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POLICY BRIEF

Strengthening Resilience in Student Learning Amid Growing Hurricane Impacts in the Caribbean

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EXECUTIVE SUMMARY

Hurricanes pose a growing threat to education systems across the Caribbean, with Jamaica among the most exposed countries in the region. Evidence from secondary schools shows that hurricanes can significantly reduce student performance on standardized examinations, particularly when storms occur during the academic year. These learning losses are not short-lived; they translate into reduced returns to school systems and long-term human capital losses. This policy brief highlights key findings from recent empirical research and proposes actionable policy measures to protect educational outcomes in hurricane-prone Caribbean states.

INTRODUCTION

- Jamaica is one of the most hurricane-prone countries in the Caribbean, with frequent storms disrupting social and economic activity.
- While post-disaster responses often prioritize visible damage to school infrastructure, the less visible impacts on student learning and academic performance receive far less policy attention.
- School closures, loss of instructional time, damaged learning materials, and disruptions to teaching disproportionately affect students during critical examination periods.
- Recent events, including the impacts associated with Hurricane Melissa, underscore the continued vulnerability of Jamaica's education system to storm-related disruptions.
- Addressing hurricane-related learning losses is essential for protecting education outcomes, sustaining human capital development, and strengthening national resilience.

MAKING THE CASE

The following educational vulnerabilities have been observed with hurricane impacts:

- Hurricanes that strike during the academic year, such as Melissa, can significantly reduce student performance on standardized examinations.
- Performance in science subjects are expected to be most affected, given that disruptions to classroom instruction have lasting consequences for learning-intensive curricula.
- Hurricane-related learning losses can reduce the returns to formal school systems, resulting in substantial losses to both public and private investment in education.

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- The costs to repair damage to school buildings, equipment and teaching material means that funds which could have been used to enhance education must now be used to replace what was originally available.
- Parental support is common among successful students. In the aftermath of a hurricane this support is severely disrupted, especially for those students who temporarily relocate.
- These findings suggest that hurricane impacts on education are systematic rather than temporary, and that without targeted policy intervention, affected student cohorts may permanently underperform which can undermine national human capital development.

RECOMMENDATIONS

To reduce learning losses and strengthen education system resilience, policymakers should consider the following actions:

- **Integrate education into disaster risk management frameworks.** Post-disaster assessments should go beyond physical damage to schools and explicitly quantify the economic cost of hurricane-related learning losses. (short-term)
- **Implement rapid learning-recovery programmes.** Targeted post-disaster interventions including tutoring, condensed curricula, and examination support should be rapidly deployed to affected students, even when physical school facilities are unavailable. (short- to medium-term)
- **Provide targeted psychosocial support.** The trauma of hurricanes coupled with the pressure of national examinations should be dealt with through targeted psychosocial programmes, including initiatives which provide opportunities for students to process their experiences through various subjects such as the arts and sciences.
- **Prioritize learning in science subjects in recovery efforts.** Given their sensitivity to instructional disruption, these subjects require more learning time and external support. (short-to medium-term)
- **Build climate resilient school infrastructure.** Initiate a national policy to ensure the resilience of every school across Jamaica to weather events. This way, the restart of instruction for critical cohorts could happen much faster. This initiative could include the use of solar energy systems and satellite internet services. (short- to medium-term)
- **Investing resilient education systems.** Provide offline learning resources and low-tech strategies to ensure continuity of the instructional process. Amateur Radio (HAM) operations could provide redundancy for other communication systems including satellite internet. (medium- to long-term)
- **Make schools the focal point for post hurricane activity.** In addition to being used as shelters, schools can function as central spaces for post climate disaster activity. For example, the preparation of meals onsite can reduce the nutritional disruption of students after a disaster, provide temporary jobs and serve as a central point for the storage and dissemination of relief supplies. Students too should be included in some of these onsite activities. Valuable lessons are to be learnt during and after a disaster. (short- to medium-term)

* Short-term (0–6 months); **Medium-term (6–18 months); ***Long-term (18+ months)

CONCLUSIONS

Hurricanes are a recurring challenge to Jamaica. However, with proper planning, their impact on student learning can be reduced. The evidence of past hurricanes, across the Caribbean, provide evidence of what is likely in the wake of Melissa by highlighting how shocks can cause learning setbacks and undermine long-term human capital development. By integrating education into disaster planning and rapidly implementing carefully designed strategies, policymakers can protect learning outcomes and strengthen the resilience of the education sector.