



THE UNIVERSITY
OF THE
WEST INDIES

POLICY BRIEF

Strengthening Jamaica's Biosecurity for Post-Hurricane Recovery

No. 4 - December 11, 2025
Damion Whyte



EXECUTIVE SUMMARY

Hurricane Melissa has highlighted gaps in our biosecurity system, including a lack of baseline information on wildlife (native and invasive) across the island, increased risk of invasive species spreading, wildlife disease outbreaks, wildlife interactions with people, greater movement of native species in protected areas, and agricultural and public health vulnerabilities. Strengthening biosecurity across the environmental, agricultural, community and public health sectors is essential to assessing and preparing for future hurricane-related risks, protecting biodiversity, supporting recovery, and building resilience. This policy brief identifies gaps revealed by Hurricane Melissa and provides recommendations for short-, medium-, and long-term actions to safeguard Jamaica

INTRODUCTION

- Hurricane Melissa made landfall in Jamaica as a catastrophic Category 5 storm on October 28, 2025, causing unprecedented destruction.
- The extreme weather event, compounded by pre-storm flooding that disrupted Jamaica's ecosystem, displaced wildlife, damaged vegetation, damaged infrastructure and created new pathways for alien invasive species.
- The Jamaican ecosystem, including wildlife, was already significantly impacted by alien invasive species, climate change, habitat loss and remains highly sensitive to storm-related disturbance.
- Strengthening national biosecurity protocols will be important for recovery after Hurricane Melissa, enhancing resilience and safeguarding livelihoods.

POLICY BRIEF

Strengthening Jamaica's Biosecurity for Post-Hurricane Recovery

MAKING THE CASE

Hurricane Melissa exposed the following vulnerabilities:

- **There is minimal or no baseline information** on several species, making it difficult to assess the impact of the hurricane on affected wildlife populations and vegetation.
- **There are national vulnerabilities in surveillance and rapid response**, particularly regarding invasive species management and the risk of spread of diseases.
- **Illegal trade** remains a significant problem, with people introducing species that may have been displaced or released after the hurricane.
- The flooded areas, improper storage of water (open tanks, unsealed drums) and disruption of the waste management system create **conditions favourable for mosquito population surges, the breeding of Cuban treefrog, an increase in rats (possible vectors of leptospirosis) and contamination of water sources.**
- **There is a lack of public awareness of biodiversity issues**, reporting mechanisms and how to contact the relevant authorities regarding invasive species, diseases, or animals that need help.

RECOMMENDATIONS

The following are some recommendations emerging from the experience with Hurricane Melissa and other weather extremes that have impacted Jamaica:

- **Establish a coordinated post-disaster biosecurity surveillance system** (short term). Deploy rapid assessment teams to detect wildlife die-offs, disease outbreaks, and ecosystem vulnerabilities.
- **Establish biosecurity surveillance using citizen science**, where people report species, they encounter via different media (medium term).
 - Provide targeted information to fisherfolk, farmers, and community members to identify unusual species, outbreaks, or ecological changes.
 - Ensure that agencies respond effectively to the public and provide clear reporting pathways
 - Develop an education program to inform the public about the importance of native species and the impact of alien invasive species.
 - Strengthen inter-agency coordination to ensure timely responses to community reports.
- **Implement emergency protocols** for invasive species newly detected in storm-affected areas (short-term and medium-term).
- **Develop guidelines for wildlife disease monitoring** following extreme weather events (medium term).
 - Integrate plants, animals, and agricultural surveillance across agencies.
- **Invest in long-term ecological monitoring and habitat restoration** (long term).
 - Prioritise forest, wetland and coastal restoration to increase future resilience.
 - Prioritise monitoring of wildlife population, especially since diseases such as bird flu have been confirmed in the Cayman Islands

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

CONCLUSIONS

Hurricane Melissa underscored the need for a national biosecurity approach. The hurricane highlighted that several species introduced through the pet trade or accidental release remain present in Jamaica. Some species escaped during the hurricane; the extreme weather is likely to threaten native species, affect ecosystems, and increase public health risks. Invasive species management requires early detection, rapid response, community engagement, and long-term ecological monitoring and restoration. By implementing the recommendations, Jamaica can better protect biodiversity, sustain livelihoods, and enhance resilience.