



HIGH-LEVEL SUMMARY TECHNICAL ASSISTANCE REPORT

THE BAHAMAS

Technical Assistance Project on Debt-Investment-
Growth and Natural Disasters (DIGNAD)

June 2026

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Institute for Capacity Development

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The Bahamas: Technical Assistance Project on Debt-Investment-Growth and Natural Disasters (DIGNAD)

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The *High-Level Summary Technical Assistance Report* series provides high-level summaries of the assistance provided to IMF capacity development recipients, describing the high-level objectives, findings, and recommendations.

ABSTRACT: The technical assistance (TA) scoping mission to Nassau (November 2025) aimed to establish a robust framework for quantifying the macroeconomic impacts of climate-related natural disaster risks in The Bahamas. At the request of the Central Bank of The Bahamas (CBoB), the project focuses on operationalizing the DIGNAD model to assess trade-offs between debt financed resilient infrastructure, fiscal sustainability, and economic growth. The mission evaluated the authorities' readiness to incorporate these risks into medium-term projections and provided hands-on training on DIGNAD. Key outcomes include upgrading the forecasting toolkit to support evidence-based policy design and climate-resilience planning.

JEL Classification Numbers: O11,O23,O47

Keywords: Macroeconomic Frameworks, Technical Assistance, Debt-Investment-Growth, Natural Disasters, IMF

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Background Information

The geographic location and narrow economic base of The Bahamas create significant structural exposure to frequent and costly climate-related natural disaster risks. The country is highly dependent on tourism and financial services, which together account for approximately 85 percent of GDP. These risks are particularly acute; over the past decade, natural disasters have caused annual damages averaging 3.2 percent of GDP, with projections suggesting these costs could increase by over 30 percent under higher global warming scenarios (The Bahamas: 2024 Article IV Staff Report).

Addressing these vulnerabilities requires a significant scaling up of climate-resilient infrastructure investment supported by robust analytical frameworks. Meeting resilience investment needs is estimated to require an additional **1.8 percent of GDP annually** in capital spending through 2030, which is well above current allocations (The Bahamas: 2024 Article IV Staff Report).

Strengthening the analytical framework for climate-resilient macroeconomic policy remains a top priority for the Bahamian authorities. In June 2025, the CBoB formally requested TA to develop and operationalize the **DIGNAD model**—a framework specifically designed for small economies prone to natural disasters—to assess the trade-offs between debt-financed infrastructure, fiscal sustainability, and growth resilience.

Scoping Mission Key Findings

The mission identified opportunities to further align disaster-related macroeconomic modeling, alongside strengthening coordination frameworks and addressing areas for data enhancement.

There is an opportunity to further strengthen the analytical framework by developing an integrated macroeconomic model that systematically incorporates climate-related natural disaster risks into projections and policy analysis. This includes the evaluation of policy trade-offs between standard and resilient infrastructure investment. Currently, while the CBoB and the Ministry of Finance (MoF) are the primary actors, there is a potential for more structured coordination mechanism for disaster-related macroeconomic analysis, as collaboration during forecasting rounds remains largely informal. Furthermore, existing forecasting toolkits, including the CBoB's **Comprehensive Adaptive Expectations Model (CAEM)**, developed by a recent Technical Assistance project with the Institute for Capacity Development (ICD), could be further augmented to include disaster shocks, specific parameter calibration for resilience, or explicit debt-investment-growth linkages.

Strategic data integration and technical capacity building are essential to further developing current disaster risk modeling. Specific findings regarding the technical and data environment include:

- **Historical Data Limitations and systematic use of analysis:** Post-disaster damage assessments are conducted by the Disaster Risk Management Authority in collaboration with international organizations, and these results should be systematically incorporated into forward-looking models to evaluate macroeconomic consequences.

- **Sectoral Data Gaps:** Tourism-sector inputs are primarily trend-based and could explicitly model potential shocks, such as hurricane-driven capital loss or sudden demand collapses.
- **Projections and Sustainability:** Macroeconomic and debt sustainability assessments prepared by the MoF have the potential to more fully account for both the sudden surge in reconstruction needs and probabilistic climate-related natural disaster risks, with the goal of preserving long-term fiscal sustainability.
- **Technical Barriers:** Although staff have access to MATLAB, there is a strong institutional preference for spreadsheet-based tools to facilitate cross-agency understanding and ensure accessibility for non-technical users.
- **Capacity Constraints:** There is a scope to further build up staff expertise in DSGE modeling and dedicate more staff for disaster-related scenario analysis at the MoF.

Proposed Action Plan

A multi-stage engagement strategy through 2026 aims to ensure the DIGNAD model is technically robust, tailored to the Bahamian economy and fully institutionalized within national processes.

The mission reached an *ad referendum* agreement on a project timeline that includes three missions and interim remote support. This phased approach entails commitments by the authorities to provide data and allocate staff, and by the IMF ICD team to deliver training and calibration support.

The core work program with specific objectives includes:

- **Calibration and Policy Analysis (February 2026):** A virtual mission will support the calibration of the DIGNAD model using historical Bahamian data and develop initial scenarios comparing standard versus resilient adaptation options.
- **Finalization and Manual (May 2026):** An in-person mission will finalize model customization, complete a **customized user manual**, and assist the authorities in presenting DIGNAD model-based simulation results to senior policymakers.
- **Satellite Model Integration:** It was agreed that the **DIGNAD model will serve as a satellite tool to the CAEM framework**, ensuring that specialized climate-related natural disaster risk inputs inform unified medium-term forecasts in a consistent manner.
- **Sustainability and Documentation:** The team will guide the core group in preparing "developer" and "operations" manuals to ensure the tool's institutional memory and ease of maintenance despite potential staff turnover.

Expected Outcomes

Successful implementation of this project will provide the authorities with an independent capacity for evidence-based analysis of climate-related natural disaster risks. Achieving this goal involves the following institutional advancements:

- **Institutionalization:** A fully operational DIGNAD model will be embedded into the macroeconomic policy decision-making processes of both the CBoB and the MoF.
- **Integrated Forecasting:** Specialized disaster-risk inputs, processed through the satellite structure, will be systematically integrated into unified medium-term forecasts.
- **Policy Coherence:** Authorities will have a structured framework to align macroeconomic planning with climate-resilience objectives.

Beyond the technical framework itself, the project aims to foster a high level of technical self-sufficiency among national staff. This capacity building will manifest through:

- **Scenario Independence:** The core team of 10 members will be trained to independently produce and interpret baseline and disaster scenarios.
- **Trade-off Analysis:** Staff will demonstrate the ability to quantify the specific benefits of ex ante resilience investment compared to ex post reconstruction, with grants, concessional debt, and commercial debt as different financing instruments.
- **Enhanced Reporting:** Technical reporting for IMF Article IV consultations, macroeconomic assessment will be significantly strengthened.