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REPUBLIC OF THE MARSHALL ISLANDS

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CONTENTS

BUILDING RESILIENCE TO NATURAL DISASTERS AND CLIMATE CHANGE IN THE MARSHALL ISLANDS

The Republic of Marshall Islands (RMI) faces severe challenges due to its vulnerability to climate change and natural disasters, resulting in economic repercussions such as erosion, flooding, droughts, and damage to essential infrastructure. Leveraging a dynamic general equilibrium model—Debt, Investment, Growth, and Natural Disasters (DIGNAD) Model, this paper shows that resilient infrastructure investments and effective public investment management can significantly reduce GDP contraction following rapid onset and slow-moving natural disaster shocks. Tax reform, featured by a permanent increase in the VAT rate, helps facilitate infrastructure restoration against persistent sea-level rise and boost private investment and long-term growth despite dampened consumption. To address substantial financing needs for climate-resilient infrastructure, maximizing climate funding is essential, which includes improving domestic revenue collection and mobilizing external resources from the renewed Compact and development partners. RMI must also strengthen its institutional capacity to access climate finance effectively. Given the limited financial envelope, prioritizing adaptation actions while maintaining fiscal sustainability is vital for the country's future resilience.

A. Vulnerability to Natural Disasters and Climate Change

1. As a remote archipelago situated in the Pacific Ocean, RMI faces significant challenges due to its vulnerability to climate change and natural disasters. Climate change, manifested as sea level rise (SLR), fluctuating sea temperatures, and inconsistent rainfall, has far-reaching consequences for Marshallese livelihoods and access to critical resources (RMI National Adaptation Plan (NAP), 2023). Such climate phenomena affect RMI's economy through multiple channels, including erosion and flooding, droughts, damage to electricity supplies and water resources, changes in fish stocks, and loss of coastal ecosystems, among others, leading to population displacement and changes in livelihoods (The World Bank's Country Climate and Development Report (CCDR) on Pacific Atoll Countries, 2024). Climate-related challenges vary across the 24 inhabited atolls and islands. Urban centers like Majuro and Ebeye experience coastal flooding and overloaded services due to inward migration, semi-urban communities face groundwater flooding, and rural areas struggle with food and water shortages due to soil salinization and saltwater intrusion.

2. Natural hazards, particularly SLR and typhoons, pose significant economic losses that, when intertwined with population decline, threaten to erode the country's long-term growth potential. With an average elevation of approximately 2 meters above sea level and nearly the entire population residing within 100 meters of the shoreline, SLR presents the primary physical challenge for the RMI. While typhoons are less frequent, they can be particularly devastating when they occur. The World Bank's CCDR on Pacific Atoll Countries estimates that a typical 1-in-10-year

event combined with a 0.5-meter rise in sea levels[1] could affect over 50 percent of urban areas in Majuro and more than 80 percent in Ebeye, resulting in annual damages equivalent to nearly 30 percent of GDP.[2] These climate risks, if left unaddressed, could undermine residents' confidence in the nation's long-term development prospects, further exacerbating the ongoing trend of outmigration. According to the Marshall Islands Social Security Administration (MISSA),[3] one-third of the population has relocated to the United States since 2011.

3. The profound impact of natural disasters calls for a comprehensive and proactive plan for climate adaptation. The 2023 NAP for the Marshall Islands serves as a comprehensive "survival plan" that aims to help the nation adapt to the impacts of climate change, particularly SLR, extreme weather, and droughts. It's a bottom-up, community-driven process that involves integrating adaptation strategies into national policies and development goals. Recognizing the uncertainty around the speed of SLR and the intensity of natural disasters and access to climate funding, the 2023 NAP proposed a multi-phase, contingent approach based on SLR projections to physically cope with climate risks.

- 2024-2040: Establish institutional frameworks and prioritize immediate, low-risk adaptation actions, including low technology community initiatives, nature-based solutions, and infrastructural improvement, to safeguard the most vulnerable communities.
- 2040-2070: Re-evaluate existing protective measures based on updated SLR data, leading to decisions on which atolls can be sustainably protected, the necessity of planned relocations, and the building of infrastructure in designated community hubs.
- 2070-2100: Sea levels are expected to rise by 0.5 meters, a review of strategies will be necessary, focusing on either further investment in protective structures or planned relocations.
- Beyond 2150: With a possible SLR of 2 meters, critical decisions regarding migration or alternative land will need to be made.
- The plan also includes atoll-specific strategies, with urban centers like Majuro and Ebeye focusing on coastal barriers and future relocations, semi-urban atolls will invest in both hard and soft infrastructure, and rural atolls will initially implement nature-based and low-cost solutions.

4. The adaptation costs to protect the country against SLR and natural disasters are substantial and increasing over time, given the RMI's unique geographic characteristics. The CCDR estimates indicative costs for physical adaptation fully against a 0.5 meters SLR, anticipated to occur by 2070-2100 under a moderate climate change scenario. Adaptation actions in this period entail seawalls and other hard-infrastructure measures in urban centers, and inland relocation, house

[1] A 0.5 meter of sea-level rise is most likely between 2070 and 2110 (Medium Emissions Scenario SSP2-4.5), with the worst-case scenario by 2050 (High Emissions Scenario SSP5-8.5).

[2] This figure includes both direct and indirect costs, as well as losses from areas becoming inhabitable.

[3] Data source: MISSA's registration for the Universal Basic Income ("Enra" program).

raising, and Nature-based Solution (NbS) in intermediate and outer islands. The estimated discounted (present value) costs for RMI amount to approximately US$ 5.0 billion, which equates to about 19 years of 2023 GDP, or nearly US$ 90,000 per capita. In the long term, the cost of protection for fully addressing higher levels of SLR (up to 2 meters) carries even greater costs.[4] Hence, the country faces critical challenges on how to optimize fundraising efforts and effectively adapt within the envelope of available funding.

5. The significant costs of adaptation investments highlight the urgency to mobilize additional financing sources both domestically and internationally and enhance public investment efficiency (PIE). As previously noted, comprehensive insurance against climate shocks is unfeasible and too costly compared to the size of the economy.

- Domestically, actions that increase revenue collection can create fiscal space to fund adaptation investments.[5] Strengthening medium-term fiscal frameworks, including through green Public Financial Management (PFM), can help to manage the fiscal risks from natural disasters, climate change, and volatile sovereign rents, along with debt-related risks. On the other hand, increasing public debt to fund these investments is also not feasible given the country's low debt carrying capacity.

- Externally, securing substantial concessional climate adaptation financing and collaborating with international organizations, development partners, and NGOs will be essential for accessing and utilizing climate finance effectively. Table 1 below summarizes the current external climate finance landscape and financing avenues for the RMI.
- Meanwhile, a high PIE indicates a larger stock of public capital for a given investment rate, resulting in higher output. PIE can be enhanced by adopting advanced technologies, minimizing waste, and strengthening procurement procedures.

6. Despite efforts to create fiscal space, a non-trivial financing gap likely remains in the RMI, similar to other PICs, which hinders effective protection against climate change impacts. This study aims to evaluate how alternative infrastructure investment and financing strategies can mitigate the macroeconomic effects of SLR and one-off natural disasters, and their implications for long-term growth. The analysis aligns with the first phase of the 2023 NAP, which covers the period from 2024 to 2040. In contrast to the more distant phases outlined in the 2023 NAP, the adaptation strategy for this initial phase is informed by more precise SLR projections and emphasizes low-risk, financially feasible adaptation measures. This approach will facilitate the development of realistic alternative scenarios based on the authorities' strategy during 2024-2040.

[4] The 2023 NAP presented a lower yet still substantial estimate of the adaptation cost in both scenarios. For further details, please see page 25 of the 2023 NAP.

[5] See "Annex VII. Revenue Mobilization for a Sustainable Future: The case of the Republic of Marshall Islands" in Policy Note for the 2025 Article IV Consultation.

Table 1. Marshall Islands: Access to External Climate Finance

Source	Type	Amount (USD mil)	Purposes
The United States (Climate Fund)	Grant	20	In FY 2024, under the Compact of Free Association (Compact), the US provided $20 million in grant assistance to create a Climate Fund to help the RMI address SLR and other environmental issues.
The United States (Sector Grant)	Grant	50 per year	The Compact provides annual sector grants of $50 million, adjusted by 2 percent per year as inflation indexation. A minimum of 30 percent and maximum of 50 percent of the total value of the Sector Grant must be allocated to Public Infrastructure.
Multilateral Climate Funds	Grant	N/A	The RMI has access to global climate financing instruments, including the Green Climate Fund (GCF), Adaptation Fund and the Global Environment Facility, to support climate priorities, but actual financing has been limited due to complex and lengthy accreditation requirements for direct access to climate funds (RMI 2023 Article IV Consultation Staff Report, Annex VII).
World Bank (Cat DDO)	Grant	21	The operation includes a US$9 million development policy grant and a US$12 million Cat DDO development policy grant, which willbe available for post-disaster efforts if an eligible catastrophic event occurs.
ADB (Disaster Resilience Program)	Grant	6	In the event of a disaster, the ADB-supported Pacific Disaster Resilience Program will provide the participating countries with quick disbursing, flexible budget support to expedite the recovery process.

Sources: IMF, WBG, and ADB.

7. The remaining sections of this study are organized as follows. Section B presents the model-based framework, calibrates the model to the RMI's economy, and outlines the investment and financing scenarios of interest. Section C discusses the simulation results under various scenarios, while Section D draws policy implications for potential pathways forward.

B. Model-Based Scenario Analysis

8. This study employs a model-based approach to evaluate the macroeconomic impacts of various climate adaptation pathways in the RMI under different scenarios. Utilizing the Debt-Investment-Growth and Natural Disasters (DIGNAD) model, as outlined by Marto and others (2018), it simulates the effects of natural disasters within a dynamic small open economy framework. The model examines the damage to public and private capital, temporary productivity losses, reduced efficiency in public investment, and declines in sovereign's creditworthiness. It also assesses debt sustainability risks post-disaster and analyzes the impacts of proactive policies, such as resilient infrastructure development, increased fiscal buffers, and enhanced efficiency for public investment, while addressing issues of public investment inefficiency and absorptive capacity constraints.

9. The DIGNAD model is calibrated using specific macroeconomic indicators from the RMI. Users can specify the size and timing of disasters, along with their economic impacts (refer to Table 2 for initial values and parameters, which are derived from historical or forward-looking averages to reflect the RMI's steady state). The RMI economy is characterized by its heavy reliance on imported capital goods and raw materials, which tend to be more costly than non-tradable inputs used in the production of public and private capital. Given the ongoing population decline, the trend growth rate, in the absence of natural disasters, is set at 2.3 percent per annum, aligning with the average real GDP growth rate projected for FY25-30. Furthermore, the steady-state value-added tax (VAT) rate is assumed to be 10 percent, accounting for the tax reform scheduled for implementation in FY27. The government savings-to-GDP ratio, designated solely for the contingency fund, is set at 4.7 percent of GDP, reflecting the available contingency credit lines.[6]

10. The public infrastructure investment-related parameters are specified as follows. The steady state of public standard infrastructure investment is set as follows. to 7.6 percent of GDP.[7,8] This corresponds to the "continue business-as-usual public investment" in standard capital during FY26-30. The expenditure will be financed through a mix of grants and concessional borrowing (see Table 3), including (i) 30 percent of Sector Grant allocated to infrastructure investment; (ii) Climate Fund[9]; (iii) Grants from development partners; and (iv) Tax reforms – based on our macro framework (e.g., 10 percent VAT in FY2027). Meanwhile, the steady state of adaptation infrastructure investment is set to zero. The average returns on standard and adaptation (or climate-resilient) infrastructure are set at 25 percent and 30 percent, respectively, at the initial steady as per Buffie and others (2012) and Marto et al. (2018). Adaptation capital depreciates at a lower rate of 3.0 percent compared to the 7.5 percent rate for standard infrastructure (Marto, et al., 2018). Efficiency of standard public investment[10] is calibrated at 50 percent corresponding to the LIC average (Aligishiev et al., 2023). Adaptation investment is assumed to be 35 percent more expensive than standard investment—higher than the standard 25 percent in literature—due to lack of skilled labor in the RMI, and resilient infrastructure requires imported materials for construction, while the ability of adaptation capital to withstand natural disaster is assumed to be lower than that in literature.

11. Two natural disaster scenarios are considered. The DIGNAD model facilitates the assessment of GDP loss resulting from natural disaster shocks through various channels, including: (i) permanent damage to public infrastructure, (ii) permanent damage to private capital, and (iii) temporary reductions in productivity. The model posits that natural disasters do not affect reconstruction efficiency or the external public debt risk premium. The government aims to fully

[6] This includes a $6 million Catastrophe Deferred Drawdown Option (CDF) from the ADB and a $12 million Catastrophe Deferred Drawdown Option (Cat DDO) from the WB, totaling $18 million (or 4.7% of GDP in 2030).

[7] This includes the net investment associated with trend growth and the outlays on operations and maintenance.

[8] In comparison, the average for low-income countries in sub-Saharan Africa is about 6 percent in 2008 (Briceño-Garmendia, Smits, and Foster 2008).

[9] Only available data source is the Compact document 01. COFA Agreement 2023.pdf. The stock of Climate Fund is $20 million. We assume $1.1 million per year, or about 0.3 percent of GDP, will be drawn starting FY26.

[10] In DIGNAD, high public investment efficiency implies a larger stock of public capital for a given investment rate and hence higher output. Public investment efficiency can be affected by many factors, including poor technologies, waste, or corruption.

restore the damaged infrastructure within five years, commencing in the same year as the disaster event occurs. As discussed in the previous section, the RMI is prone to both recurring shocks such as the SLR and the one-off natural disaster shocks such as flooding. Hence, we consider two shock scenarios:

- ***Disaster Scenario 1*:** A one-off natural disaster (e.g., a devastating typhoon) hits in 2031, resulting in a reduction of 20 percent of GDP.[11]

- ***Disaster Scenario 2*:** A recuring shock (i.e., SLR and the associated coastal flooding), with a reduction of 2 percent of GDP per annum.[12]

12. Public infrastructure investment (standard and adaptation) paths. The urgency of climate change adaptation in the RMI is paramount. Although fully protecting the country from climate change impacts may seem prohibitively costly, timely actions can significantly reduce potential damage. To illustrate this, we present four scenarios that demonstrate how varying investments in adaptation infrastructure and financing strategies can affect macroeconomic variables in the face of natural disasters.

- ***Baseline Scenario: Boost Standard Investment with Additional Grants.*** In the baseline scenario, the government will leverage additional Compact grants to enhance standard public infrastructure investment during FY26-30 (see Table 4). Specifically, 40 percent of Sector Grants will be allocated to infrastructure investment, compared to 30 percent under steady-state conditions. Collectively, these measures are projected to result in a 3.2 percent increase in infrastructure investment as a percentage of GDP each year for the five years before the anticipated natural disaster in 2031. Furthermore, in the event of a one-off natural disaster, the RMI can access contingency credit lines from the ADB and the WBG, amounting to a cumulative 4.7 percent of GDP for the 5-year reconstruction period (approximately 0.9 percent of GDP per annum).[13]

[11] WB CCDR (2024) chart shows an additional 20 percent GDP loss (FIGURE 4.2 and 4.3). Looking at reasonable comparators, the one-time GDP loss in Palau is set at 9 percent. In Maldives' case, natural disaster shock is assumed to destroy 10 percent of both private and public capital and to trigger a symmetric productivity drop in both the tradable and non-tradable sectors. We use 10 percent here.

[12] According to WB CCDR (2024), climate-related events cause significant economic losses, estimated at 3-4 percent of GDP annually in RMI and Kiribati in 2023, and almost 7 percent each year in Tuvalu (FIGURE 4.1). On the other hand, the Maldives team set 0.3 percent of GDP (yearly) as the average economic damages from floods in a small sub-tropical economy based on estimates by Bayoumi et al. (2020). We took the average of the two.

[13] Access to these funds is contingent on meeting specific conditions, such as a major disaster as stipulated in Disaster Scenario 1. Consequently, these credit lines may not be available under Disaster Scenario 2, as the annual SLR does not fulfill the necessary criteria.

Table 2. Marshall Islands: Calibrated Parameters and Steady State Values

Parameter Description	Values
Real Economy	
Trend growth rate in absence of natural disasters	2.3%
Value added in NT-sector	70.0%
Cost share of NT-inputs in the production of private capital	40.0%
Cost share of NT-inputs in the production of public capital	40.0%
Remittances to GDP ratio	12.2%
Imports to GDP ratio	73.1%
Public Finance and Debt	
Consumption tax rate (VAT)	12.0%
Labor income tax rate	12.9%
Domestic public debt to GDP	0.0%
Concessional public debt to GDP	17.3%
Commercial public debt to GDP	0.0%
Private external debt to GDP	0.0%
Grants to GDP	37.6%
Contingency Fund or Natural Disaster Fund	4.7%
Public infrastructure related	
Public infrastructure investment to GDP ratio	7.6%
Public adaptation infrastructure investment to GDP ratio	0.0%
Return to standard infrastructure	25.0%
Return to adaptation infrastructure	30.0%
Depreciation rate of standard public infrastructure	7.5%
Depreciation rate of resilient public infrastructure	3.0%
Efficiency of public infrastructure investment	50.0%
Scaling parameter determining ability of adaptation capital to withstand natural disaster	15.00
Cost ratio adaptation vs standard investment [adaptation is % expensive than standard]	35.0%

Source: IMF staff calculations.

Table 3. Marshall Islands: Financing of Standard Public Infrastructure Investment at the Steady State

(percent of GDP)

	Average (FY2026-30)
Public Infrastructure Investment	**7.6%**
Grants from Foreign Governments	6.4%
Of which:	
Sector Grant (30%)	4.6%
Climate Fund	0.3%
Others	1.4%
Grants from MDBs	1.2%
Other (operating balance; VAT 10%)	0.1%

Source: IMF Staff Calculations.

Table 4. Marshall Islands: Financing of Public Infrastructure Investment—Deviation from Steady State

(Average of FY2026-30, percent of GDP)

	Baseline	Tax Reform	Adaptation 1	Adaptation 2
Public Infrastructure Investment	+3.2%	+3.7%	+3.7%	+3.7%
Grants from Foreign Government	+1.6%	+1.6%	+1.6%	+1.6%
Of which:				
Sector Grant (40%)	+1.6%	+1.6%	+1.6%	+1.6%
Climate Fund	0	0	0	0
Others	0	0	0	0
Grants from MDBs	0	0	0	0
Other (operating balance; VAT rate=12% in the baseline and 15% other scenarios)	+1.6%	+2.4%	+2.4%	+2.4%

Source: IMF Staff Calculations.

- ***Tax Reform Scenario**: **Boost Standard Investment with Tax Reform.*** In addition to the baseline scenario, it is assumed that the government's tax reform will further create fiscal space to finance infrastructure investment. In this scenario, the VAT rate will increase from 12 percent in the baseline to 15 percent starting in FY27, with the resulting an additional tax revenue of 0.5 percent of GDP earmarked for infrastructure development.

- **Adaptation 1 Scenario:** Boost Resilient Investment. In this scenario, the government operates within the same financing framework as in the Baseline Scenario. However, rather than allocating

funds towards standard public infrastructure, the government directs the additional 4.0 percent of GDP per annum (representing a deviation from the steady state) towards investment in adaptive public infrastructure for each of the five years preceding the anticipated one-off natural disaster.

- **Adaptation 2 & PIE Scenario:** Improve Public Investment Efficiency. This scenario maintains the same financing and investment framework as Adaptation 1 Scenario. In addition, the country implements reforms aimed at enhancing the efficiency of public investment by 20 percentage points, reaching an average efficiency level of 70 percent, which aligns with that of Emerging Market and Developing Countries (EMDCs).

13. Post-disaster Financing Scenarios: Based on the above specified fiscal parameters for financing public infrastructure investment, the RMI government will address the residual fiscal gap by adjusting fiscal instruments, such as taxes and transfers. Given its limited debt-carrying capacity, the RMI government will refrain from issuing public domestic and external commercial debt to close this gap.

C. Simulation Results

One-off Natural Disaster

14. Figure 1 illustrates the impulse response of key macroeconomic variables under the one-off natural disaster scenario, benchmarked against the baseline scenario (indicated by the dashed blue line)**.**

- **Baseline Scenario**: In this scenario, the government enhances standard public infrastructure spending over a five-year period, financed by additional grants. When the natural disaster strikes in 2031, despite being significant, the investment mitigates the GDP loss by approximately 5 percentage points, resulting in a contraction of about 15 percent of GDP. Private investment and consumption experience a sharp decline due to diminished returns on investment and loss of income, respectively, while the total public debt-to-GDP ratio escalates. As the government initiates the reconstruction of the damaged infrastructure during the post-disaster period (2031-2035), there is a gradual recovery in private investment, consumption, and GDP, accompanied by a downward trend in the public debt-to-GDP ratio.

- **Tax Reform Scenario**: This scenario examines the effects of enhancing standard investment through tax reform. The increase in the VAT rate from 12 percent to 15 percent results in an additional 0.5 percent GDP per annum in standard infrastructure investment compared to the baseline. However, the impact of this tax reform on GDP and the total public debt-to-GDP ratio is marginal. Conversely, the permanent elevation of the VAT rate discourages private consumption following the completion of post-disaster construction in 2035. This aligns with the understanding that a permanent tax increase is not a viable mitigation strategy for a country primarily susceptible to one-off natural disasters, especially when public investment relies on tax

revenue mobilization and grants rather than debt-creating mechanisms, thereby eliminating the potential for a growth-debt trade-off.

- **Adaptation 1 Scenario:** This scenario considers an increase in climate-resilient investment rather than standard infrastructure investment. The government is projected to scale up investment in climate-resilient infrastructure over a five-year period, financed through additional grants and tax reform. By allocating the same financial resources to adaptation capital, GDP losses from natural disasters can be significantly curbed, thereby stabilizing the public debt-to-GDP ratio. Furthermore, investments in climate resilience are anticipated to stimulate private investment during the post-disaster reconstruction phase and beyond.

- **Adaptation 2 & PIE Scenario**: This scenario highlights the importance of enhancing PIE. The results demonstrate that PFM reforms can amplify the benefits derived from resilient infrastructure investments. Improved investment efficiency not only diminishes GDP losses from natural disasters but also facilitates a more expedited recovery. Notably, Figure 1 indicates that resilient investments are conducive to sustainable long-term GDP growth, underpinned by both private investment and consumption growth.

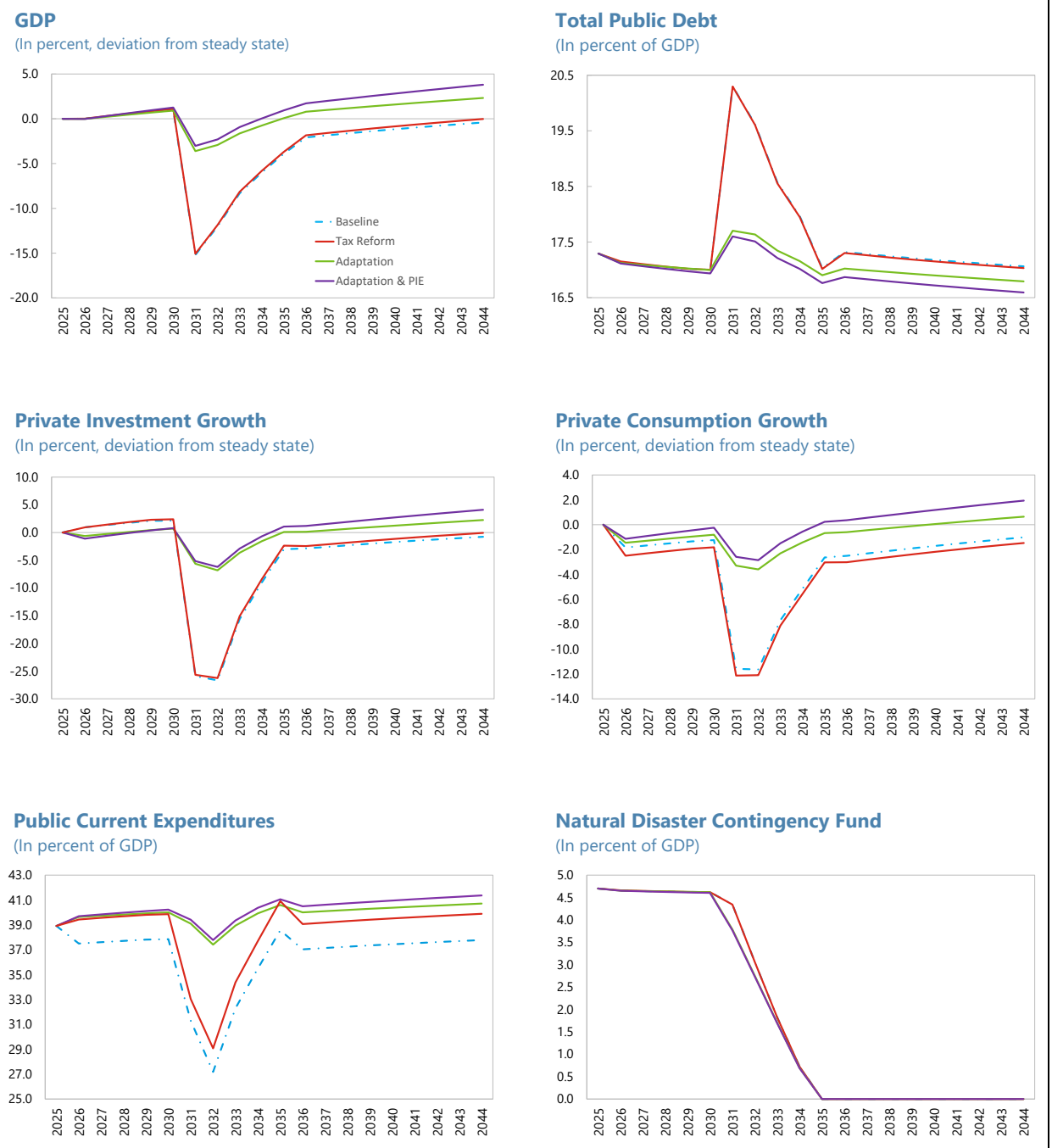
Recurring Shocks Due To Sea Level Rise

15. Figure 2 illustrates the impulse response of key macroeconomic variables under the recurring shock scenario, benchmarked against the baseline scenario. It is important to note that recurring climate shocks result in persistent annual GDP losses, prompting the government to invest in either standard or adaptation infrastructure to restore damaged capital and potentially create new infrastructure when additional resources are available (Cantelmo et al., 2019). Although the annual GDP loss attributable to sea level rise (SLR) is relatively modest at 2 percent of GDP, the cumulative impact over time could exceed that of a large, one-off natural disaster as previously discussed.

- ***Baseline Scenario:*** Under parameters calibrated to the fundamentals of the RMI, the baseline scenario indicates a persistent and exacerbating GDP loss that will exceed 4.5 percent per annum in the long run, compared to a steady state devoid of recurring shocks. This scenario is characterized by a consistent decline in both private investment and private consumption growth relative to the steady state. Furthermore, recurrent spending on replenishment tends to crowd out government transfers to households.

- ***Tax Reform Scenario*:** In stark contrast to the one-off natural disaster scenario, a permanent increase in the VAT rate aimed at financing infrastructure replenishment yields significant outcomes in the context of recurring shocks. In this scenario, the mobilized revenues are allocated to restoring and constructing standard infrastructure, reducing the average annual GDP losses by 1.3 percentage points over the 20-year horizon and facilitating an increase in private investment by approximately 0.9 percentage points per annum. However, it is worth noting that the adverse impact of the increased tax rate may prevail, suppressing private consumption until sufficient public infrastructure is progressively developed by FY2038.

Figure 1. Marshall Islands: Simulation Results Under One-off Natural Disaster

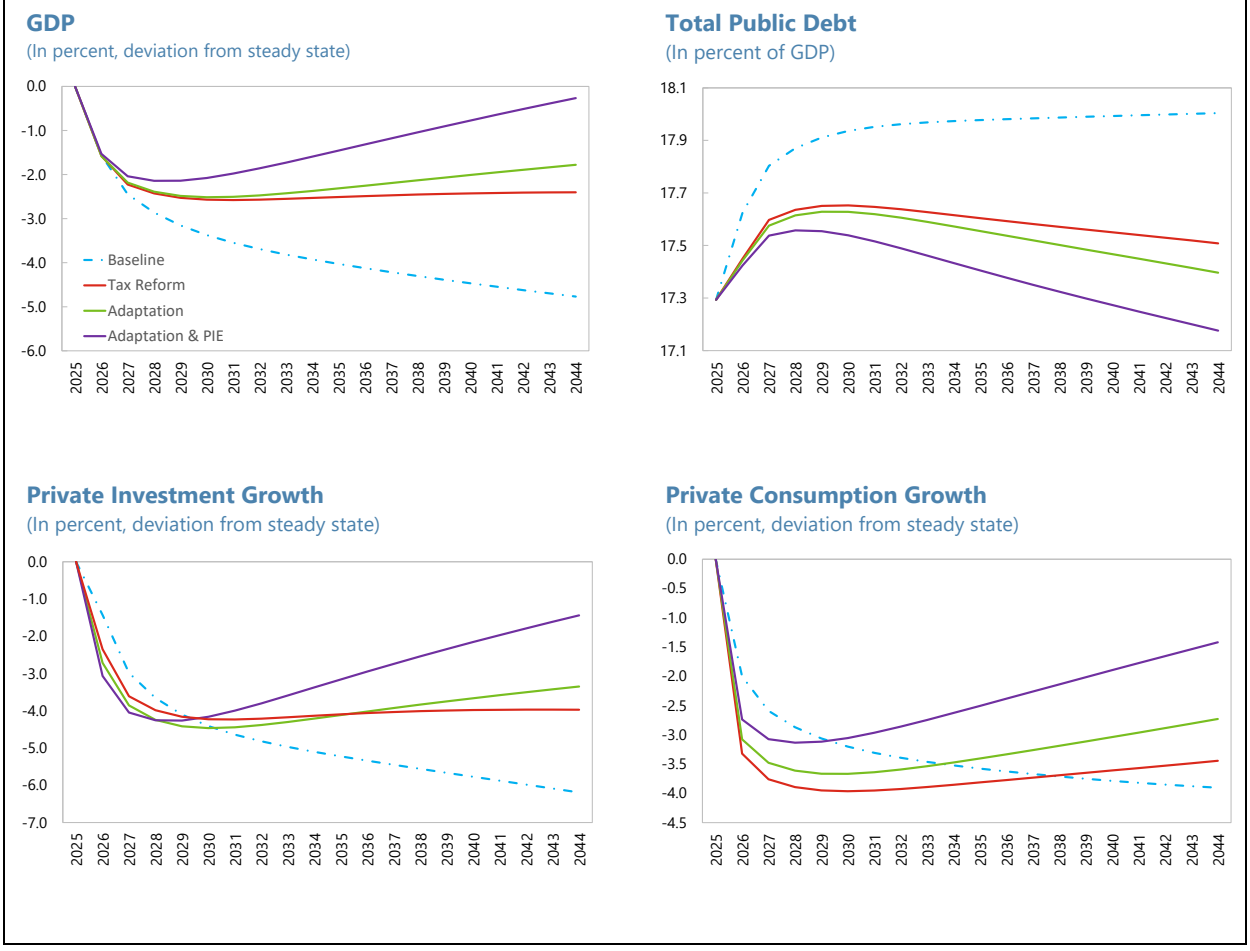


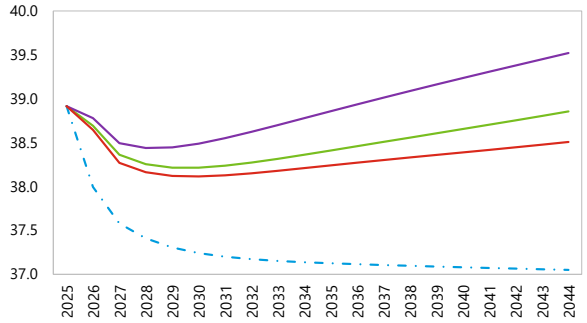
Source: IMF Staff Calculations.

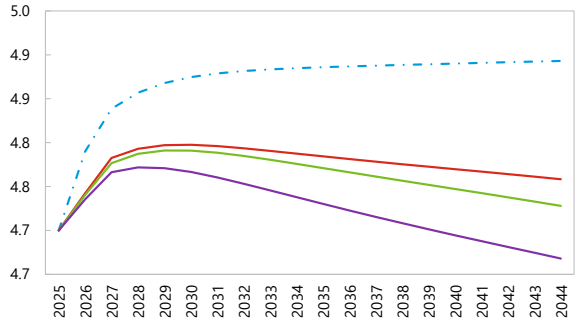
- ***Adaptation 1 Scenario***: This scenario employs mobilized resources from additional grants and tax reform to replenish and develop new climate adaptation infrastructure. Following an initial decline, as climate-resilient infrastructure is established, the GDP level is expected to gradually ascend towards the steady state. As a result, private investment and consumption are anticipated to recover more swiftly in the long run.

- ***Adaptation 2 & PIE Scenario***: The benefits of investing in adaptation infrastructure can be significantly enhanced through improvements in PIE. With a 20 percent improvement in PIE, GDP is projected to recover from previous losses and return to steady state levels in the long run. In comparison to the baseline, a combination of adaptation investment and PIE improvement is expected to mitigate cumulative GDP losses over the next 20 years by approximately 25 percent in terms of steady state GDP.

Figure 2. Marshall Islands: Simulation Results Under Recurring Natural Disaster







Source: IMF Staff Calculations.

D. Concluding Remarks

16. Adaptation investment helps mitigate the economic impact of climate challenges that the RMI is facing. The model simulations for both the one-off natural disaster and recurring shocks from sea level rise highlight the critical role of resilient investments and efficient public investment management in mitigating economic impacts. In the one-off scenario, enhanced public infrastructure investment helped reduce GDP contraction, while tax reforms proved ineffective for long-term growth. In contrast, the recurring shocks led to a permanent annual GDP loss, with a VAT increase facilitating infrastructure restoration and boosting private investment despite dampened consumption. Both adaptation scenarios demonstrated that climate-resilient investments, supported by additional grants and tax reforms, could significantly stabilize GDP and promote faster recovery. Notably, improvements in PIE could enhance the benefits of adaptation investments, leading to a substantial reduction in cumulative GDP losses over time.

17. Maximizing climate funding is crucial to meet the significant financing needs for developing climate-resilient infrastructure. Domestically, enhancing revenue collection can create the necessary fiscal space to support adaptation investments. Simulation results suggest that mobilizing resources through tax reform can effectively mitigate recurring climate shocks. Externally, better utilization of the renewed Compact, including sector grants, can provide essential resources for climate-resilient infrastructure. Beyond the Compact, securing substantial concessional climate adaptation financing and collaborating with international organizations, development partners, and NGOs is vital for effectively accessing and utilizing climate finance. Accessing climate funds, such as the Green Climate Fund (GCF), typically involves a rigorous application process that requires the country demonstrate their capacity in PIM and PFM; therefore, RMI should focuse on building its institutional capacity to access climate finance more effectively. Additionally, understanding how peer countries access these resources through development partners could prove beneficial.

18. Given the available financing envelope, it is important to prioritize and sequence key adaptation actions, while keeping a balance between building adaptation pathways and ensuring fiscal sustainability in the medium- and long-term. Although this paper does not delve into the specifics, it is essential for the government to consider several trade-offs. These include the

allocation of limited financial resources across various islands and locations on the core islands, as well as the decision between investing in human capital—such as education and health—and enhancing physical infrastructure, all supported by efficient and transparent governance and robust institutional frameworks.

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