



HAZARD MITIGATION IN JAMAICA

The Jamaica Institute of Engineers
Conference

Introduction

- The impact of hurricanes in the last three decades has been manifested in losses and damage estimated at US\$5.7 billion. Approximately 79 percent of this amount consisted of direct damage to infrastructure and capital assets, while 48 percent consisted of damage to the social and production sectors, including tourism ECLAC (2004), .
- Flooding is one of the most common natural hazard

Introduction

1. Potential for Increased Frequency/magnitude of events
2. Implications for:
 - Sustainable development/sustained development
 - Poverty
 - Overall achievement of the MDG
 - Fragile Livelihoods
3. Security Implications



Introduction

A natural hazard is a **rare or extreme event** in the natural environment that **adversely affects human life, property** or activity to the extent of **causing a disaster**. (Adapted from OFDA – Introduction to Disasters Training Manual, 1994)

What is Hazard Mitigation ?

- **Mitigation** is defined as the **lessening or limitation** of the **adverse impacts** of hazards and related disasters. The adverse impacts of hazards often **cannot be fully prevented**, but their scale of severity can be **substantially lessened by various strategies and actions**.
- Mitigation measures encompass improved environmental policies and public awareness (non-structural measures) as well as engineering techniques and hazard-resistant construction (structural measures).

What is Hazard Mitigation ?

- The standard definition of **hazard mitigation** is:-
- “**Any cost-effective** action taken to eliminate or reduce the **long-term risk** to life and property from natural and technological hazards”

The case for Mitigation: Quick Facts

- Jamaica ranks as the 3rd most exposed country to multiple hazards in the world, with 87.7% of the population located in areas at risk from three or more hazards (IBRD Natural Disaster Hotspots Report).
- Over the past 20 years, Jamaica's disasters resulted in cumulative costs of more than US\$1billion. Floods and landslides are the most frequently occurring ones in part due to factors relating to topography, geology, and meteorological exposure. (Source: Brief on IBRD Mosaic Project)

The case for Mitigation: Quick Facts

- Between 2002 -2007, Jamaica experienced six storm events (incl. 3 major hurricanes) and several flood events. These combined events resulted in damage and losses amounting to approx. J\$70.7 billion or 3.2% of GDP.
- Vulnerability heightened due to development in high-risk areas, lack of adherence to building codes, high levels of poverty and environmental degradation.

The Benefit of Hazard Mitigation to the Jamaican Society?

- Mitigation creates safer communities by reducing loss of life and property and overall human suffering
- Mitigation enables individuals and communities to recover more rapidly from disasters
- Mitigation significantly reduces the need for large expenditure in the event of a national emergency

Mitigation Interventions

Previous approaches:

- Relocation of at risk communities; Check Dams, Coastal Defense (sea walls); river training; groynes and gabion baskets; Infrastructure maintenance

Current approaches:

- Some bank protection measures; river desilting (short term) and drain cleaning (short term); relocation of at risk communities
- Included as part of new investment

Overview of Climate Related Risk (10yr period) in Jamaica

Nature of Event	Year	Cost of Damage (JA\$)	# Roads Affected	# Communities Affected	Casualties
<i>Tropical Depression Nicole</i>	2010	20,573,500.00	189	130	48
<i>Tropical Storm Gustav</i>	2008	15,051,000,000.00	151	76	12
<i>Hurricane Dean</i>	2007	23,000,000,000.00	269	169	4
<i>Port Maria Rains</i>	2006	48,862,500.00	9	24	-
<i>November Rains</i>	2006	533,200,108.00	17	93	-
<i>Hurricane Emily & Dennis</i>	2005	5,976,910,000.00	14	15	1
<i>Hurricane Wilma</i>	2005	3,419,202,845.40	90	106	1
<i>Hurricane Ivan</i>	2004	35,900,000,000.00	111	177	17
<i>Hurricane Charlie</i>	2004	248,912,460.00	-	-	1
<i>May – June Rains</i>	2003	203,347,750.00	-	27	-
<i>Tropical Storm Lili & Isidore</i>	2002	840,394,883.00	-	185	0
TOTAL		85,242,404,046.40	850	1002	84

ODPEM Driven Mitigation Interventions

- Building Disaster Resilient Communities PROJECT (CIDA funded)
- Hazard Management for Coastal Towns and Cities (IDB Funded)
- Slope Stabilization Project (IBRD Funded)
- Loss reduction at the Community Level : DIPECHO Community Disaster Management Project
- Disaster mitigation programme to minimize the impact of flooding in Fort George, St. Mary (USAID funded)
- DFID Safer Building Practices Project. (1,103 homes in four parishes were retrofitted)

MITIGATION INTERVENTION

- NGO driven interventions: Red Cross Safe Housing and Livelihood, Oxfam Livelihood/mitigating agriculture risk

CONSTRAINTS TO HAZARD MITIGATION

- While we have had some mitigation interventions. We are still heavily post-event driven
- Efforts have been made to capitalize on the available technology and lessons learnt both locally and internationally. However, these efforts have been stymied by a lack of resources and political support, as well as inconsistent budgetary support
- The progress we have made has been largely as a result of project intervention through financing under International Donor Funded Projects
- Weak Institutional Mechanisms (LA's and DRR Governance)
- Enforcement and Monitoring of Standards

THE DILEMA

- After each hazard impact scarce resources earmarked for development projects are diverted to deal with disaster relief and reconstruction, thereby retarding economic growth.(Source: Vision 2030, Jamaica)

The Way Forward

- Acceptance that the management of natural hazards is a long term, developmental issue.
- Reduction of the economic losses possible through reducing the level of vulnerability of public infrastructure (drains, retaining walls, bank erosion and infrastructure).
- National budgets are not infinite, hence community members have a key role to play in helping to reduce the vulnerability of their respective communities.

The Way Forward

How should Jamaica's exposure to disasters be mitigated, and its natural resources be better protected?

Recommended Next Steps:

- Critical facility audit programme
- National critical infrastructure rehabilitation, hardening and relocation programme
- Legislating and Application of the Building Code
- Completion of National Spatial Plan
- Utilization of Development Control Measures
- Production of Land Use Plans
- Enforcement and other penalties

Conclusion

- The Objective of the Jamaican Government must be:
- “....To establish a safe and secure environment in which it can focus on achieving a prosperous, democratic, peaceful and dynamic society which upholds the fulfillment of human rights.....”
(National Security Strategy for Jamaica 2006)
- In essenceprovide the conditions for a better quality of life where the necessary potentials can be realized



CONCLUSION

- “disaster prevention/hazard mitigation is cheaper than disaster response”



THANK YOU FOR YOUR ATTENTION

DISCUSSION AND QUESTIONS