (Figures 1 and 2). The timing and nature of housing cycles across economies reflect the role of monetary policy, domestic regulatory frameworks, and structural supply-demand dynamics, among other factors.

- **Before the COVID-19 pandemic**, Mauritius experienced an extended period of housing market contraction or cooling (blue shaded area, Figure 2), consistent with structural constraints such as weak demand, credit tightening, and subdued investment. Based on the estimating algorithm (Albuquerque et al 2025), while half of EMDEs also experienced cooling housing markets pre pandemic, most AEs had housing market expansions and booms in line with low interest rates, accommodative monetary policy, and strong investor sentiment (Figure 3).

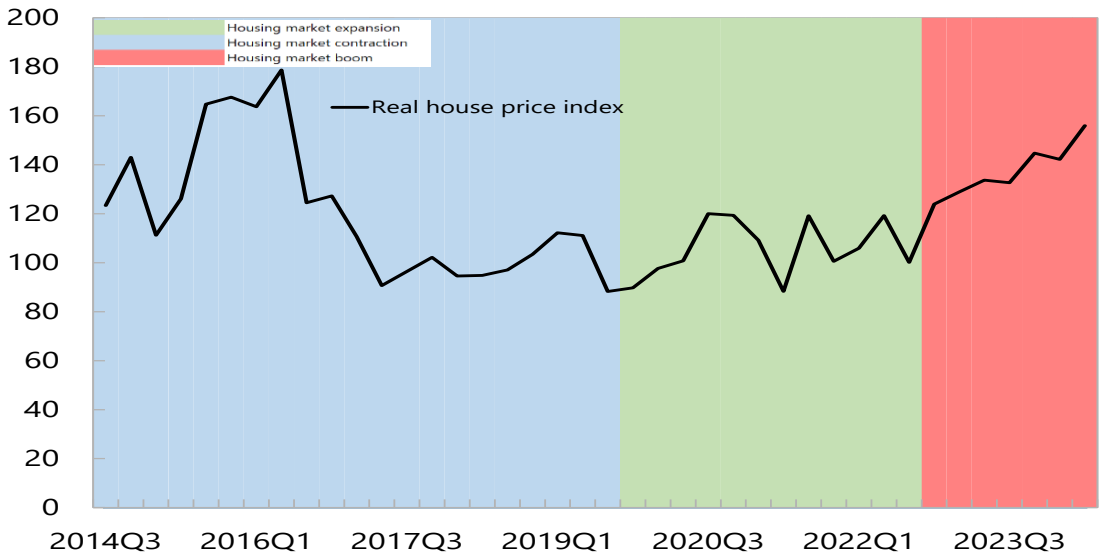
Figure 1. Mauritius: Residential Property Price Index
(Index 2019 = 100)



Source: Statistics Mauritius.

- **Following the pandemic's onset in 2020,** Mauritius' housing market transitioned into an expansion and boom phase (green and red shaded areas, Figure 2), supported by low interest rates and fiscal stimulus. For example, Mauritius' government incentives such as the Property Development Scheme (PDS) and increased foreign demand linked to residency-by-investment programs supported demand in the sector. Boom conditions persisted in Mauritius into 2024, amid limited housing supply and high investor interest. Meanwhile, the share of EMDEs with expansions and booms in the housing market remained relatively stable post pandemic, while for AEs, the prevalence of booms declined a couple of years following the pandemic and contractions became more common in line with tightening financial conditions and pandemic-induced uncertainty.

Figure 2. Mauritius: Housing Market Cycle

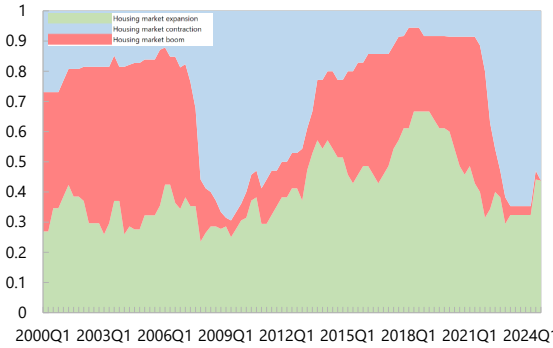


Source: Data and figures are sourced from IMF SPR Housing module and working paper by Bruno Albuquerque, Eugenio M Cerutti, Yosuke Kido, and Richard Varghese, "Not all Housing Cycles are Created Equal: Macroeconomic Consequences of Housing Booms," IMF Working Paper (WP) 2025/050.
Note: Cycles are solely identified by the algorithm as discussed in the WP.

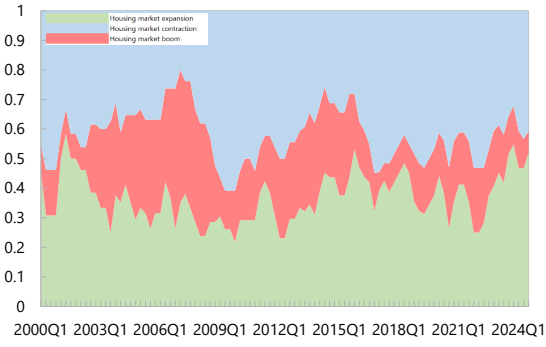
Figure 3. Economies by Income Group: Housing Market Cycle

(Colors show the share of countries in each stage of the housing cycle—expansion, boom, contraction)

Advanced Economies



Emerging and Developing Economies

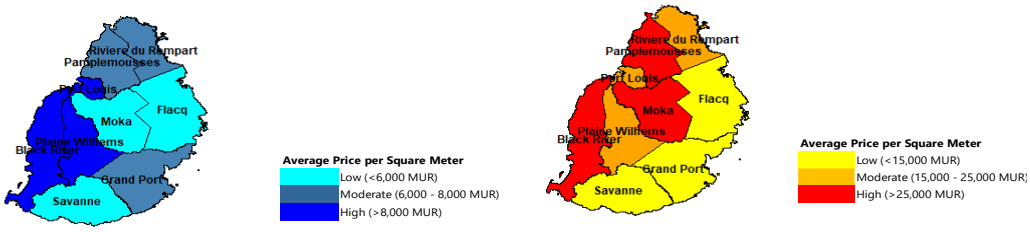


Source: Data and figures are sourced from IMF SPR Housing module and working paper by Bruno Albuquerque, Eugenio M. Cerutti, Yosuke Kido, and Richard Varghese, "Not all Housing Cycles are Created Equal: Macroeconomic Consequences of Housing Booms," IMF Working Paper (WP) 2025/050.
Note: Cycles are solely identified by the algorithm as discussed in the WP; (green=expansion, red=boom, blue=contraction).

B. Regional Trends of Surging Property Prices in Mauritius, 2019–2024

2. Real estate price differences across districts in Mauritius have increased over the last five years. Between 2019 and 2024, there is a broad appreciation across Mauritius' districts (Figure 4), as depicted in the transition from cooler tones in 2019 (indicating lower prices) to warmer tones in 2024 (indicating higher prices). Notably, districts such as Moka and Pamplemousses have emerged as new high-value zones, with significant increases in residential real estate prices. These districts have benefited from major infrastructure investments, the development of smart cities, and sustained demand from non-citizens, which has also driven up land prices. At the same time, districts that were traditionally more affordable—such as Savanne, Flacq, and Grand Port—also recorded price increases, though relatively less so, and have become even more affordable in relative terms. Overall, the difference in real estate prices across districts increased over the past five years.

Figure 4. Mauritius: Average Price per Square Meter by District, 2019 and 2024



Sources: Statistics Mauritius; and IMF staff calculations.

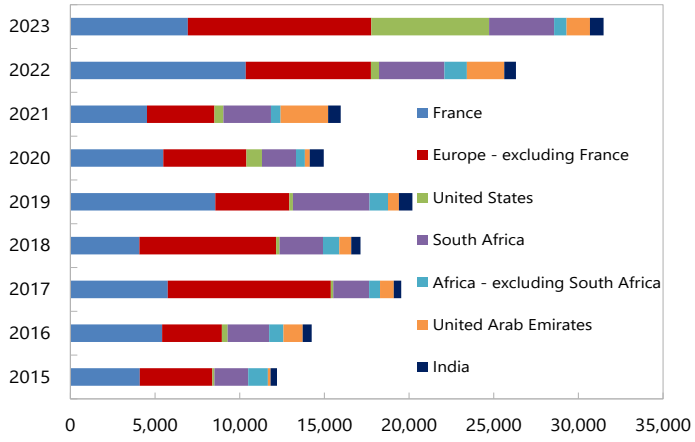
C. Historical Drivers of Surging Property Prices in Mauritius: Climate and a Real Estate Focused Growth Strategy

3. Growing climate risks in Mauritius such as rising sea levels, cyclones, and flooding further reduce available land and raise the costs of resilient infrastructure. Limited developable land generates supply-side constraints—driven by the island's geography and competing uses for agriculture, tourism, commerce, and housing—pushing up real estate prices.

4. Historically, Mauritius' real estate market has mirrored broader economic shifts, with policies supporting real estate and luxury property developments over the last twenty years. Between 2004 and 2010, strategic policy reforms supported economic growth as the nation diversified from traditional sectors like sugar and textiles towards tourism, financial services, and real estate. From 2010 to 2015, the market matured with significant Foreign Direct Investment (FDI) driven by initiatives such as the Integrated Resort Scheme (IRS) and the Property Development Scheme (PDS), which attracted international investors and high-net-worth individuals. This growth momentum continued robustly from 2015 to 2020, with rising FDI fueling luxury property and integrated resort developments, closely linked to the expansion of tourism and financial services, contributing to the higher real estate prices.

Figure 5. Mauritius: FDI by Region

(In millions of rupees)



Source: Bank of Mauritius.

D. Role of Policies in Post-Pandemic Prices in Mauritius: Macroprudential Tightening Versus Fiscal Support

5. While macroprudential policies were tightened in 2021, contributing to containing demand and prices in the residential property sector, signs of overheating emerged. Since their introduction in 2013, macroprudential tools such as the loan-to-value (LTV) and debt service-to-income (DTI) ratios have helped manage systemic risks within Mauritius' financial system. These measures, recalibrated several times to reflect evolving economic conditions (most recently tightened in 2021), have become integral to maintaining financial stability.

Figure 6. Selected Economies: Macroprudential Measures 1/

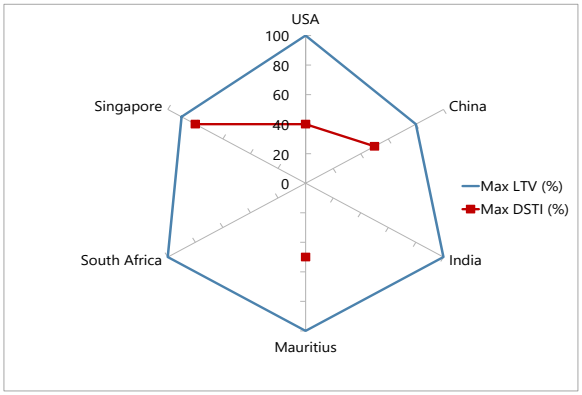
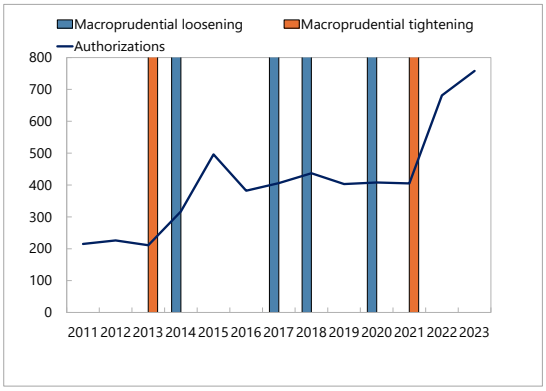


Figure 7. Mauritius: Macroprudential Measures, Number of Authorizations Issued

(in units) 2/

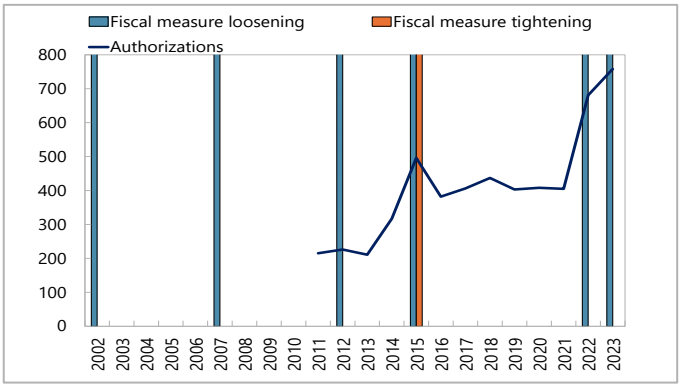


Sources: IMF Macroprudential Policy Survey (1990-2023); Mauritius Economic Development Board (EDB); and IMF staff calculations.
1/ Closer to the center represents tighter macroprudential policy.
2/ Authorizations are applications that are processed and approved by EDB for property purchase, proxying demand.

6. On the other hand, post-pandemic fiscal measures appear to have contributed to higher demand and prices in the residential property sector. Since 2020, policies attracting international real estate investors, amplified in the post-COVID-19 era and resonating with the digital nomad trend, have contributed to higher property prices. The government introduced two key fiscal initiatives in FY2023/24: the Home Ownership Scheme and the Home Loan Scheme. The Home Ownership Scheme, for properties acquired between July 2023 and June 2024, provided a 5 percent refund (capped at Rs 500,000) on the purchase price. The Home Loan Scheme, targeting new home loans registered between July 2021 and June 2024, provided a 5 percent refund on the property value to boost homeownership and stimulate new residential developments. The above fiscal measures seem to have contributed to higher demand for residential real estate, in line with the observed record-high construction price index of 141.5 in September 2024 (100 in 2018Q1), contributing to the 80 percent increase in residential real estate prices since 2019 and signs of overheating.

Figure 8. Mauritius: Fiscal Measures, Number of Authorizations Issued

(in units)



Sources: Mauritius Economic Development Board (EDB); and IMF staff calculations.
Note: Authorizations are applications that are processed and approved by EDB for property purchase, proxying demand.

7. Meanwhile, government efforts to alleviate housing affordability via social housing construction have helped only few households. Despite commitments to address affordability for low- and middle-income households, progress in social housing has been slow—with fewer than 3,000 units built between 2019 and 2024—leaving demand largely unmet.[3]

8. Considerations should be given to scaling back post-pandemic fiscal measures that appear to have contributed to signs of overheating in the residential real estate sector.

[3] Deputy Prime Minister's Office, Ministry of Housing. (2024). Social Housing Programme 2024–2025: Progress Report. Government of Mauritius. Retrieved from https://housing.govmu.org/Documents/MUS_Social_Housing_2024_25_V_03_0_Housingall.pdf

References

Deputy Prime Minister's Office, Ministry of Housing. (2024). Social Housing Programme 2024–2025: Progress Report. Government of Mauritius. Retrieved from https://housing.govmu.org/Documents/MUS_Social_Housing_2024_25_V_03_0_Housingall.pdf.

Bruno Albuquerque, Eugenio M Cerutti, Yosuke Kido, and Richard Varghese. "Not all Housing Cycles Are Created Equal: Macroeconomic Consequences of Housing Booms", IMF Working Papers 2025, 050 (2025).

Economic Development Board (EDB) Mauritius. (2024). Highlights of the Property Market in Mauritius–EDB Insights, June 2024. Republic of Mauritius. Retrieved from https://edbmauritius.org

INCREASING RESILIENCE TO WEATHER SHOCKS ON HOUSING

Mauritius is highly vulnerable to climate change shocks. Weather shocks are associated with significant damage to housing. Mauritian households more exposed to cyclones are more likely to experience roof and wall leaks. The average cost of roof and wall repair is estimated at around US$ 500 per year per household (or 3 percent of annual income). The impact of these shocks may be mitigated by policies that promote the reach of private property insurance. Mainstreaming climate risk analysis into construction guidelines is also advisable. Well-targeted public support schemes financed by concessional resources are also recommended.

A. Background

1. Mauritius is highly vulnerable to extreme weather events giving rise to large adaptation needs (UN, 2021). It is located on the route of tropical cyclones that frequently hit the eastern coast of Africa. Recurrent cyclones over the years have significantly damaged public and private infrastructure. Addressing this vulnerability requires increasing the country's ability to adapt to extreme weather events. Financing needs to reach Mauritius' climate adaptation goals by 2030 are estimated at US$ 6.5 billion (40 percent of GDP) as per the authorities' Nationally Determined Contributions (NDCs).

2. Mauritian households also need to increase their resilience to climate shocks, but their exposure to such shocks has not been quantified extensively. Damage to roofs and walls of private dwellings, leading to leakages, is common during cyclones. Assessing the size of the damage could help shed light on potential mitigation and adaptation policies to make households more resilient.

B. Scope and Data

3. This paper assesses the impact of weather shocks on housing infrastructure among Mauritian households and what policies could be adopted to mitigate these shocks. It explores the geographical variation of household location and the seasonal variation of weather to gauge the association between the cyclone season and damage to roof and walls of private dwellings.

4. The analysis is based on the 2023 household budget survey (HBS) data. 7,000 households were interviewed from January to December 2023 in different regions. The 2023 survey has several advantages for this study. First, it includes data on the household location. This enables an assessment of whether the household is located in a cyclone-prone region. Cyclone-prone, or vulnerable, regions are located in the northern east (as discussed later). Second, the powerful cyclone *Freddy*, the longest lasting tropical cyclone ever recorded worldwide (WMO, 2024), passed near Mauritius in February 2023. Third, the survey includes questions about whether the household experienced leakages from the roof and walls, one of the possible consequences of heavy rains amid cyclones.

5. While most houses are built on robust material, roof leakages, the associated costs, and low insurance penetration present challenges. Selected summary statistics are presented in Table 1 with a breakdown by more vulnerable and less vulnerable regions (where vulnerability is defined as proximity to the cyclone route as detailed later on paragraph 6). The average household is composed of 3.2 members and the average house contains around 6 rooms. On the positive side, about 87 percent of households own their houses. Also, about 96 percent of houses have a roof made of concrete as opposed to less resilient materials such as shingle sheets. However, about 24 percent report leakage problems from the roof and walls over the last year. The average household spends about Rs 24,000 (around US$ 500) per year to repair the leaks, with only 4 percent of households paying house and content insurance.

Table 1. Mauritius: Selected Statistics of the 2023 Household Budget Survey
(Figures in percent of total households, unless otherwise indicated)

	Mauritius	More Vulnerable Districts	Less Vulnerable Districts
Number of Households (number)	6,943	3,127	3,816
Household Head Characteristics			
Gender of the Household Head			
Female	24.6	24.4	24.8
Male	75.4	75.6	75.2
Age of the Household Head (average, years)	56.2	55.7	56.6
Education of the Household Head (average, years)*	8.8	8.7	8.9
Household Unemployment Rate	0.6	0.6	0.6
Household Poverty Rate	8.1	8.5	7.7
Housing Characteristics			
Household Size (average number of people)	3.2	3.3	3.1
Number of Rooms per House (average)	5.9	6.1	5.8
Roof Made of Concrete	95.5	95.6	95.4
Roof Made of Other Material	4.5	4.4	4.6
Own the House	86.7	88.2	85.4
Rental	13.3	11.8	14.6
Weather Shocks and Insurance			
Faces Roof/Wall Leakage	24.4	27.8	21.5
Expenditure on Roof/Wall Repair (annual average, Rs)	24,307	19,946	28,311
Has House and Content Insurance	4.0	2.6	5.1
Insurance Premium (annual average, Rs)	106,629	302,981	19,788
Household Income			
Disposable Income (monthly average, Rs)	68,967	67,058	70,560
Income per Adult Equivalent (monthly average, Rs)	33,313	31,293	35,001
Income Inequality (Gini Coefficient)	0.35	0.35	0.36
Expenditure (monthly average, Rs)	36,679	35,304	37,826

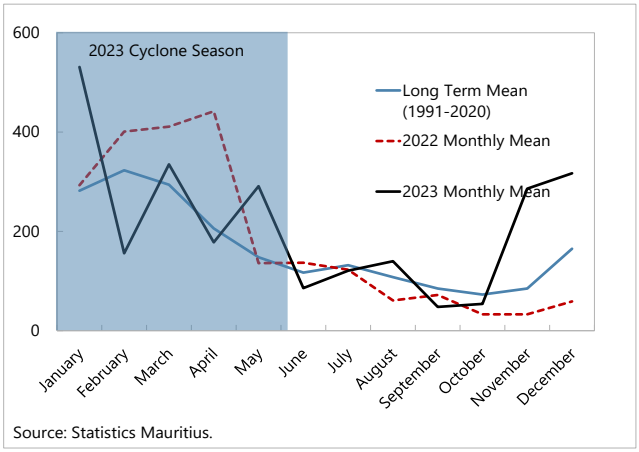
Source: Estimates based on Mauritius Household Budget Survey, 2023.
*Excludes respondents with post-secondary education.

C. Weather Shock Patterns in Mauritius

6. Mauritius' weather shocks entail seasonal and regional patterns that allow identification of the relatively *more* and *less* vulnerable households. The cyclone season runs from November to May, with most heavy rainfall occurring between February and April (Figure 1). At the same time, there is a clear difference in the regional exposure to adverse rain. The northern eastern region tends to be relatively more impacted by extreme weather events given its location on the cyclone route. Mauritius is located on the route of the South-West Indian Ocean Cyclone, also

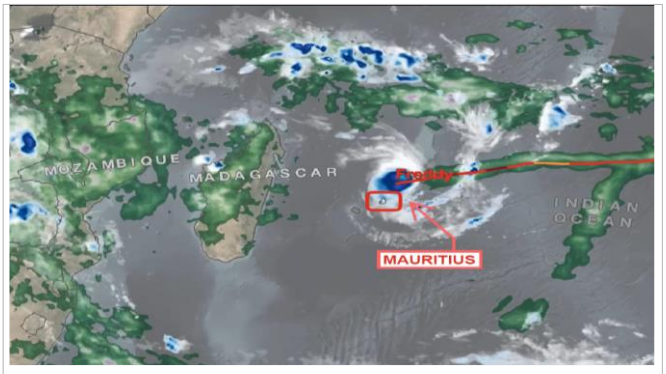
known as tropical cyclone, which forms south to the equator and west to the African coast (WMO, 2017). This cyclone system passes through near Mauritius' northern eastern region as it approaches the southern eastern coast of Africa (Figure 2). For these reasons, it is assumed that Mauritius' northern eastern districts—Rivière du Rempart, Flacq, Pamplemousses, Port Louis, and Moka—are relatively more vulnerable to cyclones. The remaining (southern western) districts—Rivière Noire, Plaines Wilhems, Grand Port, and Savanne—are assumed to be relatively less vulnerable.[1]

Figure 1. Mauritius: Average Rainfall
(In millimeters)



Source: Statistics Mauritius.

Figure 2. Mauritius: Exposure to Cyclones



Source: NASA's Goddard Space Flight Center (https://svs.gsfc.nasa.gov/14312/).

7. Actual housing damage is also associated with household location and the season of the year. Consistent with temporal and regional variation in the exposure to weather shocks depicted in Figure 1 and Figure 2, the proportion of households experiencing leakage problems in their houses is also higher in the more vulnerable districts and during the cyclone season, notably in February-April (Figures 3 and 4).

D. Quantifying the Likelihood of Roof and Wall Leakage

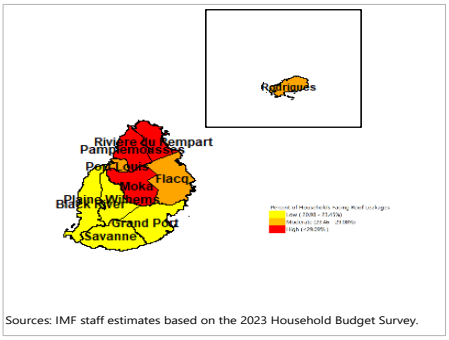
8. The likelihood of roof and wall leakage is higher in more vulnerable districts and during the cyclone season, though a causal relationship cannot be established (Table 2). A simple difference-in-differences (DiD) analysis confirms that the proportion of households reporting roof and/or wall leakage is higher for more vulnerable districts compared to less vulnerable ones. This is true both during and off the cyclone season. Similarly, the proportion of households facing leakages is higher for the cyclone season than otherwise, and this is true both for more and less vulnerable regions. As a result, the estimated DiD (-0.8 percentage points) is small and close to zero and statistically insignificant. This suggests that although location in more vulnerable districts and

[1] Typically, when a cyclone makes a landfall and crosses the coast, it begins to weaken (WMO, 2017). Based on historical evidence, when a cyclone hits Mauritius directly, it is most likely to make landfall through the northern eastern region, making these regions relatively more vulnerable.

the cyclone season are both positively associated with the incidence of leakages, additional factors contribute to leakage occurrence.

Figure 3. Mauritius: Percent of Households Facing Roof Leakages, 2023

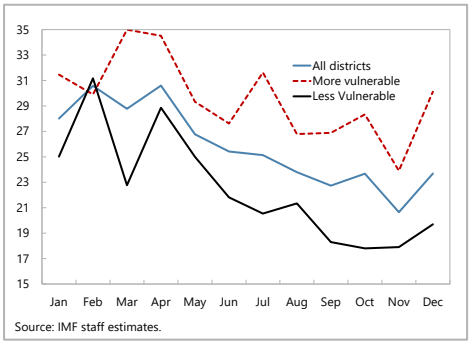
(in percent of total households)



Sources: IMF staff estimates based on the 2023 Household Budget Survey.

Figure 4. Mauritius: Households Reporting Roof and Wall Leakages, 2023

(in percent of total households)



Source: IMF staff estimates.

Sources: Country authorities' and IMF staff calculations.

Table 2. Mauritius: Percent of Households Reporting at Least One Roof and Wall Leakage in 2023

	Cyclone Season	Non-Cyclone Season	Difference
More Vulnerable Districts	31.4	26.8	4.7
Less Vulnetable Districts	25.5	20.0	5.5
Difference	5.9	6.7	**-0.8**

Source: Mauritius Household Budget Survey, 2023.

9. An expanded DiD using regression analysis can help control for other potential determinants of roof and wall leakages. The following regression is estimated:

$$PROB\{LEAK_{it} = 1\} = \emptyset[\beta_0 + \beta_1 LOCATION_{it} + \beta_2 SEASON_{it} + \beta_3 (LOCATION \times SEASON)_{it} + Z_{it}] \quad (1)$$

where *LEAK* is a dummy variable that takes the value 1 if the household reports having leakage problem on the roof and/or wall, and zero otherwise. *LOCATION* takes the value 1 if the house is located in more vulnerable districts (Rivière du Rempart, Flacq, Pamplemousses, Port Louis, and Moka) and zero otherwise. *SEASON* takes the value 1 for cyclone season months (February-April) and zero otherwise. Z is a vector of control variables comprising: (i) the material on which the house roof and walls are built on (a dummy variable taking the value 1 for concrete and zero otherwise); (ii) household wealth proxied by the asset ownership index; and (iii) a dummy variable capturing whether the household has house insurance. The subscripts i and t denote the household and month, respectively. The coefficients of interest are β_1, β_2, and β_3; β_1 and β_2 capture the change in the likelihood of experiencing roof and/or wall leakage in vulnerable locations and during the cyclone season, respectively; β_3 is the DiD estimator, which captures whether the change in the likelihood of facing roof and/or wall leakages differs for more and less vulnerable districts. The regression is estimated through a probit estimator.

10. Estimation results indicate that the likelihood of leakage significantly increases with the location and season of the year, while more resilient construction material and greater wealth are associated with less leakage. Table 3 reports the regression results.

Table 3. Mauritius: Regression Results: Difference-in-Differences with Controls
(Dependent variable is a dummy for households reporting roof and wall leaks)

	Coefficient
House located in more vulnerable districts	0.2390***
	(0.0391)
Cyclone season	0.1879***
	(0.0514)
Vulnerable district*Cyclone season	-0.0186
	(0.0766)
Concrete roof	-0.8554***
	(0.0924)
Concrete wall	-0.1874
	(0.1257)
Wealth index	-0.1042***
	(0.0192)
Has house and content insurance	-0.1110
	(0.0980)
Constant	0.1207
	(0.0970)
Observations	6923

***, **, and * denote statistical significance at 1, 5, and 10 percent, respectively.

- The probability of leaks increases by approximately 0.24 for houses located in more vulnerable districts (compared to those located in less vulnerable districts). A similar estimate (0.19) applies to the cyclone season (compared to the non-cyclone season). These estimates are highly statistically significant. However, the DiD estimate is close to zero and statistically insignificant as it was the case in the simple DiD mean comparison. This again confirms that, while household location and the cyclone season influence the likelihood of leaks, their coefficients cannot be regarded as a capturing a causal effect.
- Roof construction material and household wealth matter. As expected, the probability of leaks is lower by 0.86 and 0.19 for houses with roof and walls made of concrete (compared to shingle sheets and other less resilient material), respectively, although the association with wall material is statistically insignificant. Also as expected, household wealth is negatively associated with the likelihood of leaks. Finally, having access to house insurance does not significantly impact the probability of leaks. This should not be surprising as insurance by design is intended to mitigate shocks (ex-post) rather than avoiding them.

E. Policy Implications

11. Further development of private insurance could help Mauritian households cope with the significant financial burden from roof and wall leaks. As noted earlier, a typical household facing roof or wall leaks incurs about US$ 500 expense per year on repair work, equivalent to about 3 percent household annual income. However, only 4 percent of households who own their houses have house and content insurance.[4] This is at odds with 24 percent of households impacted by leaks every year, suggesting that underinsurance may be an issue. While in Mauritius the coverage of non-life insurance, which includes property insurance, is broadly in line with some island states, it lags notably behind Seychelles (Figure 5).

12. Potential underinsurance may be reduced by improving insurance affordability, raising risk awareness, and limiting possible moral hazard from public support schemes. The HBS data show that the annual household expenditure on house and content insurance averages about Rs 107,000, equivalent to 13 percent of annual household disposable income. This ratio is significantly higher compared to other countries such as the United States (around 2 percent of household income). Also, the awareness to risks of underinsurance is low among young Mauritians, with around 80 percent of people considering homeowners insurance as not necessary and too costly (Aumeer et al., 2015). This may in part entail a moral hazard problem. As of end-2022, there were eight natural disaster emergency programs financed by the government (Table 4). There are significant benefits from the support schemes in place as they help cope with shocks. At the same time, they may discourage further development of the private insurance market.[5] Striking the right balance between government support and private insurance is key (IMF, 2019).

Table 4. Mauritius: Natural Disaster Scheme

1. Cyclone Emergency Scheme
2. Heavy Rainfall, Torrential Rain and Flooding Emergency Scheme
3. Tsunami Emergency Scheme
4. High Waves Emergency Scheme
5. Water Crisis Emergency Scheme
6. Earthquake Emergency Scheme
7. Landslide Emergency Scheme
8. Port Louis Flood Response Plan

Source: Ministry of Environment, Solid Waste Management and Climate Change.

13. Stricter enforcement of environmental regulations in residential construction could help mitigate climate risks and encourage further development of private insurance. In small islands, the low penetration of private insurance also reflects unfit construction that does not meet insurance standards (IMF, 2019). While in 2023 there were 4,086 new residential construction permits issued in Mauritius, only 3 environmental impact assessment (EIA) licenses were approved.

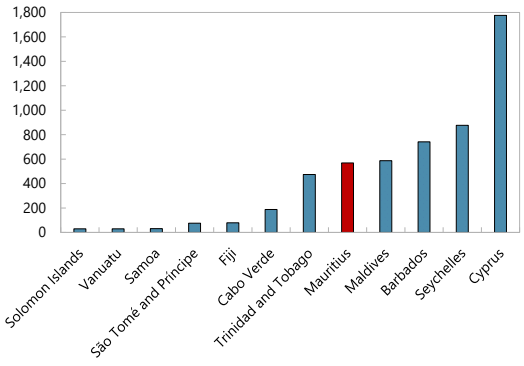
[4] See also Bah and Abila (2022) who confirm the relatively low insurance coverage in Mauritius, despite being among the highest in sub-Saharan Africa.

[5] For example, in the aftermath of cyclone *Belal* in January 2024, the Financial Services Commission announced that vehicle owners lacking adequate private insurance for cyclone and flood would be compensated by the government based on the estimated cost of repairs.

For non-residential projects, the ratio was 510 to 23.[6] Furthermore, while the number of construction permits has increased over time, the number of EIA has remained constant (Figure 6). This suggests the need to better adapt construction regulations to climate and environmental challenges.

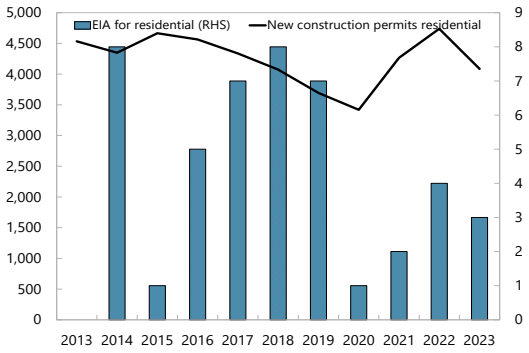
14. Concessional financing remains key to support well-targeted government measures to help households adapt to climate change, as revenue collected from environmental taxes remains low. Revenue from climate-related taxes in Mauritius only yielded Rs 972 million (0.2 percent of GDP) in FY2022/23 (Figure 7). While the introduction of the Climate Levy in FY24/25 was initially expected to boost climate-related revenue by Rs 5 billion, more resources are needed to finance climate adaptation projects. Given the limited fiscal space, financing from concessional sources could be an option . Mauritius should consider reforms to have greater access to global climate funds and climate-related debt instruments. Potential reforms include strengthening the track record of planning, appraisal, execution, and reporting of climate-related projects, implementing a tracking system to monitor and report climate change-related expenditure, and publishing in the budget a fiscal risk statement identifying climate-related risks. These constitute major eligibility criteria for accessing financing from global climate funds (IMF, 2022).

Figure 5. Selected Small Island States: Number of Non-Life Insurance Policies
(per 1,000 adults)



Sources: Country authorities; and IMF staff calculations.

Figure 6. Mauritius: Number of New Residential Construction Permits and Environmental Impact Assessments, 2013–2023
(in units)

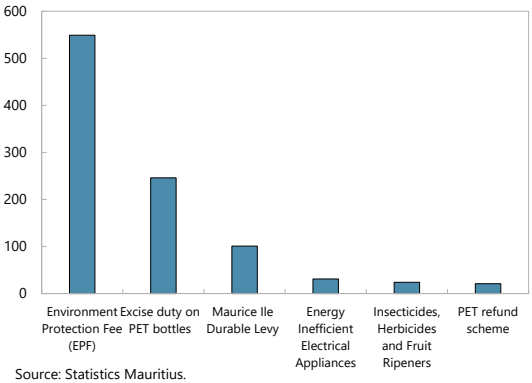


Source: Statistics Mauritius.

[6] As per Mauritius' Environment Protection Regulations 2006, EIA is a study that predicts the environmental consequences of a proposed development. It evaluates the expected effects on the natural environment, human health and on property. The study requires a multi-disciplinary approach.

Figure 7. Mauritius: Amount Collected for Green and Environmental Taxes, FY2022/23

(In millions of rupees)



Source: Statistics Mauritius.

F. Conclusions

15. Extreme weather events impose a significant financial burden on Mauritian households, underscoring the need for policies to help mitigate the costs and adapt to these shocks. Policies should consider focusing on expanding access to private insurance, well-targeted government support, and risk-based land occupation plans. Specifically, homeowners' insurance could be made more affordable. Construction regulations may be adapted to climate and environmental challenges, including through leveraging climate risk analysis into the construction authorization and licensing processes, which could also help reduce the cost of private insurance. Before the private insurance market can fully develop, well-targeted government support measures will remain important. Given limited fiscal space, low-cost financing options for government support include multilateral concessional financing.

References

Aumeer, B. S., Sainooah-Murdan, R. & Rughoobur, S. (2015). The Mauritian Insurance Industry in the next Decade: Challenges and Opportunities. *University of Mauritius Research Journal*, *21*, 1-42.

Bah, M. & Abila, N. (2022). Institutional determinants of insurance penetration in Africa. *The Geneva Papers on Risk and Insurance - Issues and Practice*. *(2024)*49,138–179. https://doi.org/10.1057/s41288-022-00278-2.

Cebotari, A. & Youssef, K. (2020). Natural Disaster Insurance for Sovereigns: Issues, Challenges and Optimality. *IMF Working Paper* 2020/003

International Monetary Fund. (2019). Building Resilience in Developing Countries Vulnerable to Large Natural Disasters. *IMF Policy Paper*

International Monetary Fund (2022). Mauritius: Selected Issues. IMF Country Report No. 22/224

Republic of Mauritius. Financial Services Commission. *Cyclone Belal - Setting up of a Special Desk at the FSC*. Communique. January 16, 2024.

United Nations Mauritius (UN). (2021). 2021 UN Country Annual Results Report—Mauritius.

World Meteorological Organization (WMO). (2017). *Global Guide to Tropical Cyclone Forecasting*. WMO—No. 1194. Retrieved January 24, 2025.

World Meteorological Organization. *Tropical Cyclone Freddy is the longest tropical cyclone on record at 36 days: WMO.* Press Release. July 02, 2024. https://wmo.int/news/media-centre/tropical-cyclone-freddy-longest-tropical-cyclone-record-36-days-wmo. Retrieved January 24, 2025.