



NATIONAL DISASTER MANAGEMENT IN JAMAICA

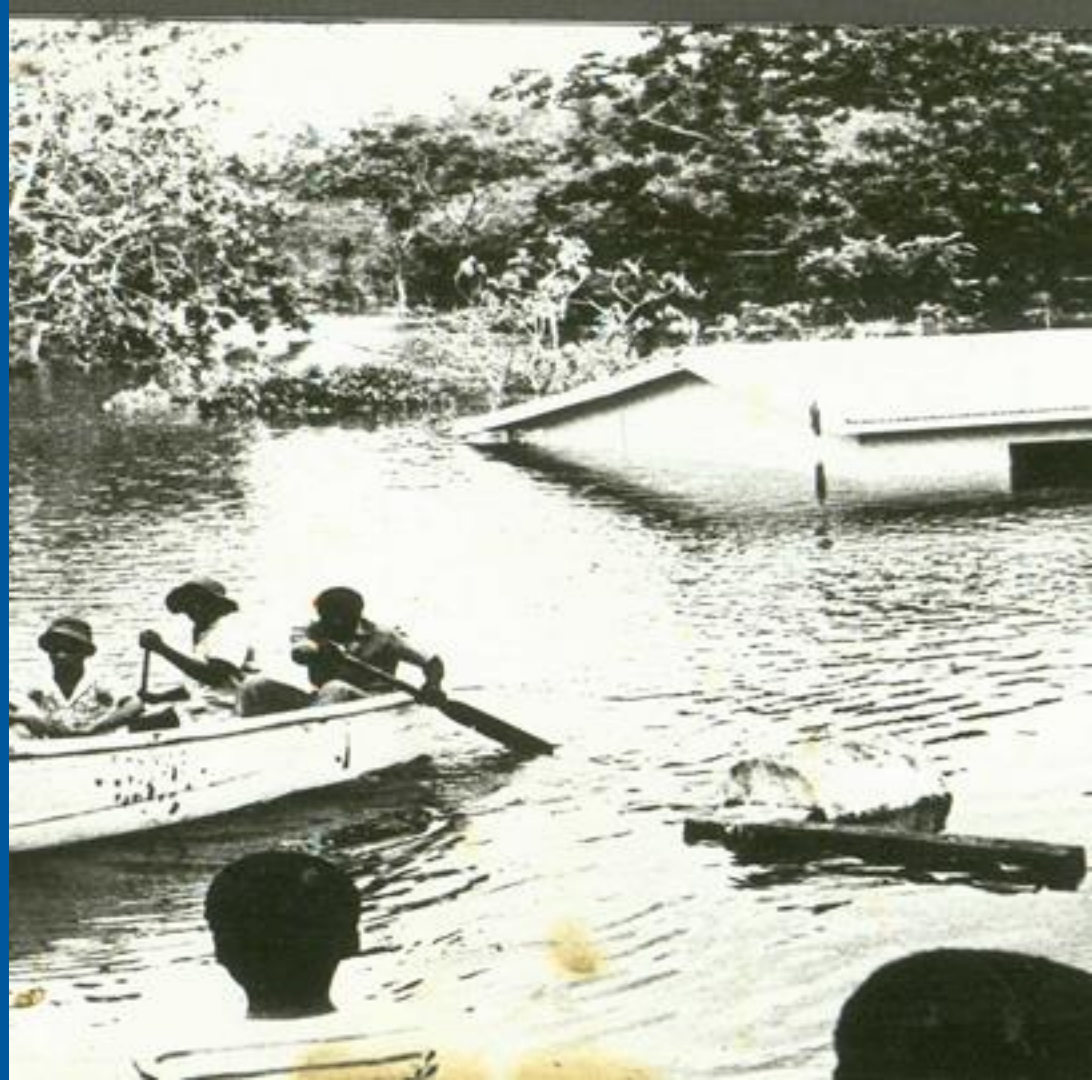
Presenter: Michelle Edwards
Office of Disaster Preparedness and Emergency Management

FLOODS OF 1979

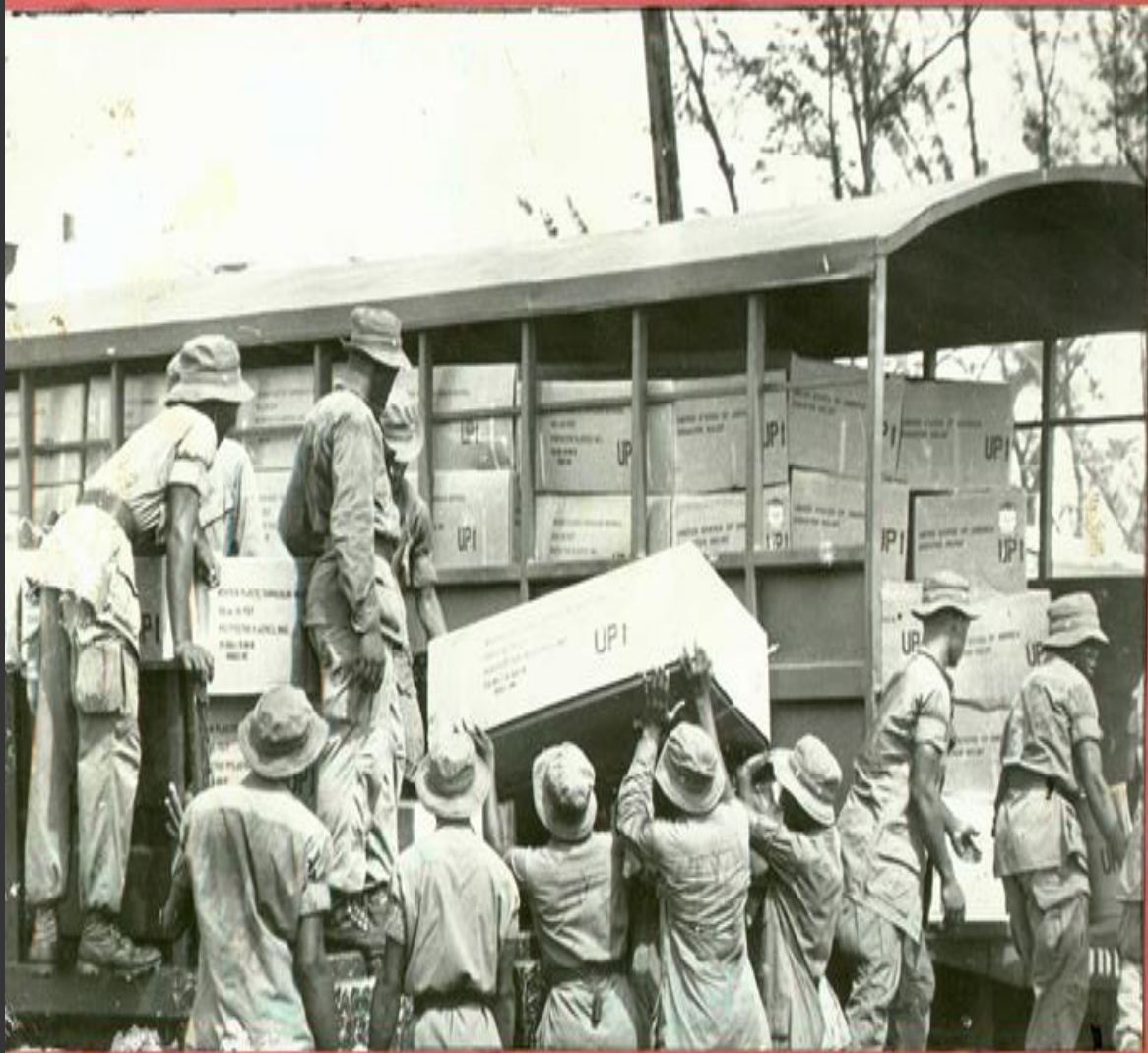


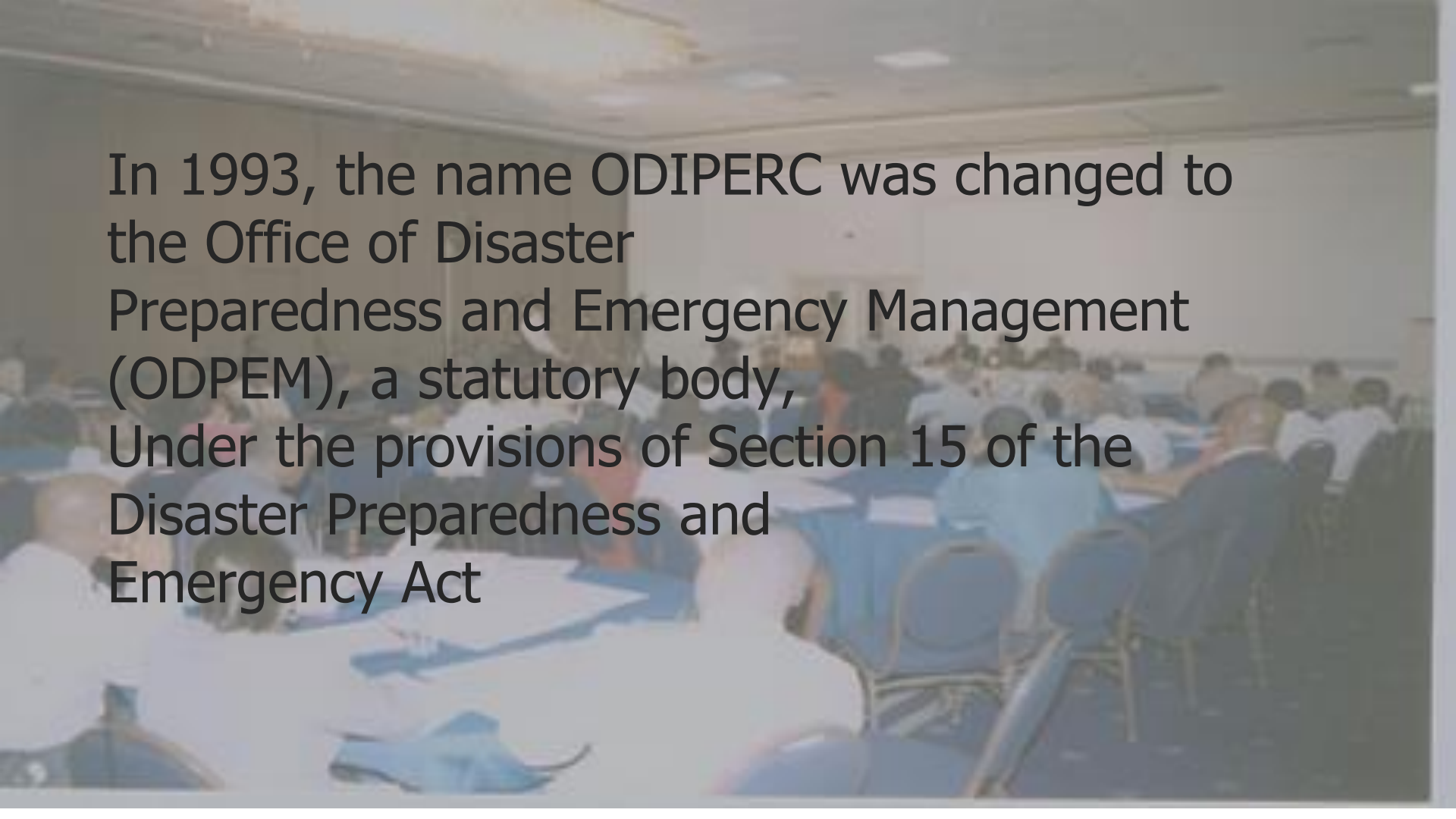
History of ODPEM

After the June 1979 Floods, which devastated sections of Western Jamaica, the Government of Jamaica recognized the need for the Establishment of a permanent disaster management organisation



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The **Office of Disaster Preparedness and Emergency Relief Coordination** (ODIPERC), was established in **July 1980** with responsibility for **Coordination and monitoring the response to hazards as well as Educating the nation on all aspects of disaster management**





In 1993, the name ODIPERC was changed to the Office of Disaster Preparedness and Emergency Management (ODPEM), a statutory body, Under the provisions of Section 15 of the Disaster Preparedness and Emergency Act

Role of ODPEM

The strategic focus of the ODPEM is to mainstream disaster resiliency and risk reduction and advance strategies that improve emergency response coordination at all levels.

The ODPEM by law, functions as the National Disaster Office and is therefore the National Coordinator for disasters. The ODPEM is the responsible for advancing disaster preparedness and emergency management measures

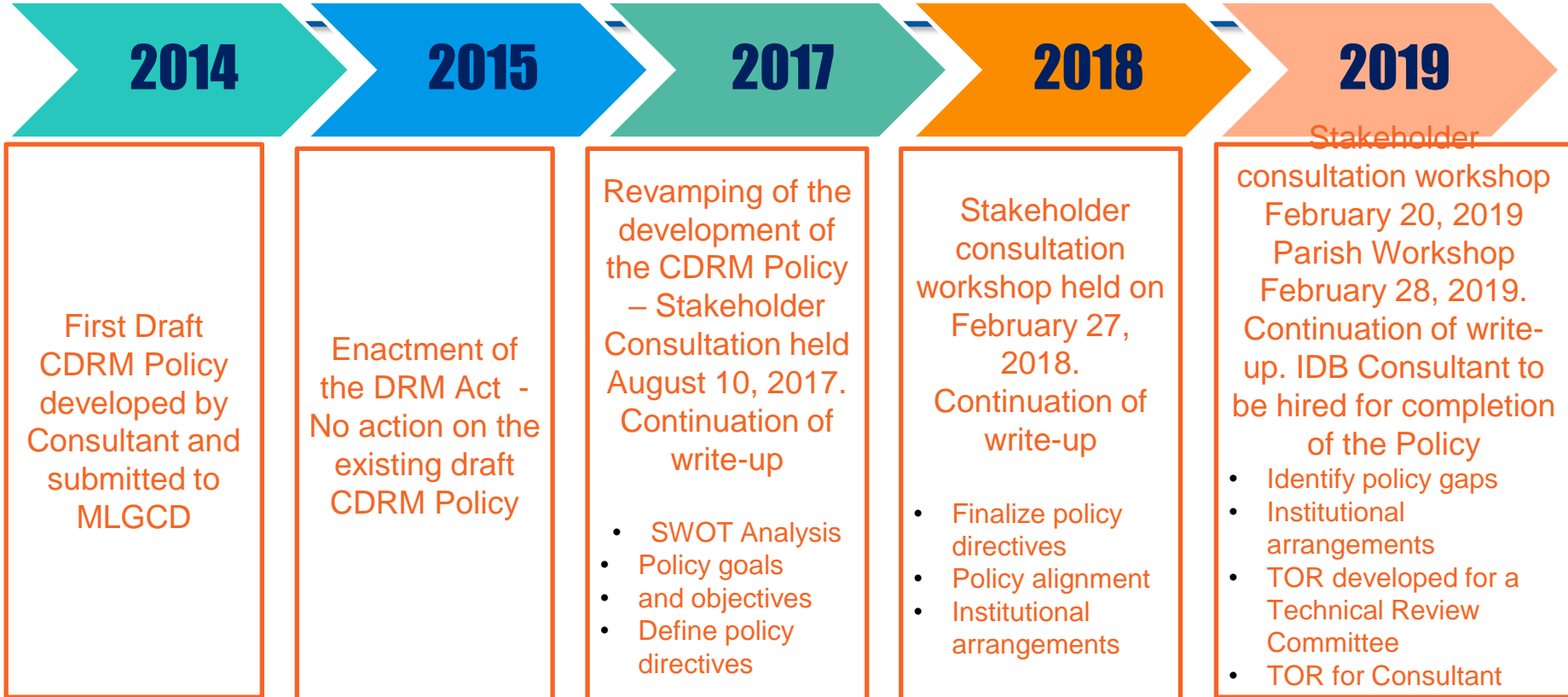
Facilitating and coordinating development of integrated disaster management systems Institute measures for mitigation disasters.
Establishing and ensuring response coordination in executed.

DRM Legislative & Policy Pillar

—

Disaster Risk Management Act 2015

Comprehensive Disaster Risk management Policy Development Process



A Resilient and Safe Jamaica

Vision of Jamaica's Comprehensive DRM Policy on 'Road to Resilience'

Guiding Principles and Cross-Cutting Themes:

Sustainable development gender equality and social inclusion stakeholder engagement and partnership consultation and cooperation ecosystem-based management technology, innovation, adaptability and continuous improvement adequacy of resources

CDRM Policy Goals

| | | | | | | |
|--|--|--|--|---|---|---|
| Goal # 1: DRM is mainstreamed across all national policies and sectoral planning process including the integration of DRR with climate change adaptation | Goal #2: Mortality, economic, social and environmental losses from disasters are reduced, creating resilient individuals, communities & enterprises across Jamaica | Goal #3: Jamaica has a modern and <u>adaptive governance</u> , institutional, legal and regulatory framework for comprehensive disaster risk management, that facilitates stakeholder involvement and engagement | Goal #4: Jamaica has in place well-defined systems for risk identification and <u>is able to</u> anticipate future events including new and emerging hazards | Goal #5: Jamaica has a strong, innovative and modern disaster preparedness system for effective recovery and response | Goal #6 – Jamaica's key industry structures embrace DRR and CCA as a means of advancing international competitiveness | Goal #7 Jamaica has in place a well-defined framework for disaster risk financing to safeguard future development prospects |
|--|--|--|--|---|---|---|

Strategies and Key Actions to 2045

Implementation Framework (DRM Plans, Vision 2030 Jamaica Action Plans/3yr Corporate and Operational Plans of Ministries, Agencies and Departments)

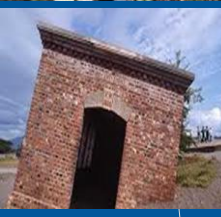
Monitoring and Evaluation Framework (Indicators and Targets)

Overarching CDRM Policy Framework Green Paper 2022

Functions of the ODPEM



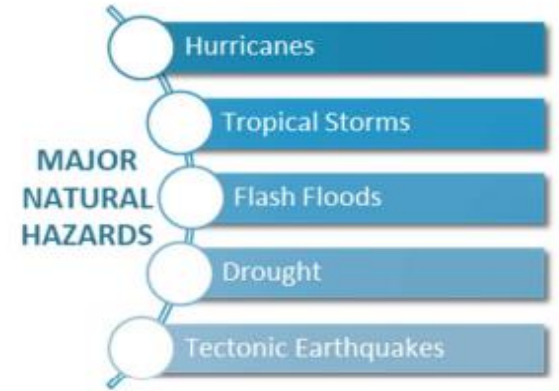
- Develop and implement policies and programmes to achieve and **maintain an appropriate state of national and sectoral preparedness** for coping with all emergency situations which may affect Jamaica
- **Encourage and support disaster preparedness and mitigation measures in all the parishes** in collaboration with the local government authorities, community based organisations and the private and voluntary agencies,
- **Respectively**
- **Provide appropriate training programmes and consulting services** related to all aspects of disaster preparedness, disaster mitigation, loss reduction, and disaster management
- **Plan and implement programmes to enhance public awareness** and understanding of disaster related issues, emergency management, hazard prevention and other similar matters
- **Identify and analyze hazards** or emergency situations and conduct related operational research into their effects
- **Establish, maintain and manage mutual assistance and co-operation agreements**



JAMAICA



- Major Natural Hazards
- Approximately 93% of population is exposed to 2 or more hazards
- Vulnerability is driven by debt burden
- Accumulate economic losses agriculture tourism infrastructure Us \$2.599 billion



2.948 million people (2019)



US\$5,582 GDP/capita (2019)



10,991 km²

AGRICULTURE

235M
loss &
damages

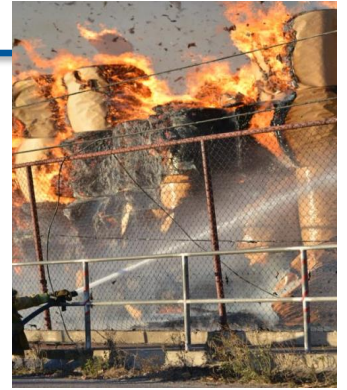
TOURISM

71M
loss &
damages

INFRASTRUCTURE

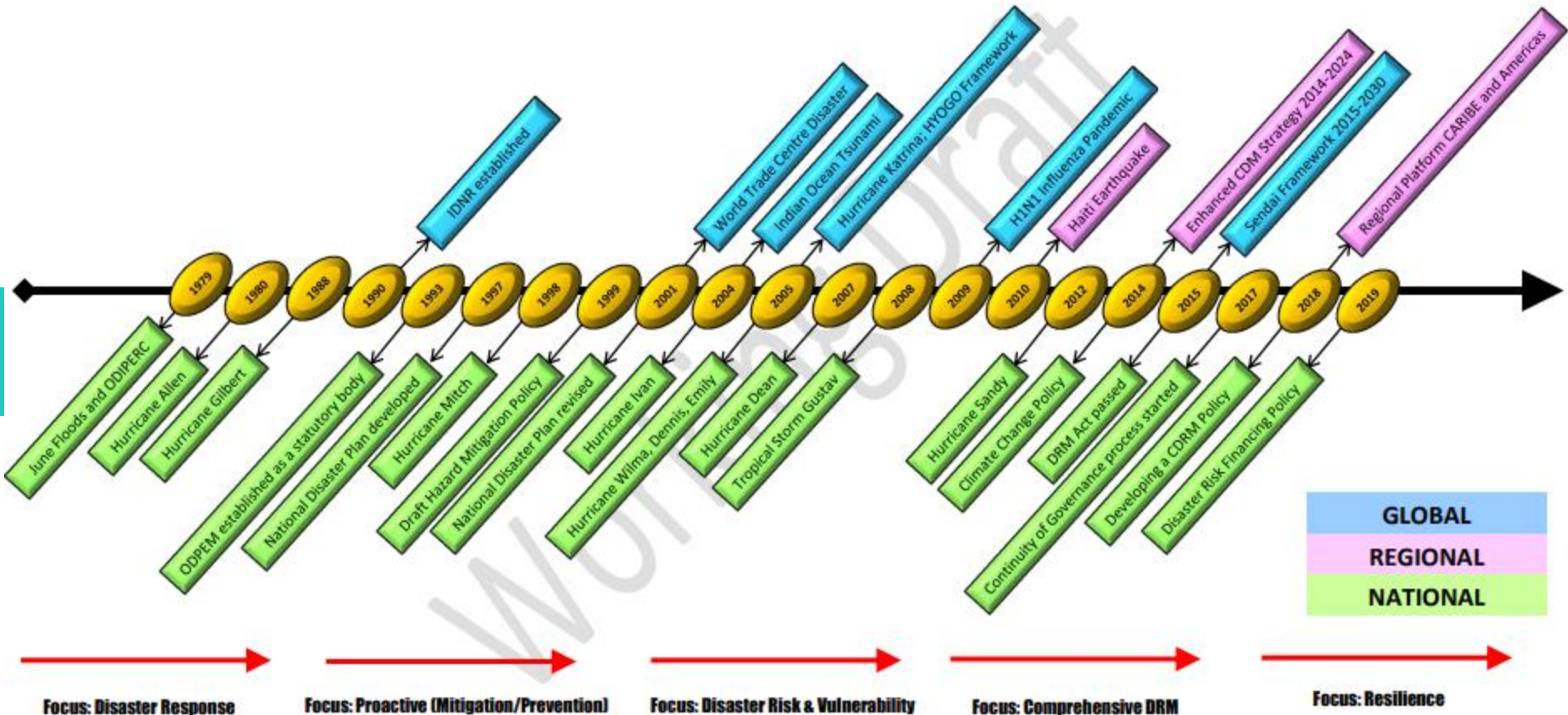
632M
loss &
damages

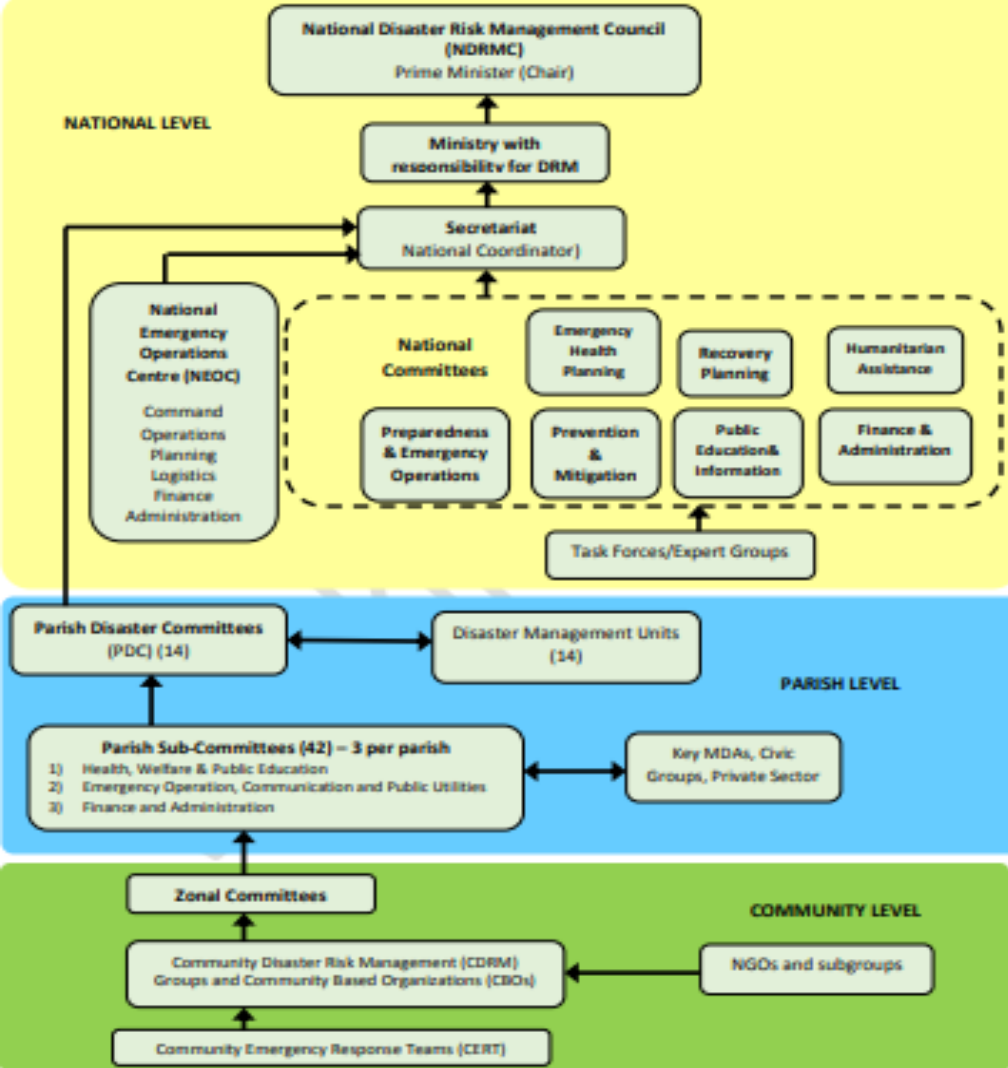




TIMELINE OF MAJOR EVENTS INFLUENCING THE PROGRESSION OF DRM AND CCA

Figure 2: DRM/CCA Timeline

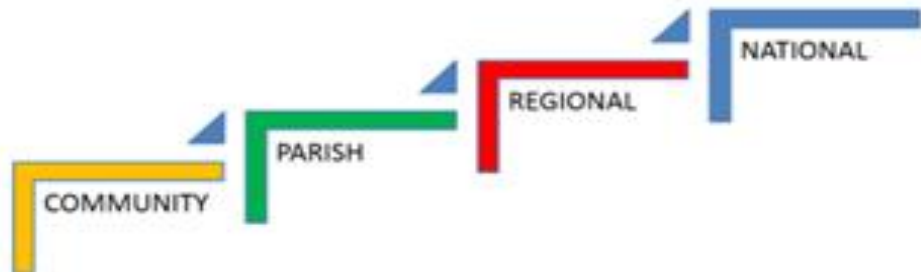




Structure of the National Disaster Risk Management Framework for Jamaica

The National Disaster Management Mechanism functions at four (4) levels:

- National level
- Regional level
- Parish level
- Community level



National Disaster Risk Management Council



National Disaster Risk Management Council



STANDING COMMITTEES OF COUNCIL



Prevention
&
Mitigation
(Chair –
ODPEM)



Preparedness &
Emergency
Operations
(Chair –
JFB)



Humanitarian
(Chair –
MLSS)



Emergency
Health
Planning
(Chair –
MOH)



Public
Education
&
Information
(Chair –
JIS)



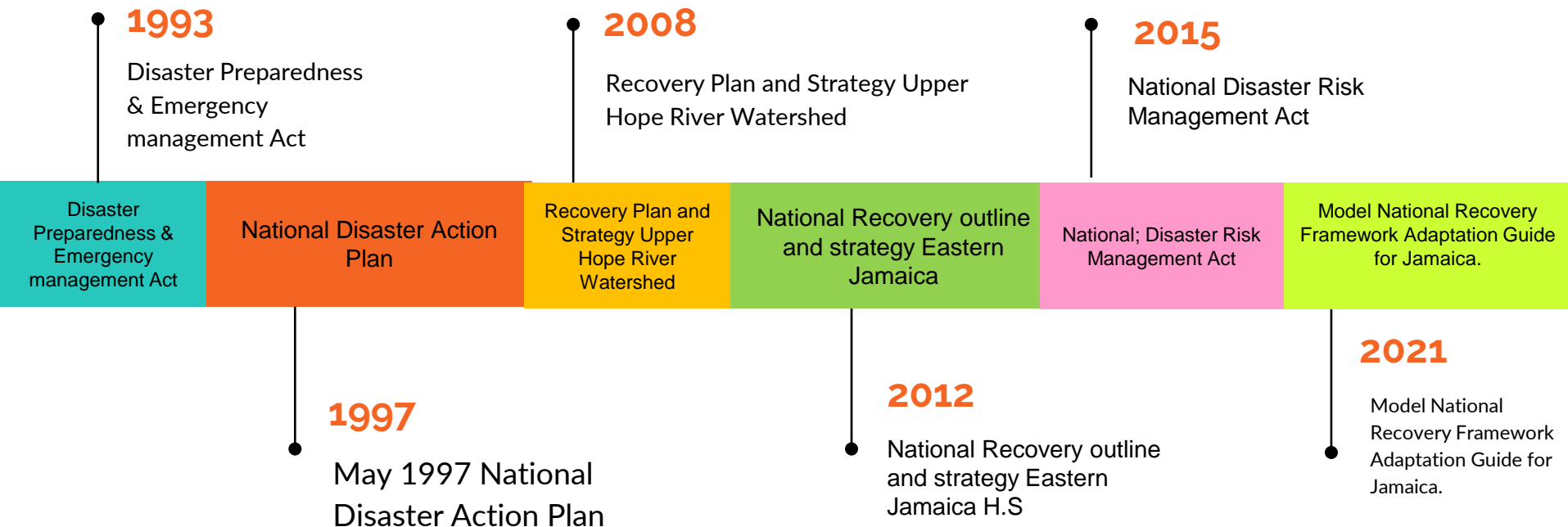
Recovery
Planning
(Chair –
PIOJ)



Finance &
Administration
(Chair –
MOFPS)

← Strategic Planning, Partnerships, Implementation, Climate Change, ICTs →

Recovery Timeline: What is in Place?



Multiple
Responders

Chaos

Secondary
Hazards/Threats



**Large number of Lives and
Property as Risk**



—
This plan documents the activities for coordinating a response to the impact of a hazard on Jamaica. In keeping with the all-hazards approach of the regional Comprehensive Disaster Management (CDM) Strategy and Framework 2014 – 2024, the plan should be applicable to the impact of any hazard. The NDRCP aims to:

- a) Ensure an integrated, coordinated, multi-level preparedness and response effort which includes participation of public, private and voluntary sectors as well as community-based organisations (CBOs). These entities will execute the plan.

- b) Describe the systems and procedures for coordinating efforts to save lives, provide humanitarian assistance and manage resources during emergencies and disasters.



NATIONAL DISASTER RESPONSE COORDINATION PLAN JAMAICA

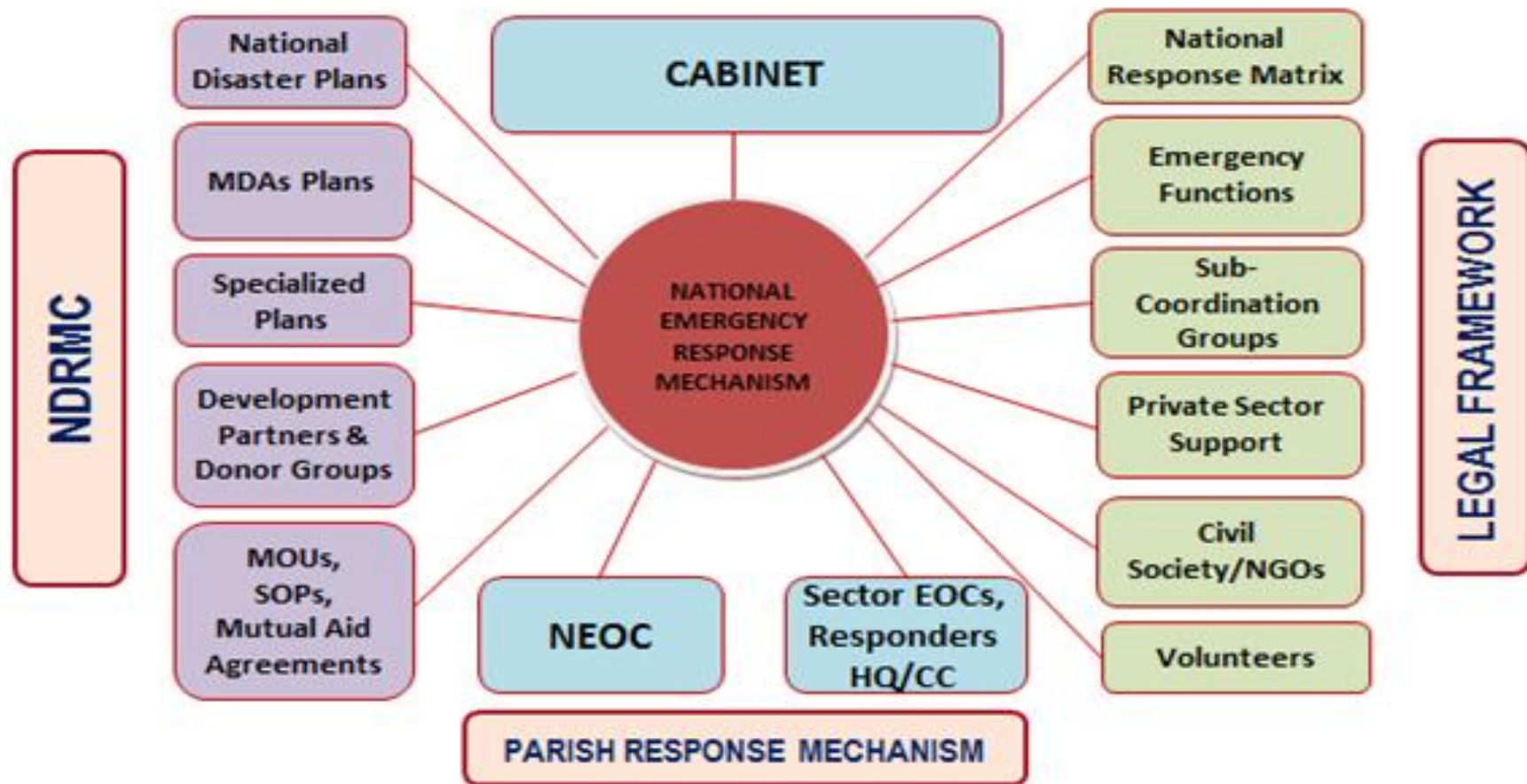


June 2022

EMERGENCY MANAGEMENT

- **PUBLIC SAFETY AND SECURITY**
- In the response phase Coordinate with ports and airports meeting any additional security requirements (PAJ) Lead
- **Humanitarian Assistance**
- In Collaboration with Jamaica Customs Agency/Port Relief Clearance Team/ Airports Authority review arrangements for handover of relief supplies at ports of entry including identification of storage spaces/bonded warehouses off the port. Ensure harmonisation of relief distribution plans with Emergency Relief Clearance Plan

National Disaster/Emergency Response Framework



National Disaster Risk Management Framework



Three Tiers

- National Level
- Parish Level
- Community Level



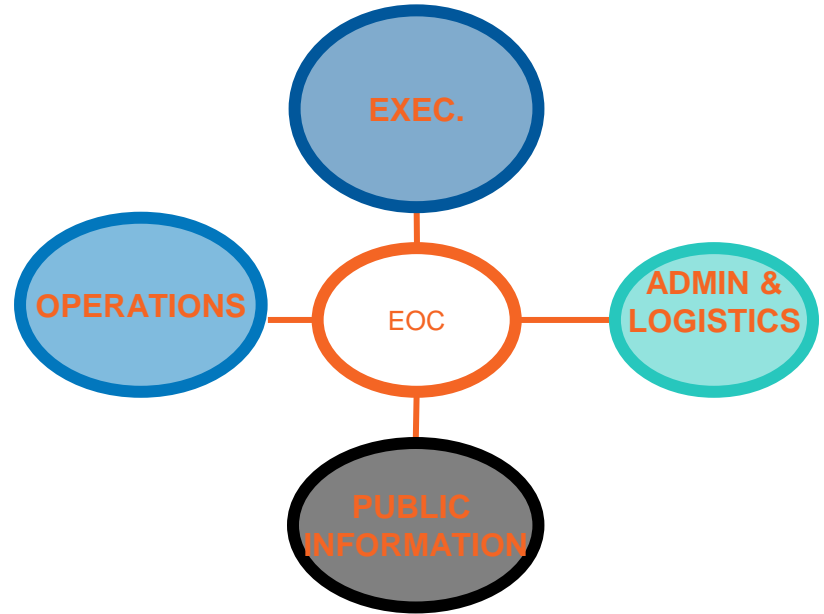
National Emergency Operations Centre

- To relieve chaos by making appropriate informed decisions
- To prevent an emergency from becoming a disaster
- To coordinate emergency response using the multi agency approach
- To save energy, money and other resources through coordination

National Emergency Operations Centre

Four Basic Function Areas:

- Executive Command Centre,
- Operations Room,
- Communications Centre,
- Admin. and Support Area.



Operations Room



- Overall management and coordination of emergency operations to include, as required, on-site incident management.
- Maintain liaison with the appropriate support agencies, whether governmental, private or international.
- Request and allocate resources and other support.
- Establish priorities and resolve any conflicting demands for support.
- Manage the movement and reception emergency relief supplies and emergency support personnel.
- Provide food and medical support to incident assigned personnel.
- Meet the transportation needs of the incident.

How are Decision Taken in Ops Room



DATA, DATA DATA!!!

- The principal means of passing operational information will be by means of a **Situation Report (SITREP)**.
- Should reflect local situation changes
- Areas covered – Situation analysis, Shelter, Evacuation, critical facilities status, critical actions taken and to be taken, casualties, resources needed, appendices
- Standardized Format

Status Boards

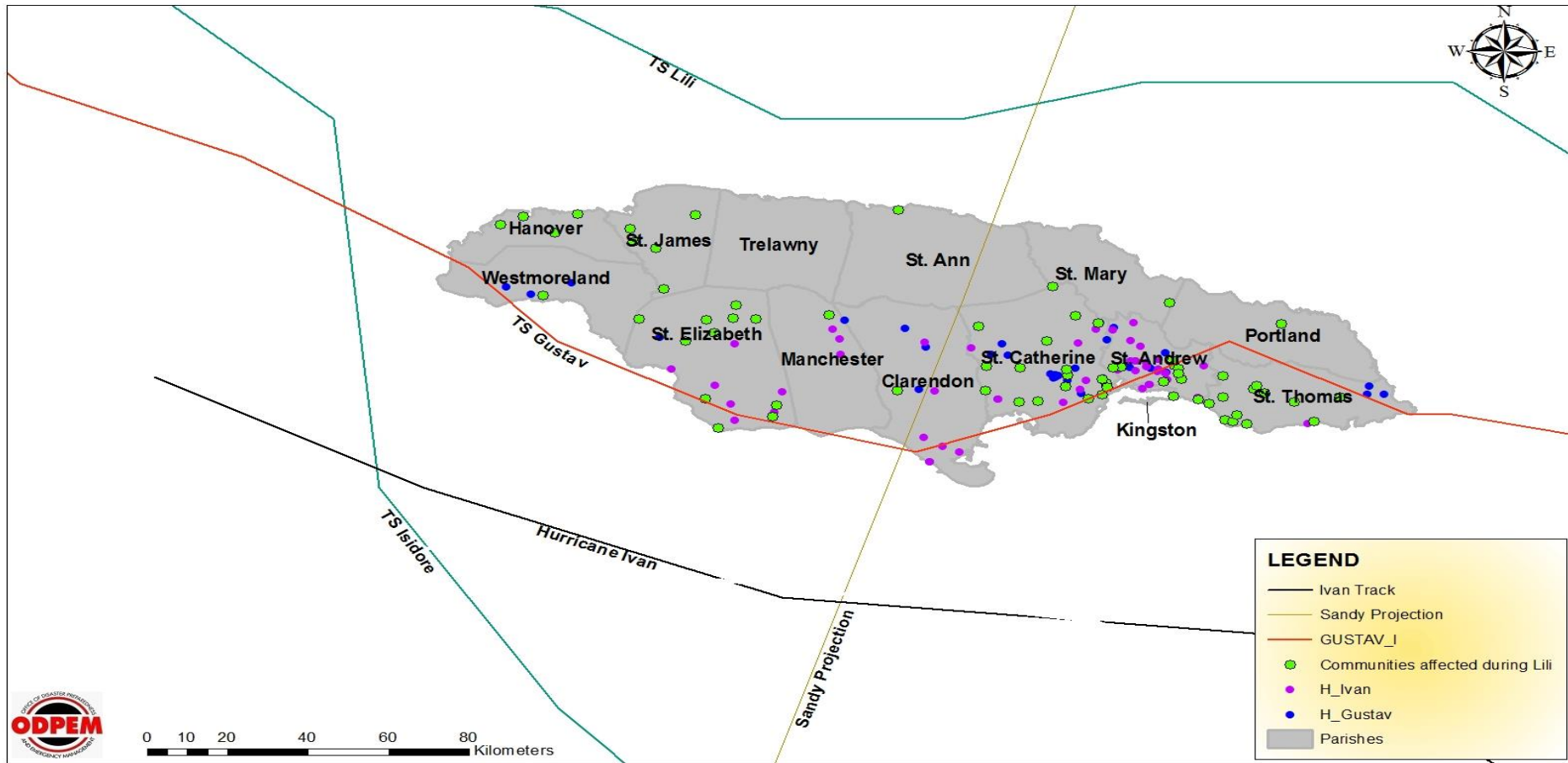
- Shelter
- maps
- Roads
- Critical Actions – Evacuation, SAR
- TV monitors -
- Locations Impacted

*Using Scenario Planning Assessing the
Situation For Disasters Impacts*

Historical Data

1. *Vulnerability and Scenario Planning Product
TROPICAL STORM ISAAC*
2. *Damage Assessment and Data Gathering Process*
3. *Use of Damage Assessment data*

COMMUNITIES IMPACTED BY RECENT STORMS AND T.S. SANDY PROJECTION



BACKGROUND

- This scenario is based on historical events passing along the south coast of Jamaica.
- These events are Tropical Storm Gustav, Hurricane Ivan, and Hurricane Emily.

ADVISORY: Tropical STORM ISAAC as at September 14th at 4 pm

- **Location:** centre of *Tropical Storm Isaac* latitude 15.3 North, longitude 62.8 W or 955 km or 600 miles ESE of Kingston.
- **Direction:** Isaac is moving toward the **west** near 22 km/h or 14 MPH with some decrease in forward speed expected over the next few days.
- **Forecast:** to move over the eastern and central Caribbean Sea during the next few days.
- **Max Wind:** 65 km/h or 40 MPH with higher gusts. Isaac is forecasted to gradually weaken over the next few days
- There are no coastal watches and warning in effect at this time.

PLANNING CONSIDERATIONS & ASSUMPTIONS:

1. Low-lying areas and coastal plains will be impacted by flooding. These have communities, critical facilities, river systems among others within the area.
2. Potable water systems impacted
3. As result of flooding affected persons will need shelter
4. Communications systems – including telephones, radios, and cellular systems – disrupted.
5. Flooding landslide and debris flow may impact roads, access ways/ routes and emergency vehicles.

TS ISAAC POTENTIAL IMPACTS:

Given its forecast track along the southern end of Jamaica,
along with the historical data use in this planning
scenario for Hurricane Ivan, Emily and TS Gustav:-

| Hurricane Emily | |
|---|-------------|
| COMMUNITY | EVENT |
| Port Henderson | Storm Surge |
| Rozelle | Storm Surge |
| Braeton, New Town | Flooding |
| Moneague | Flooding |
| Wakefield | Flooding |
| Sunnyside, Linstead | Flooding |
| Clarks Town, Bolton Town | Flooding |
| Bunkers Hill | Flooding |
| Bushy Park | Flooding |
| Alley | Flooding |
| Nain | Flooding |
| Grants Pen | Flooding |
| Jackson Town | Flooding |
| Marley Hill | Flooding |
| Knock Patrick - Tulsa Road | Flooding |
| Downs | Flooding |
| Sea Air | Flooding |
| Logwood Rowes Corner | Flooding |
| Alligator Pond | Flooding |
| Flowden | Flooding |
| Cross Keys | Flooding |
| Cocoa Walk | Flooding |
| Rose Hall Main Road, vicinity of Ritz Carlton | Flooding |
| Pedro Plains | Flooding |
| Red Bank | Flooding |
| Bigwoods | Flooding |
| Ballars Valley | Flooding |
| Knoxwood | Flooding |
| Malvern | Landslide |
| North Ampton | Flooding |
| Banks | Flooding |
| Race Course | Flooding |
| Coffals | Flooding |
| Mitchell Town | Flooding |
| Rocky Point | Flooding |
| Lionel Town | Flooding |
| Junction Square | Flooding |
| Gutters to Pepper | Flooding |
| Fullerswood | Flooding |
| Myersville to Santa Cruz | Flooding |
| Lititz | Flooding |

| TS Gustav | |
|-------------|-------------------|
| Hazard | Community |
| Flooding | Cave Castle |
| Flooding | Port Maria |
| Flooding | Moneague |
| Flooding | Ensom City |
| Flooding | Greendale |
| Flooding | St. John's West |
| Flooding | Old Harbour Road |
| Flooding | St. John's East |
| Flooding | Golden Acres |
| Flooding | Willowdene Estate |
| Flooding | Spanish Town |
| Flooding | Bog Walk |
| Flooding | Dunbeholding |
| Landslide | Brown's Hall |
| Landslide | Watermount |
| Landslide | Point Hill |
| Landslide | Glengoffe |
| Landslide | Above Rocks |
| Landslide | Spaldings |
| Flooding | Crooked River |
| Flooding | Annotto Bay |
| Flooding | Vineyard Town |
| Flooding | Bull Bay |
| Landslide | Rowlandsfield |
| Storm Surge | Manchioneal |
| Storm Surge | Long Bay |
| Wind | Hectors River |
| Flooding | Havendale |
| Flooding | Hughenden |
| Flooding | Jacks Hill |
| Flooding | Hermitage |

| Hurricane Ivan | |
|------------------|--------------------------|
| Hazard | Community |
| Wind | Stony Hill |
| Wind | Queensborough/Turnbridge |
| Wind | Lawrence Tavern |
| Wind | Cassia Park |
| Wind | Vineyard Town |
| Flooding | Harbour View |
| Wind | Barbican |
| Flooding | Havendale |
| Flooding | Jacks Hill |
| Flooding | Hope Patures |
| Wind | Yallahs |
| Storm Surge | Duhaney Pen |
| Flooding | Eleven Miles |
| Flooding | Nain |
| Wind/Flooding | Bull Bay |
| Storm Surge | Black River |
| Flooding | Braes River |
| Wind | Pedro Plains |
| Wind | Junction |
| Wind | Mountainside |
| Wind | Big Woods |
| Flooding | Tucker |
| Flooding | Granville |
| Flooding | Prospect |
| Wind | Port Maria |
| Wind | Robins Bay |
| Flooding | Cave Valley |
| Wind | May Pen |
| Wind | Lionel Town |
| Wind | Mitchell Town |
| Flooding | Aenon Town |
| Storm Surge | Rocky Point |
| Flooding | Race Course |
| Wind/Storm surge | Williamsfield |
| Wind | Chantilly |
| Storm Surge | Buff Bay |
| Flooding | Bog Walk |
| Flooding | Old Harbour |

ACTUAL RAINFALL FOR THREE HISTORICAL EVENTS

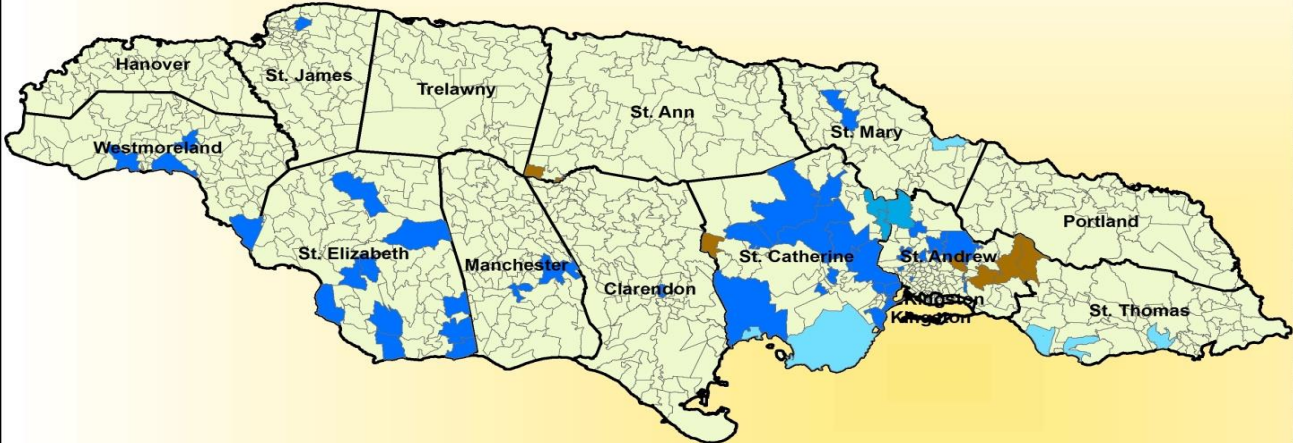
(Rainfall in mm)

| STN_NAME | PARISH | Ivan Sept (10-12) | Emily Jul (15-16) | Gustav Aug (27-30) |
|---------------------|---------------|-------------------|-------------------|--------------------|
| Frankfield | Clarendon | 303 | 244 | 179 |
| New Yarmouth | Clarendon | 200 | | 133 |
| Old Yarmouth Fisher | Clarendon | 200 | | 135 |
| Old Yarmouth Quarry | Clarendon | 200 | | 165 |
| Rowington | Clarendon | 200 | | 148 |
| Sheckles | Clarendon | | | 169 |
| Vernamfield | Clarendon | 200 | | 186 |
| Cacoon Castle | Hanover | 201 | | 176 |
| Lucea | Hanover | | | 115 |
| Lawrence Tavern | Kingston | 442 | | 491 |
| Norbrook Park | Kingston | 497 | | 200 |
| Palisadoes | Kingston | 419 | | 338 |
| Craig Head | Manchester | 681 | | 417 |
| Evergreen | Manchester | 249 | | 115 |
| Hermitage | Manchester | 360 | | 112 |
| Ingleside | Manchester | 221 | 173 | 302 |
| Sherwood Forest | Portland | 594 | | 359 |
| Cole Gate | St. Ann | 200 | | 262 |
| Charm Hole | St. Catherine | 681 | | 397 |
| Swansea | St. Catherine | 681 | 308 | 404 |
| Worthy Park (Climo) | St. Catherine | 681 | 200 | 349 |

| STN_NAME | PARISH | Ivan Sept (10-12) | Emily Jul (15-16) | Gustav Aug (27-30) |
|---------------------|---------------|-------------------|-------------------|--------------------|
| Accompong | St. Elizabeth | 291 | | 242 |
| Appleton #1 | St. Elizabeth | 216 | 302 | 271 |
| Burnt Savannah | St. Elizabeth | 122 | | 165 |
| Casa Marantha | St. Elizabeth | 450 | | 237 |
| Fort Charles | St. Elizabeth | 192 | 24 | 159 |
| Holland | St. Elizabeth | 382 | 261 | 266 |
| Mountainside | St. Elizabeth | 287 | 124 | 301 |
| Raheen Estate #1 | St. Elizabeth | 280 | | 208 |
| Montego Bay Airport | St. James | 143 | | 153 |
| Mount Horeb | St. James | | | 280 |
| Richmond | St. Mary | 267 | | 310 |
| Norris | St. Thomas | 517 | 390 | 285 |
| Quickstep | Trelawny | 294 | 223 | 255 |
| Non-Pariel | Westmoreland | | 168 | 198 |
| Savanna-la-mar | Westmoreland | 408 | | 328 |



Communities Repeatedly Impacted by Storm Events 2001 - 2010



LEGEND

Communities repeatedly impacted by storm events 2001 - 2010

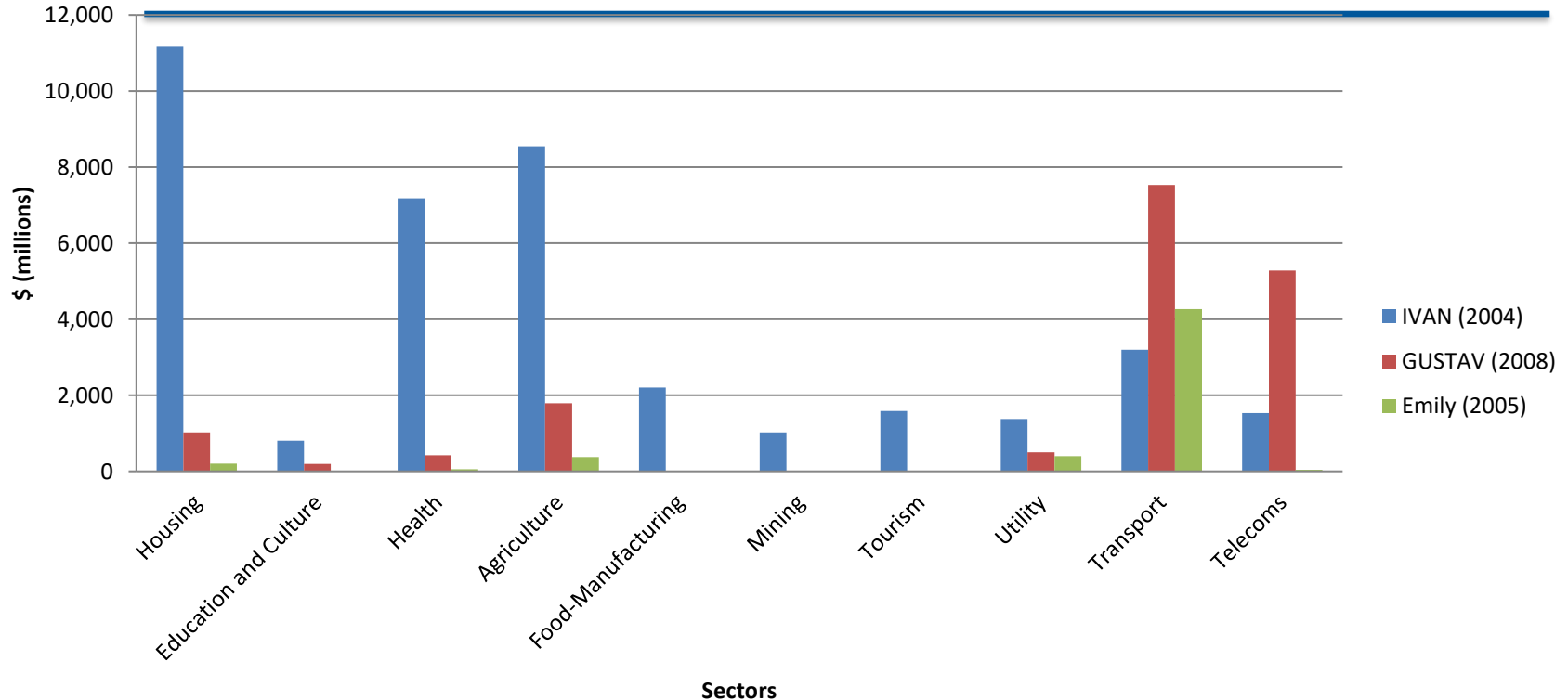
- Hazard**
- Flooding
 - Flooding/Landslide
 - Flooding/Storm Surge
 - Landslide
 - Storm Surge
 - Parishes
 - SDC Community Boundary



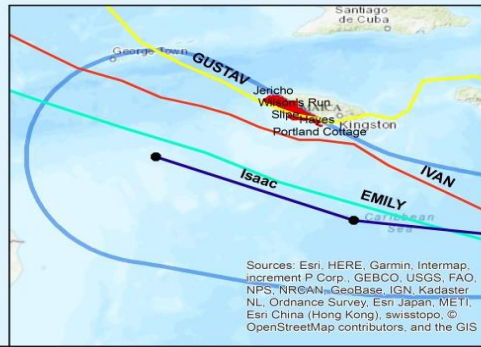
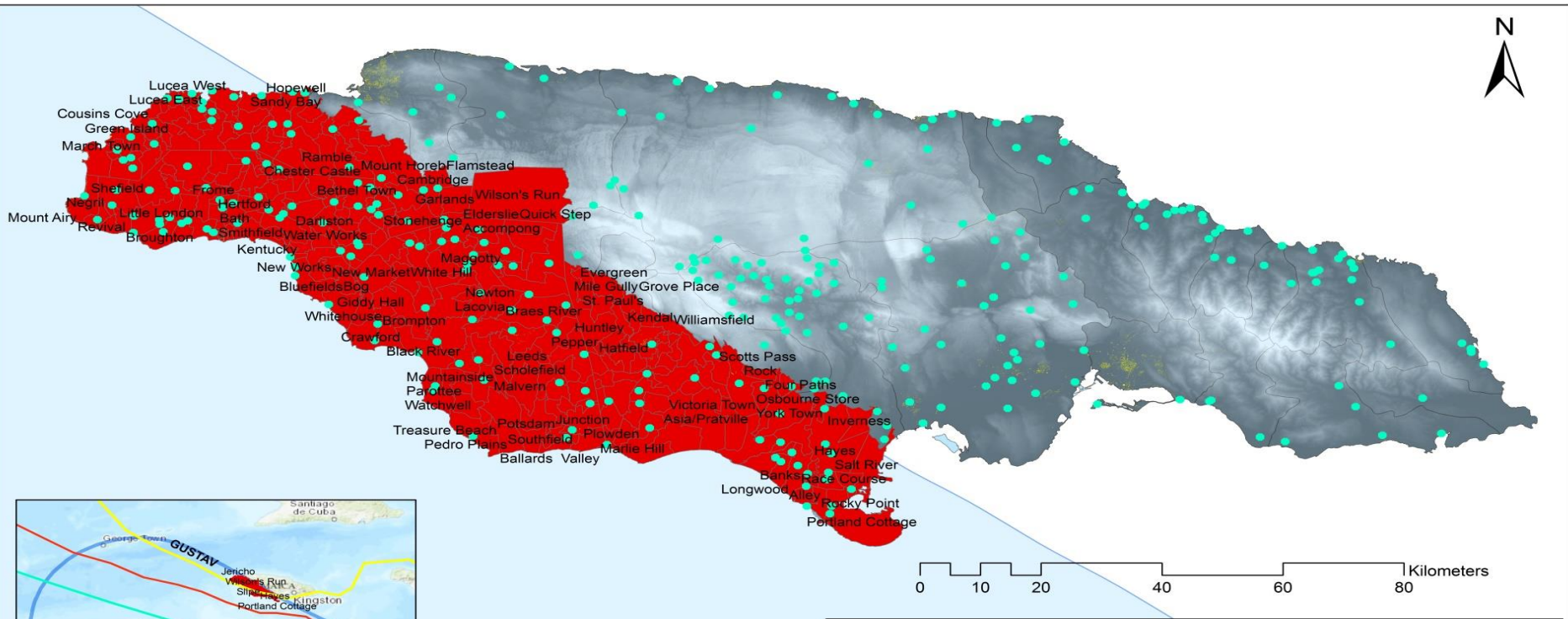
| COMMNAME | Population | Parish | Hazard |
|----------------------------|------------|--------------|----------------------|
| Law rence Tavern | 14589 | KSA | Flooding/Landslide |
| Temple Hall | 2462 | KSA | |
| Mavis Bank | 5792 | KSA | Landslide |
| Red Hills/ Sterling Castle | 3089 | KSA | |
| Norbrook | 3326 | KSA | |
| Maryland | 1900 | KSA | Landslide |
| Duhaney Park | 13467 | KSA | |
| Tow er Hill | 10253 | KSA | |
| Woodford | 3878 | KSA | |
| Stony Hill | 7724 | KSA | |
| Havendale | 7317 | KSA | |
| Jacks Hill | 1345 | KSA | Landslide |
| Constitution Hill | 4209 | KSA | Landslide |
| Papine | 7685 | KSA | |
| August Tow n | 6971 | KSA | Flooding |
| Petersfield | 4216 | Westmoreland | Flooding |
| Big Bridge | 1932 | Westmoreland | |
| Smithfield | 2830 | Westmoreland | Flooding |
| Whitehouse | 6600 | Westmoreland | |
| Treadlight | 1585 | Clarendon | |
| Bushy Park | 3373 | Clarendon | Flooding |
| Porus | 8775 | Manchester | Flooding |
| Knockpatrick | 2013 | Manchester | |
| Bohemia | 2254 | St Ann | Landslide |
| Borobridge | 167 | Clarendon | Landslide |
| Linstead | 39157 | St Catherine | |
| Riversdale | 4475 | St Catherine | Flooding |
| Glengoffe | 4465 | St Catherine | Flooding/Landslide |
| Bogw alk | 14071 | St Catherine | |
| Above Rocks | 4079 | St Catherine | Flooding/Landslide |
| Sligoville | 4903 | St Catherine | |
| Point Hill | 5807 | St Catherine | |
| Ginger Ridge | 1856 | St Catherine | Landslide |
| Caymanas | 1728 | St Catherine | |
| Ensom | 21866 | St Catherine | |
| Old Harbour | 35405 | St Catherine | |
| Waterford | 14572 | St Catherine | |
| Willow dene | 10021 | St Catherine | |
| Gregory Park | 15834 | St Catherine | |
| Passage Fort | 9240 | St Catherine | |
| Edgew ater | 5073 | St Catherine | |
| Helshire | 4396 | St Catherine | Storm Surge |
| Braeton | 11629 | St Catherine | |
| Old Harbour Bay | 6623 | St Catherine | Flooding/Storm Surge |
| Braes River | 2288 | St Elizabeth | |
| Burnt Savannah | 3243 | St Elizabeth | |
| Fullersw ood | 1470 | St Elizabeth | |
| Parottee | 1629 | St Elizabeth | |
| Nain | 1891 | St Elizabeth | |
| Bigw oods | 1859 | St Elizabeth | Flooding |
| Junction | 6739 | St Elizabeth | |
| Pedro Plains | 3227 | St Elizabeth | |
| Bull Savannah | 3008 | St Elizabeth | |
| Maggotty | 4215 | St Elizabeth | |
| Salt Spring | 3076 | St James | |
| Bonnygate | 2632 | St Mary | |
| Annotto Bay | 5669 | St Mary | Flooding/Storm Surge |
| Hagley Gap | 1666 | St Thomas | Landslide |
| Morant Bay | 4223 | St Thomas | Storm Surge |
| Albion | 1915 | St Thomas | Storm Surge |
| Yallahs | 6066 | St Thomas | Flooding/Storm Surge |

ECONOMIC DAMAGE

Damage Cost to Associated Sectors



COMMUNITIES IMPACTED BASED ON THE T.S. ISAAC PROJECTED CONE PATH AS OF 11 A.M.



Legend

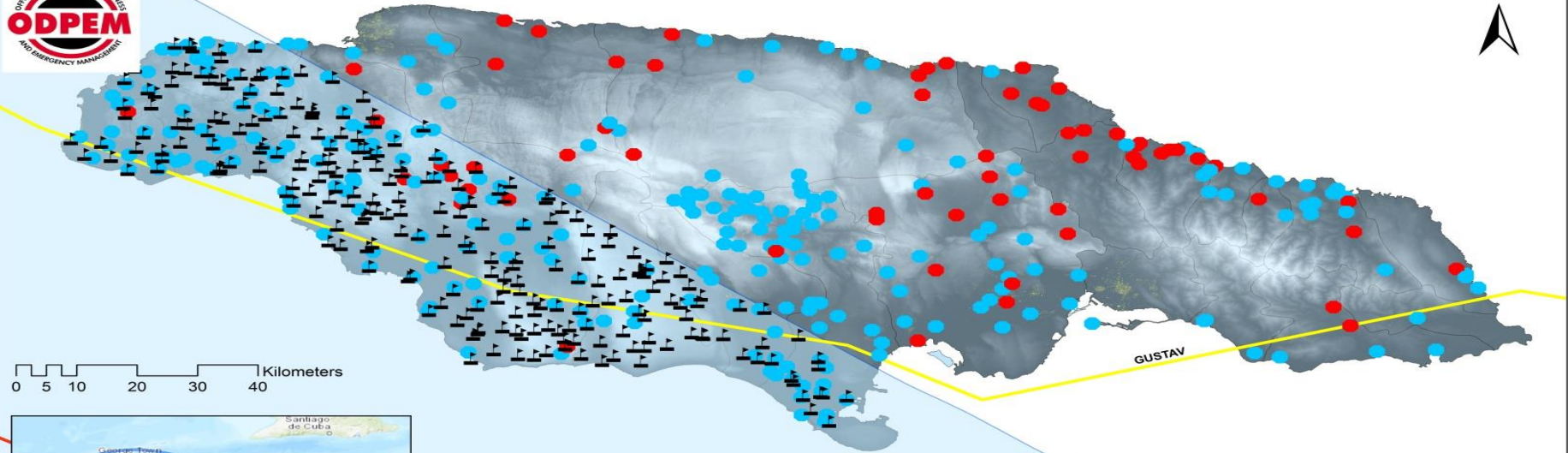
- High Risk Areas Since 1996
- Isaac Track Point
- Emily Track 2005
- Isaac Forecast Track
- Built-up Areas
- Vulnerable Communities
- Isaac Cone

Digital Elevation Model Value

High : 1002
Low : 0

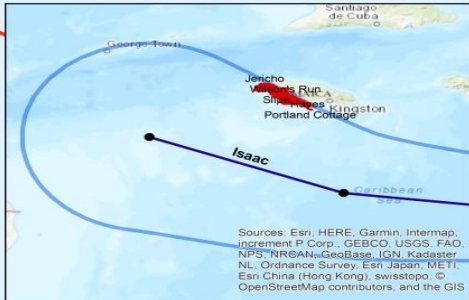
CRITICAL FACILITIES EXPOSED TO

POTENTIAL SCHOOLS IMPACTED BASED ON THE T.S. ISAAC PROJECTED CONE PATH AS OF 11 A.M.



GUSTAV

0 5 10 20 30 40 Kilometers



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS

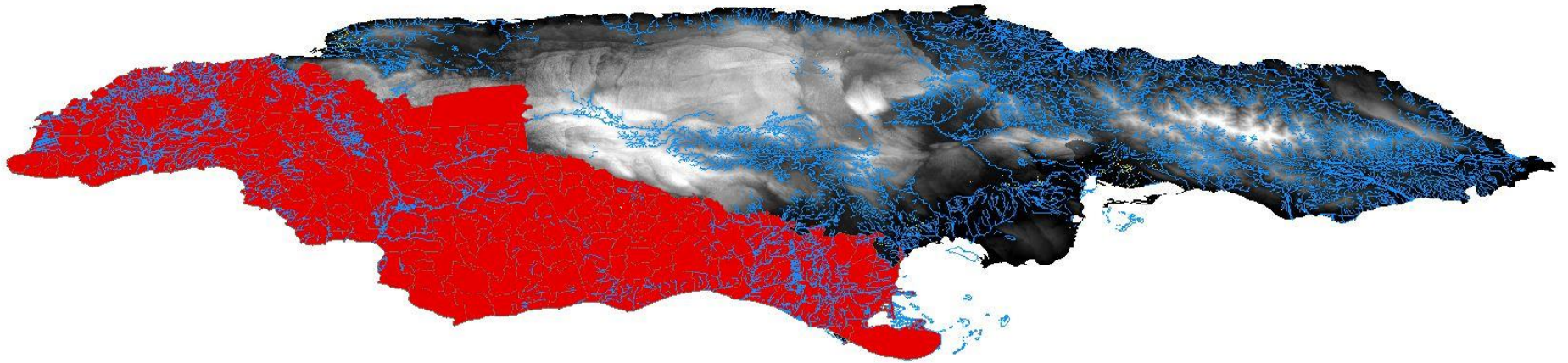
259
Schools
exposed

Legend

| | | |
|-----------------------------|----------------------|--------------------------------|
| Critical Facilities Schools | Built-up Areas | Digital Elevation Model |
| Hazard | Isaac Cone | Value |
| Flooding | Isaac Forecast Track | High : 1002 |
| Flooding/Landslide | | Low : 0 |
| Isaac Track Points | | |
| Ivan Track 2004 | | |
| Gustav Track 2008 | | |
| Emily Track 2005 | | |

RISK AND VULNERABILITY

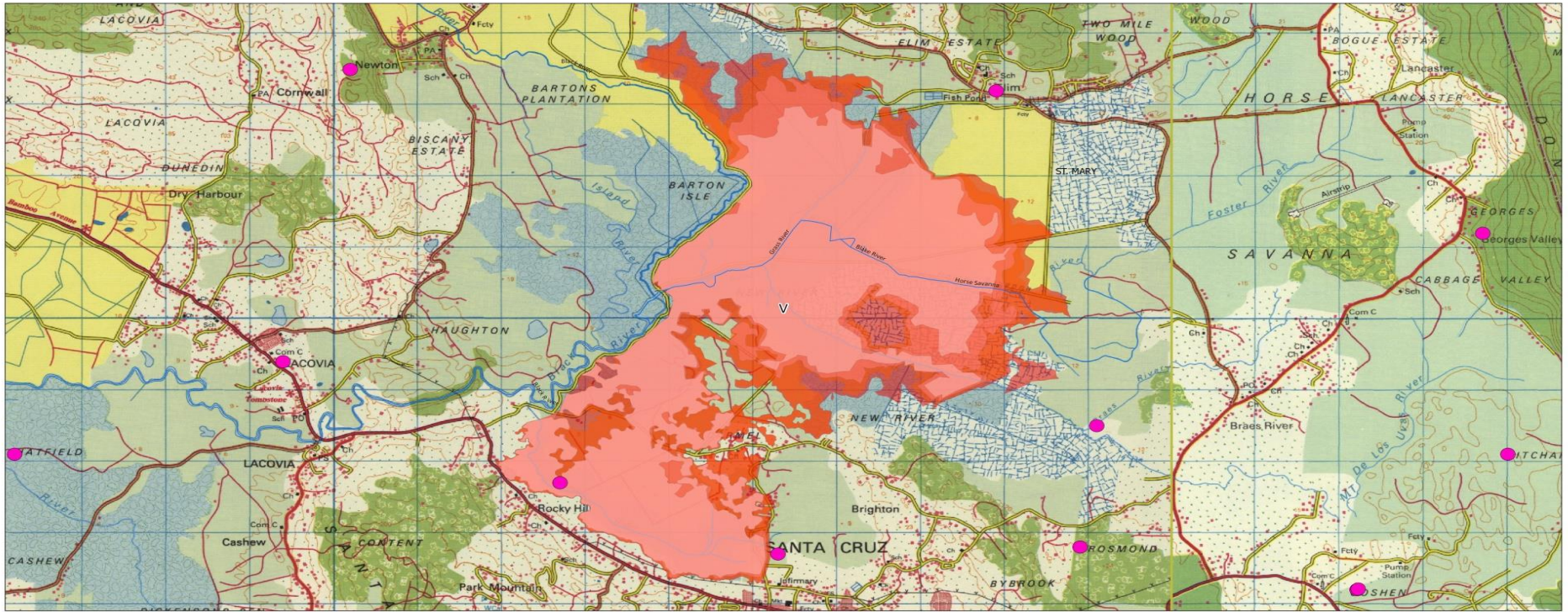
RIVERINE SYSTEMS



Hydrological Systems

Within exposure area based on Isaac Cone on Sept 13 as at 11 a.m.

BLACK RIVER FLOOD PRONE AREAS AND FLOOD PLAIN MAP



NOTES

Data Sources:
Flood Risk Areas - Office of Disaster Preparedness and Emergency Management

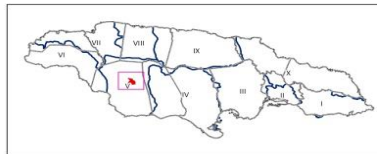
Rivers and Hydrologic Basin Boundary digitised by the Water Resources Authority from the 1: 50,000 and 1: 12,500 Metric Topographic Series from the Government of Jamaica

Parish Boundary - RIVamp (Planning Institute of Jamaica)

Flood Plains done by the Water Resources Authority

Legend

- Flood Risk Area (Type of Flooding Undocumented)
- Major River
- Minor River
- Parish Boundary
- Hydrologic Basin Boundary
- 10 Year Flood Boundary
- 25 Year Flood Boundary
- 50 Year Flood Boundary
- 100 Year Flood Boundary



| HYDROLOGIC BASINS | | |
|-------------------|----------------------|-------------------------|
| NO | NAME | AREA in Km ² |
| I | Blue Mountain South | 751.61 |
| II | Kingston | 251.7 |
| III | Rio Cobre | 1249.9 |
| IV | Rio Minho | 1814.4 |
| V | Black River | 1311.9 |
| VI | Cabarita River | 928.9 |
| VII | Great River | 807.9 |
| VIII | Martha Brae River | 732.6 |
| IX | Dry Harbour | 1563.1 |
| X | Blue Mountains North | 1530.8 |

Projection: Lambert Conformal Conic
Grid: JAD 2001 False Easting: 750 000
False Northing: 650 000

Central Meridian: -77W Latitude of Origin: 18N
Datum: WGS 1984 Linear Units: Metres

Copies available from the WRA
Kgn 6, Jamaica

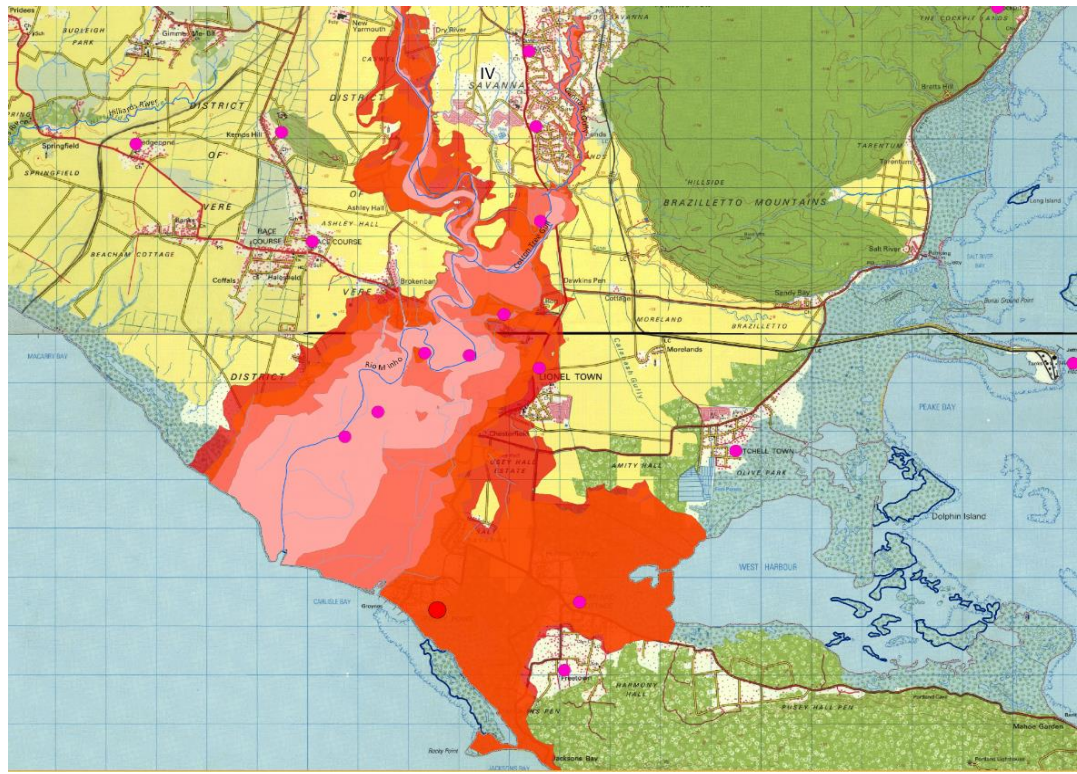
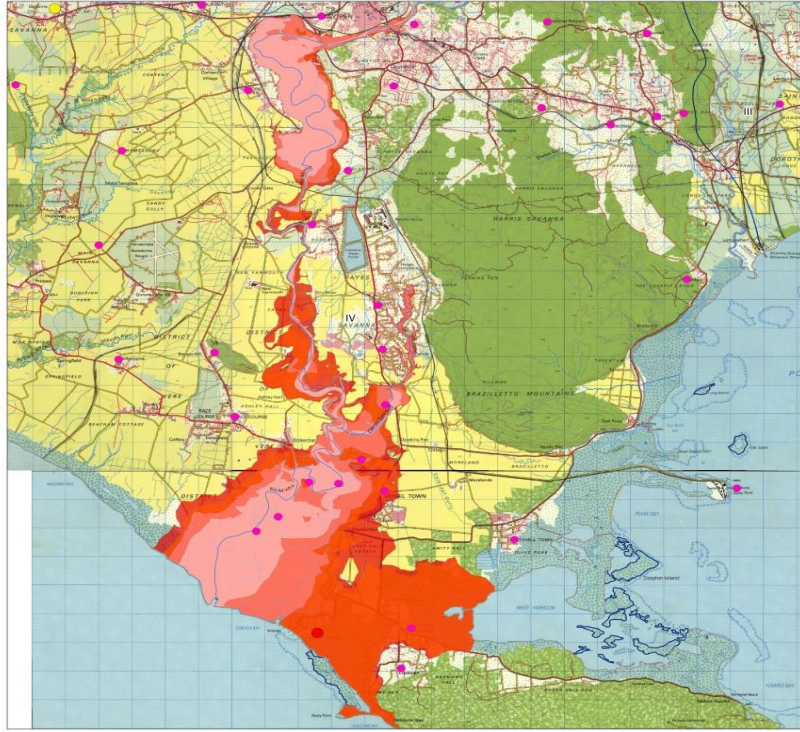


Ministry of Water and Housing Government of Jamaica



Water Resources Authority
April 2011

RIO MINHO FLOOD PRONE AREAS AND FLOOD PLAIN MAP



Legend

- Riverine Flooding
- Surface Water Induced Flooding
- Ground Water Induced Flooding
- Urban Runoff
- Storm Surge
- Flood Risk Areas (Type of Flooding Undocumented)
- Parish Boundary
- Hydrologic Basin Boundary
- 10 Year Flood Boundary
- 25 Year Flood Boundary
- 50 Year Flood Boundary
- 100 Year Flood Boundary

- Riverine Flooding
- Surface Water Induced Flooding
- Ground Water Induced Flooding
- Urban Runoff
- Storm Surge
- Flood Risk Areas (Type of Flooding Undocumented)
- Major River
- Minor River
- Parish Boundary
- Hydrologic Basin Boundary
- 10 Year Flood Boundary
- 25 Year Flood Boundary
- 50 Year Flood Boundary
- 100 Year Flood Boundary

| NO | NAME | AREA in Km ² |
|------|----------------------|-------------------------|
| I | Blue Mountain South | 751.61 |
| II | Kingston | 253.7 |
| III | Rio Cobre | 1249.9 |
| IV | Rio Minho | 1814.4 |
| V | Black River | 1311.9 |
| VI | Cabrilla River | 928.9 |
| VII | Great River | 807.9 |
| VIII | Martha Brae River | 732.6 |
| IX | Dry Harbour | 1503.1 |
| X | Blue Mountains North | 1530.8 |



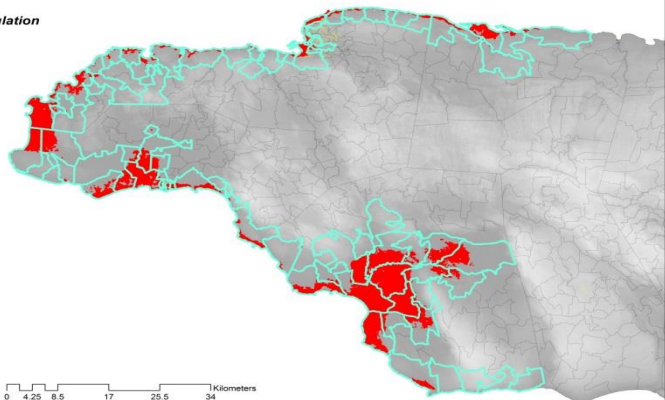
Projection: Lambert Conformal Conic
 Grid: IAD 2002, False Easting: 750 000 False Northing: 650 000
 Central Meridian: 77W, Latitude of Origin: 18N Datum: WGS 1984
 Linear Units: Meters

Data Sources:
 Flood Risk Areas - Office of Disaster Preparedness and Emergency Management
 Rivers and Hydrologic Basin Boundary digitized by the Water Resources Authority from the 1: 50,000 and 1: 12,500
 MATH Topographic Series from the Government of Jamaica.
 Parish Boundary - RIWAMP (Planning Institute of Jamaica)
 Flood Plains done by the Water Resources Authority



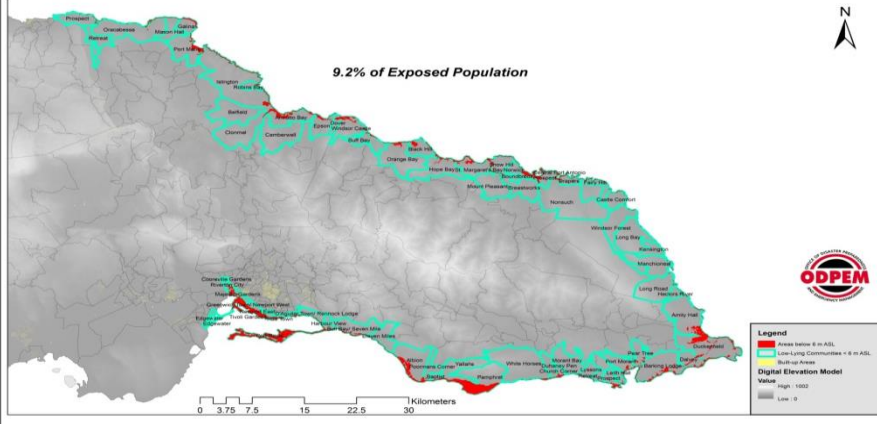
COASTAL/ LOW LYING AREAS & ITS EXPOSED POPULATION

8.8 % of Exposed Population



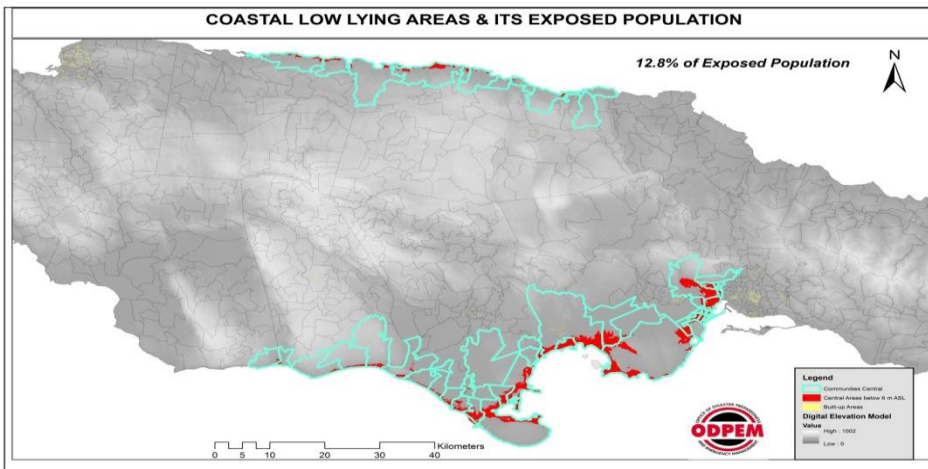
LOW LYING AREAS & ITS EXPOSED POPULATION

9.2% of Exposed Population



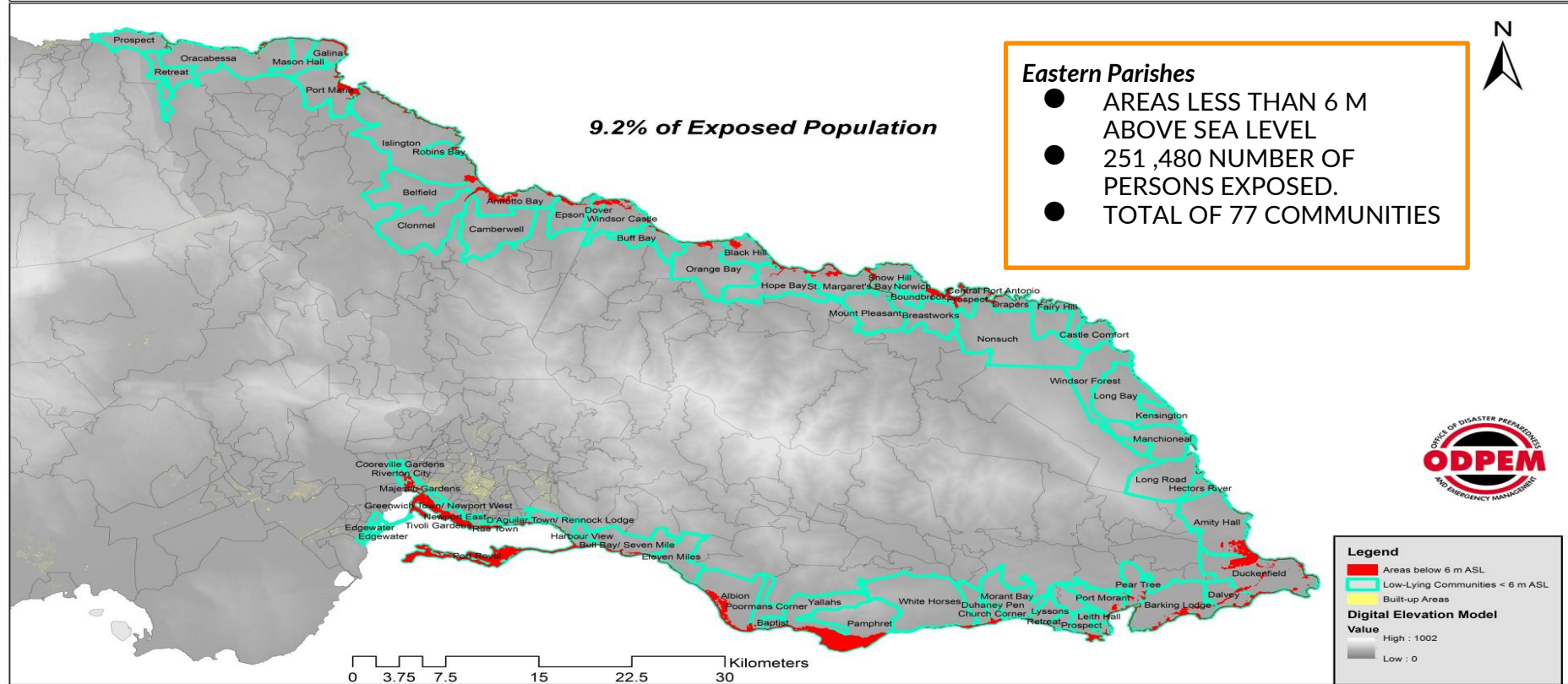
COASTAL LOW LYING AREAS & ITS EXPOSED POPULATION

12.8% of Exposed Population



COMMUNITIES IN LOW-LYING COASTAL AREAS

LOW LYING AREAS & ITS EXPOSED POPULATION



COMMUNITIES IN LOW-LYING COASTAL AREAS

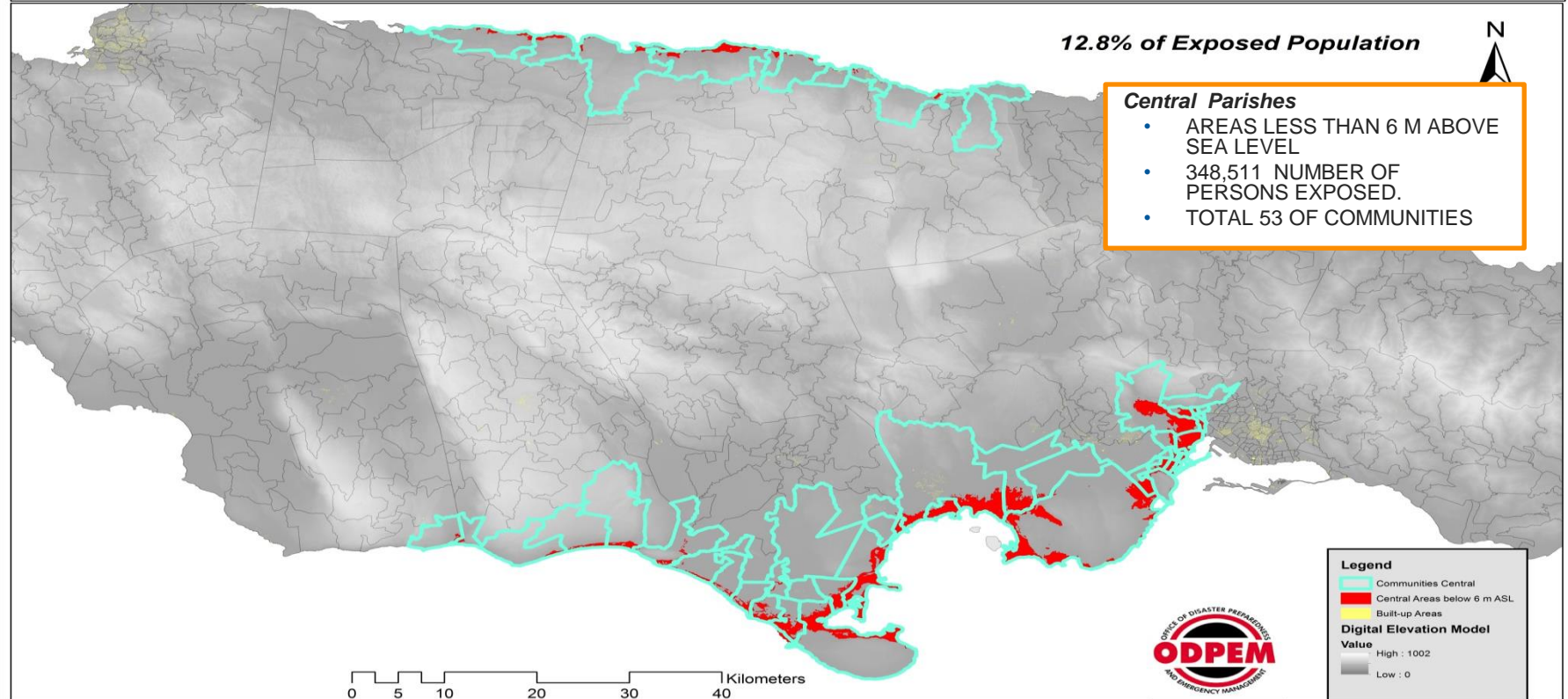
COASTAL LOW LYING AREAS & ITS EXPOSED POPULATION

12.8% of Exposed Population



Central Parishes

- AREAS LESS THAN 6 M ABOVE SEA LEVEL
- 348,511 NUMBER OF PERSONS EXPOSED.
- TOTAL 53 OF COMMUNITIES

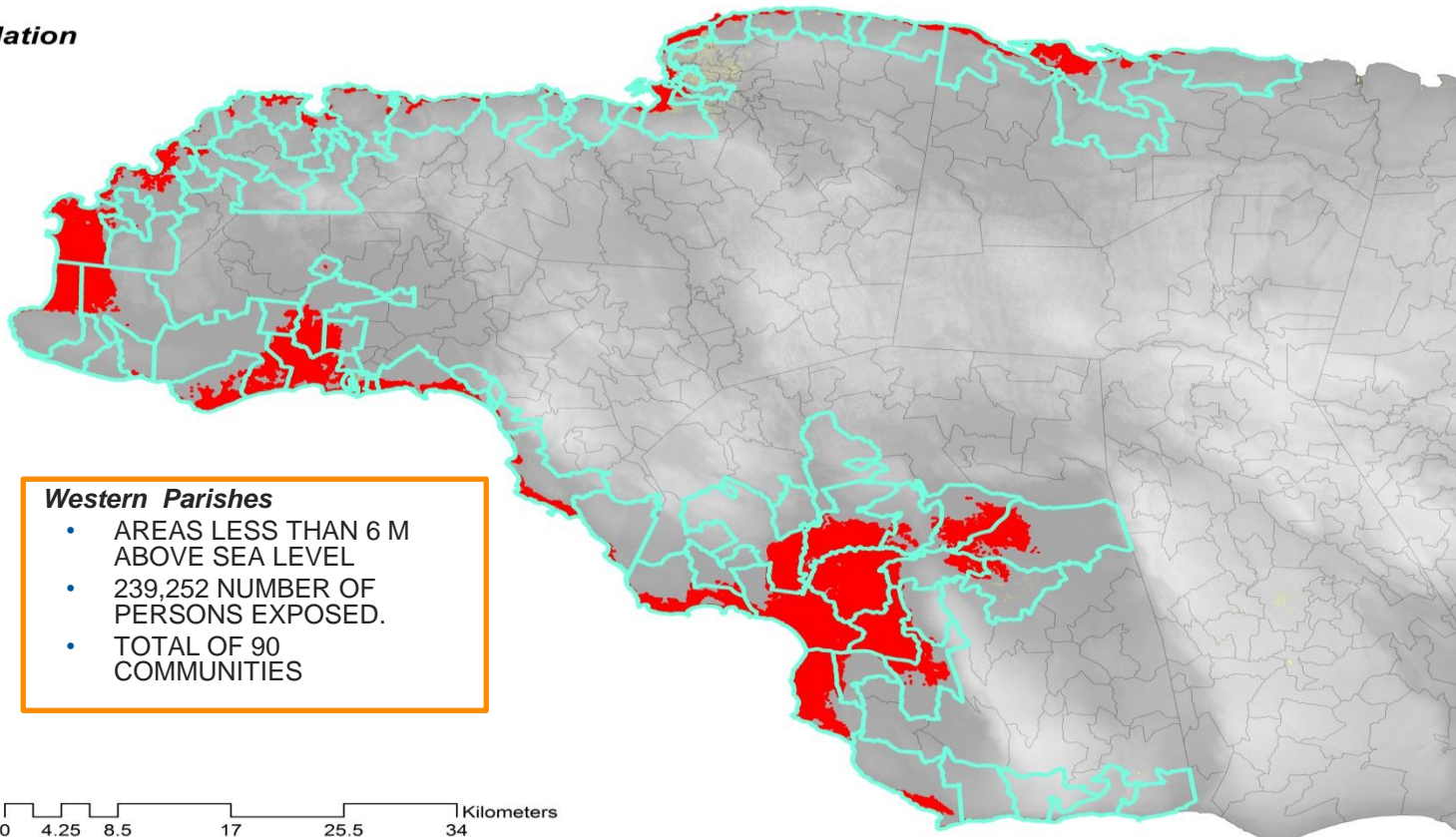


0 5 10 20 30 40 Kilometers

COMMUNITIES IN LOW-LYING COASTAL AREAS

COASTAL/ LOW LYING AREAS & ITS EXPOSED POPULATION

8.8 % of Exposed Population



Legend

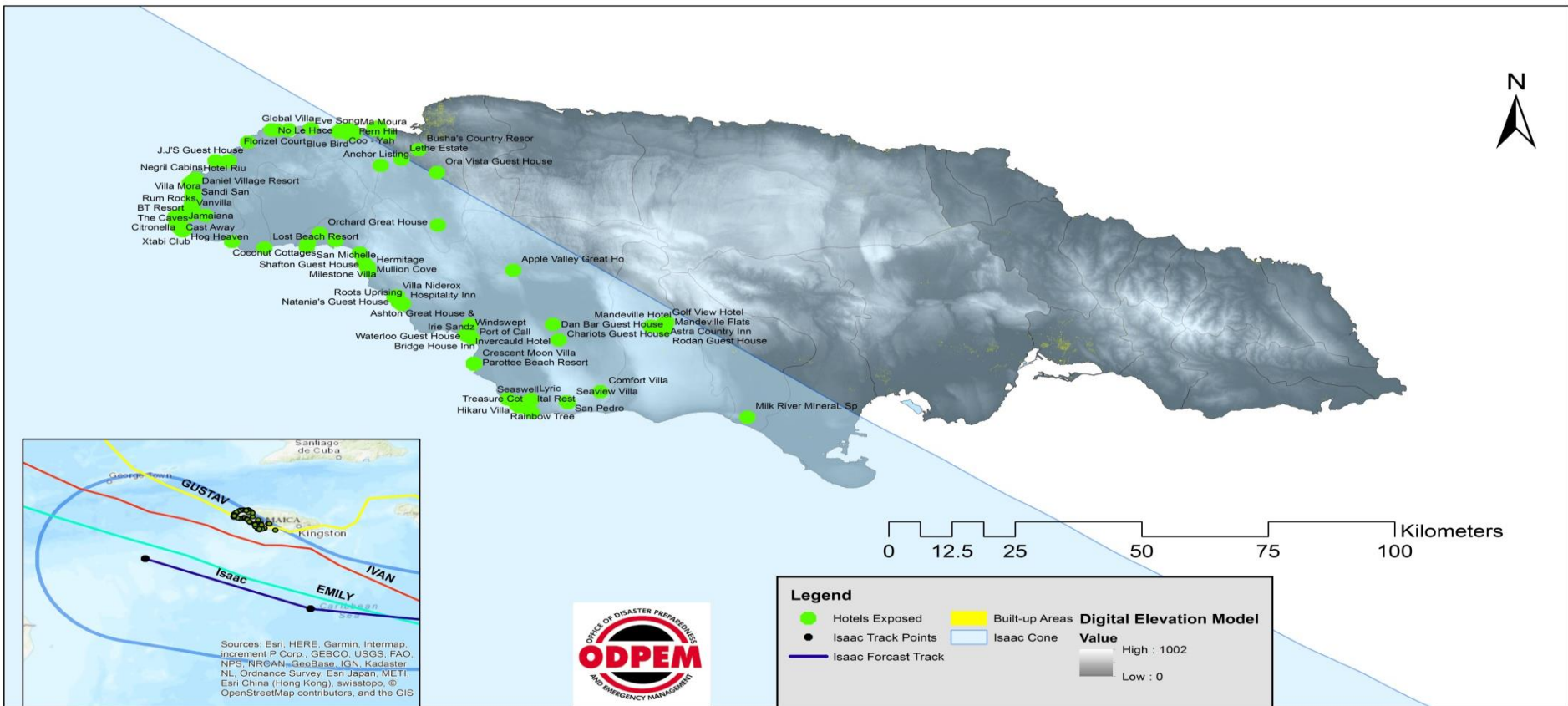
- Western Communities
- Western Areas below 6 m ASL
- Built-up Areas

Digital Elevation Model Value

- High : 1002
- Low : 0



POTENTIAL HOTELS THAT MAY BE IMPACTED BASED ON THE T.S. ISAAC PROJECTED CONE PATH AS OF 11 A.M. THURSDAY, SEPT 13



SUMMARY

ISAAC

Tropical Storm

HISTORICAL BASELINE

Communities Impacted

Gustav 61
Ivan 56
Emily 38
Total 155

RISK AND VULNERABILITY

Communities in Low Lying coastal areas

Eastern – 77 251,480
Central -53 348,511
Western – 90 239,252
Total 220 839 243

River Systems

Rio Minho, Hope River, Black River,

Critical Facilities

Hotels 280, Shelters 332, Schools 259



SITUATION REPORT
OFFICE OF DISASTER PREPAREDNESS
AND EMERGENCY MANAGEMENT

| | |
|-----------------------|---------------------|
| DATE: | August 2, 2016 |
| TIME: | 10:00 p.m. |
| EVENT: | Tropical Storm Earl |
| DATE OF EVENT: | August 1-2, 2016 |
| SITUATION REPORT NO.: | 3 |

NATURE OF EVENT:

A TROPICAL STORM WARNING *rem* moves over the western Caribbean. This *n* sustained wind speeds of 63-118 km/h (39-

At 4:00 p.m. the centre of Tropical Storm Longitude 81.5 degrees West, or about 32 725 kilometres (450 miles) east of Belize (16 mph) and this motion is expected to Earl will pass just north of the Honduras near to the Belize coast early Thursday. mph), with higher gusts. Additional strength as it approaches Belize and the Yu

Doppler radar reports confirm that, isolated waters to the north and south of Jamaica, wh of most parishes. Gusty winds of 61-76 k coastal areas of eastern and central parishes.

Over Jamaica, residents should still expect o along with thunderstorms and gusty wind therefore, still possible over low-lying and

Showers and thunderstorms are however associated weather moves farther away fro

All small craft operators are reminded to n been lifted and wind and sea conditions ret

NATIONAL DAMAGE ASSESSMENT PLAN



Damage caused by Hurricane Gilbert, 1988.

Prepared by: Office of Disaster Preparedness and Emergency Management
 12 Camp Road
 Kingston 4, Jamaica
 Phone 809-928-5111-4
 Fax 809-928-5503
 E-mail: odpem@cwjamaica.com
 Website: www.odpem.org.jm

May 2001

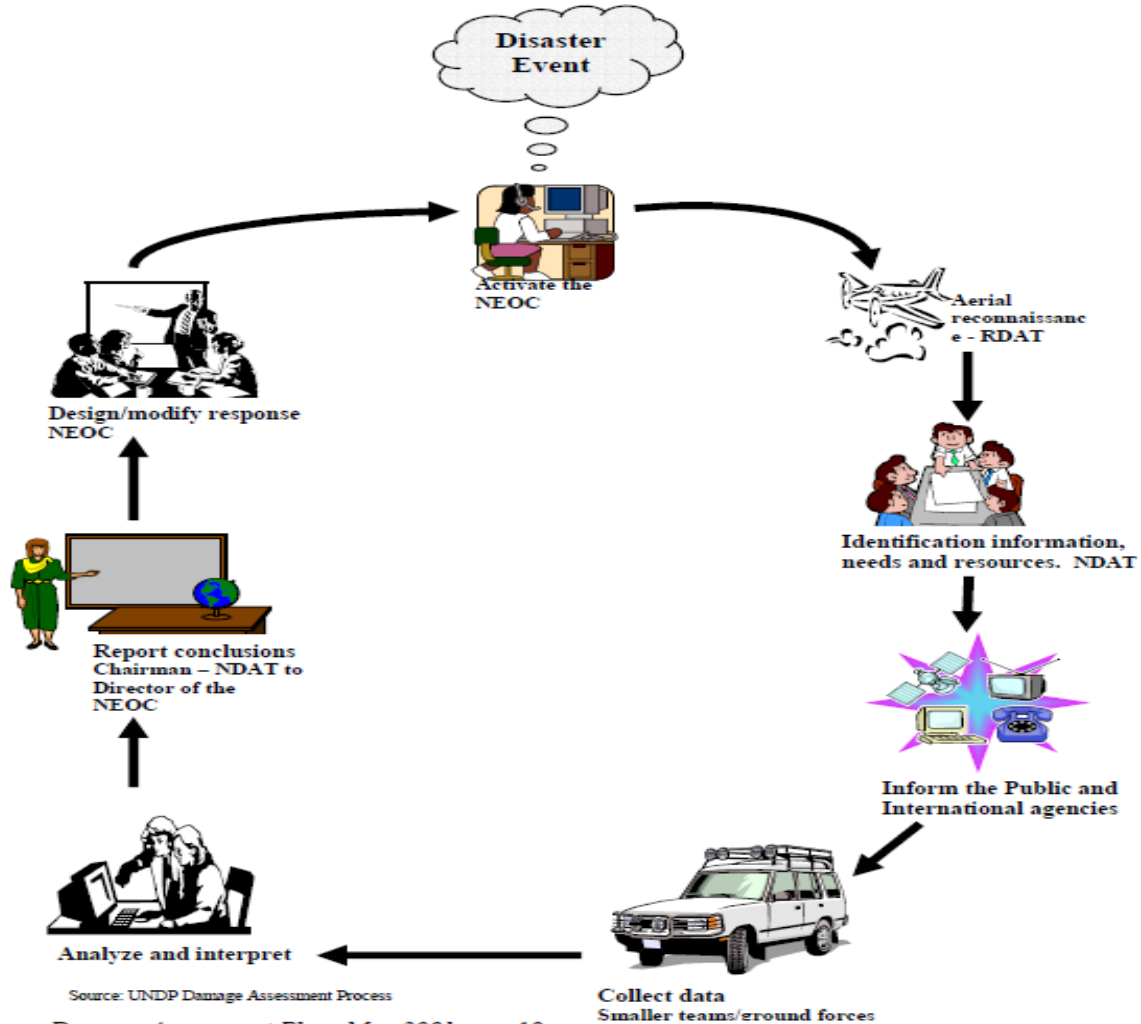
Socio-economic and Environmental Disaster Impact Assessment Handbook for Jamaica

A Quick Guide to undertaking an assessment using the DaLA methodology following an Extreme Event in Jamaica



Figure 1. THE ASSESSMENT PROCESS

Damage Assessment Process



| Area | No. Affected households | Persons Affected | Category of Damage | | | |
|---------------------|-------------------------|------------------|--------------------|----------|----------|-------------------|
| | | | H/H items | Minor | Severe | Totally Destroyed |
| Mill Bank | 8 | 15 | 4 | | | 4 |
| Ginger House | 3 | 11 | 3 | | | |
| Grants Level | 8 | 14 | 7 | | | |
| Berry Dale | 4 | 10 | 2 | 2 | | |
| Comfort Castle | 1 | 4 | 1 | | | |
| East Baptist Avenue | 1 | 3 | | | | 1 |
| Naylors Hill | 1 | 4 | 1 | 1 | | |
| TOTAL | 26 | 61 | 18 | 3 | 0 | 5 |

Source: Ministry of Labour and Social Security

The following items were provided by the MLSS to families that were affected.

| Communities | Items Issued | Relief items needed | | |
|---------------------|--|---------------------|-----------|----------|
| | | Sheet Set | Mattress | Stove |
| Mill Bank | 7 Food Packages | 10 | 2 | 2 |
| Ginger House | 2 Food Packages | 4 | 4 | |
| Grants Level | | 2 | 2 | |
| Berry Dale | 2 Food Packages | 4 | 4 | |
| Comfort Castle | 1 Food Package | 2 | 2 | 1 |
| East Baptist Avenue | 1 Tarpaulin 1 Mattress | 2 | 1 | 1 |
| TOTAL | 12 Food Packages 1 Tarpaulin 1 Mattress | 24 | 15 | 4 |

NEEDS

- Seeds and fertilizers to assist affected farmers in St Thomas
- General improvements in resourcing of the Jamaica Fire Brigade to respond to emergency events. Resources required include pick-up truck to access areas inaccessible by pumpers and newer trucks to replace the existing fleet
- Evacuation planning for coastal communities such as Bamboo River, St Thomas
- Assessment and long term solution for 3 houses in Trinityville that are threatened due to breakaway in the White Gate, White Hall area of Seaforth also called Blue Diamond.
- Detailed assessment of the impacts

COVID – 19 PLANNING TOOLS



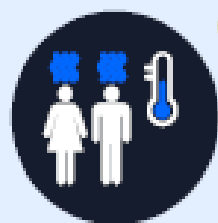
COVID-19: Jamaica

11 AUGUST 2020



PDC | GLOBAL

Jamaica Summary



CASES SUMMARY

1,031 Confirmed Cases

8 New Cases (last 24h)

14 Deaths

745 Recovered

43,778 Tested

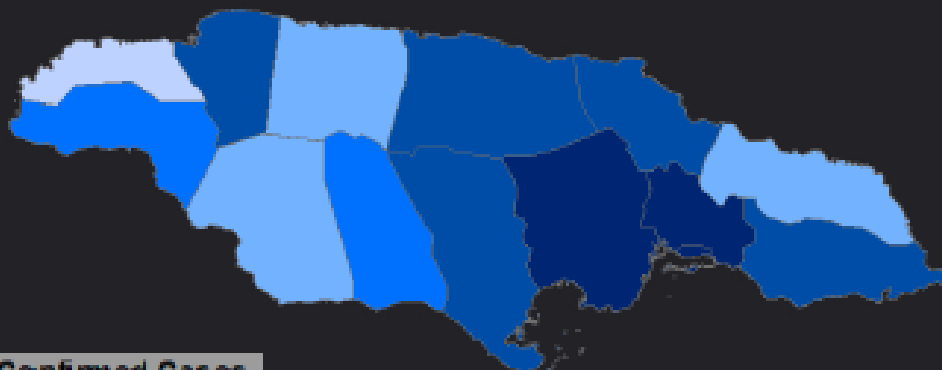


QUARANTINE SUMMARY

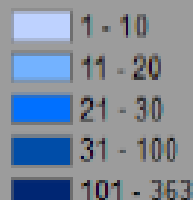
5 In Quarantine Facilities

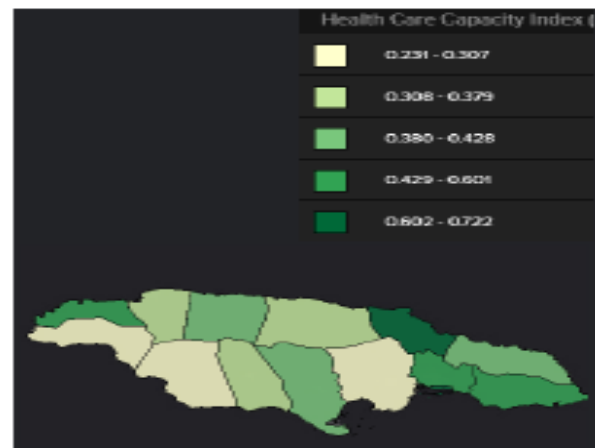
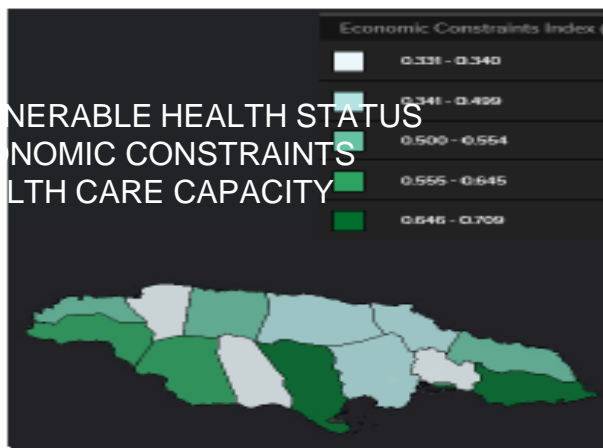
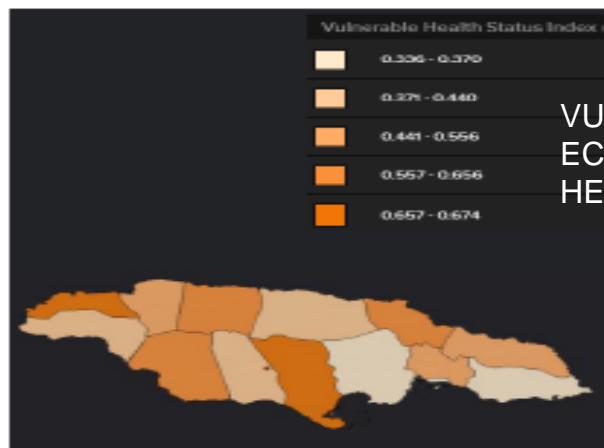
24 In Isolation Facilities

23,540 In Home Quarantine



Confirmed Cases





VULNERABLE HEALTH STATUS
ECONOMIC CONSTRAINTS
HEALTH CARE CAPACITY

3.0 Million
TOTAL POPULATION

392,930
ELDERLY POPULATION
(60+)

| Country | Cases | Deaths | Population | Age 60+ | Hospital Beds per 10k Persons | Doctors / Nurses per 10k Persons |
|--------------------|--------|--------|--------------|-------------|-------------------------------|----------------------------------|
| Cuba | 3,093 | 88 | 11.3 Million | 2.4 Million | 52 | 81.9 / 79.8 |
| Haiti | 7,649 | 183 | 11.4 Million | 883,001 | 7 | 2.35 / 1 |
| Dominican Republic | 81,094 | 1,346 | 10.8 Million | 1.2 Million | 16 | 15.6 / 13.3 |
| Belize | 177 | 2 | 397,621 | 30,363 | 13 | 11.26 / 19.6 |
| Jamaica | 1,031 | 14 | 3.0 Million | 392,930 | 17 | 13.2 / 16.7 |



Key demographics snapshot



3.0 MILLION
TOTAL POPULATION (2020)



392,930
ELDERLY POPULATION (60+)

PDC Risk and Vulnerability Highlights



21 out of 28
LAC Vulnerability
Ranking



15 out of 30
LAC Coping Capacity
Ranking



11 out of 29
LAC Vulnerable Health
Status Ranking



9 out of 27
LAC Resilience
Ranking



PHYSICIANS

13.2
per 10,000



NURSES / MIDWIVES

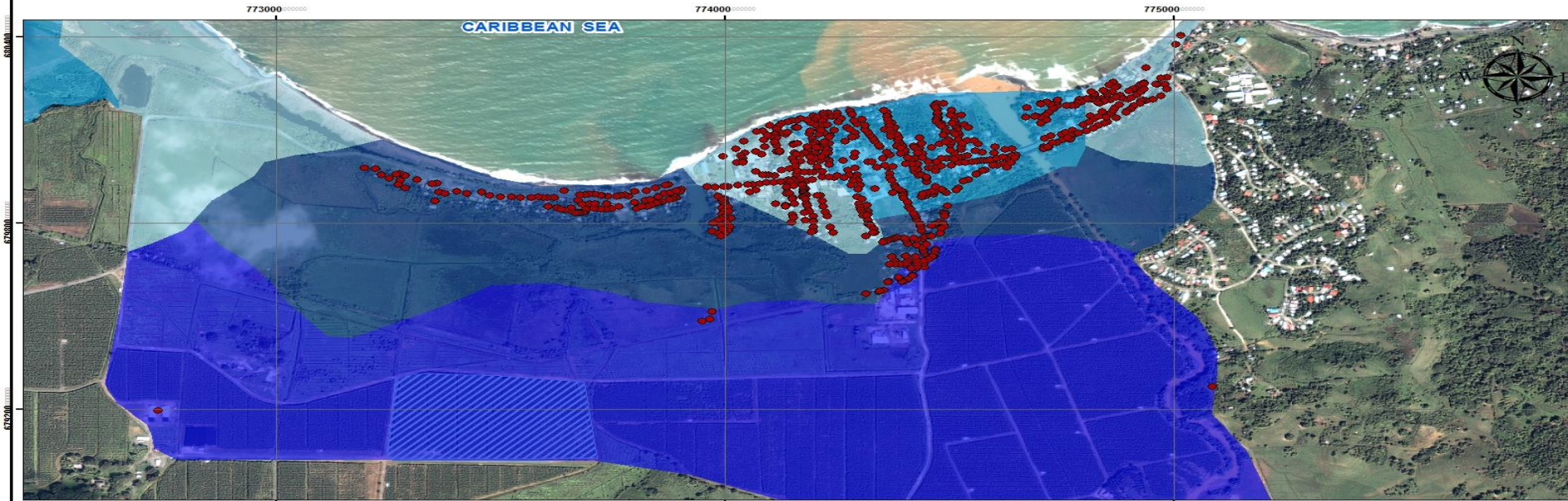
16.7
per 10,000



HOSPITAL BEDS

17
per 10,000

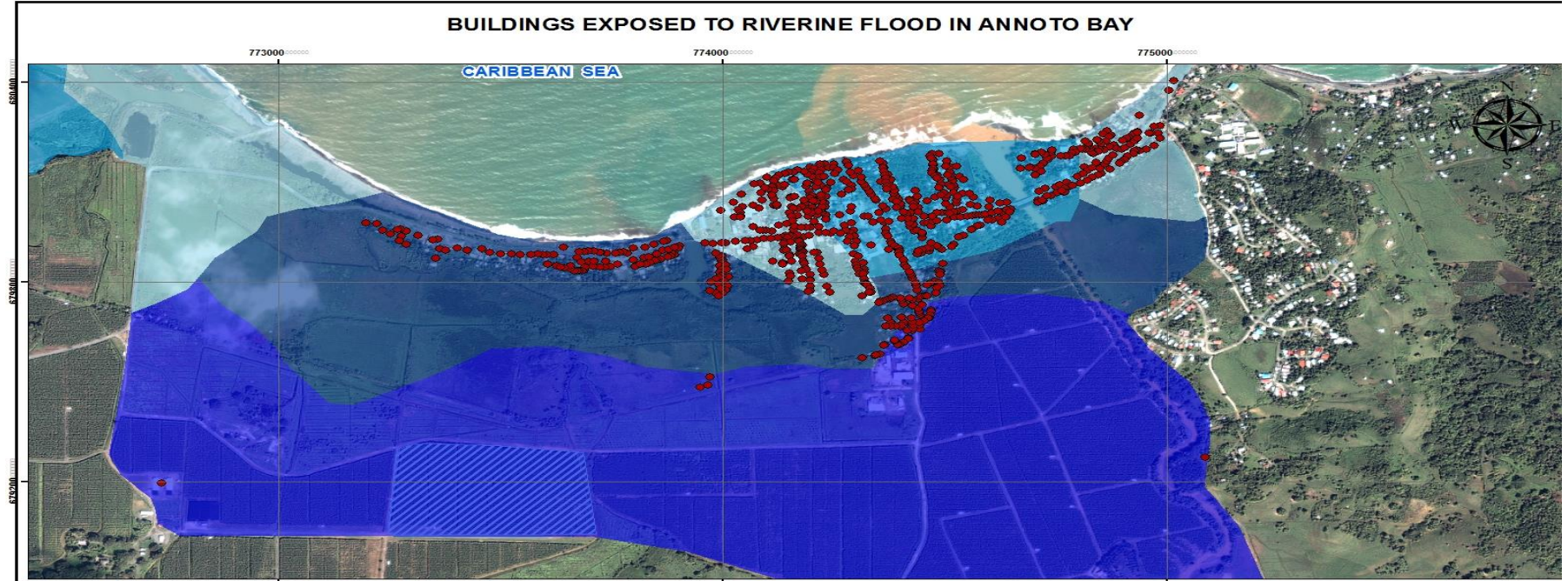
BUILDINGS EXPOSED TO RIVERINE FLOOD IN ANNOTTO BAY



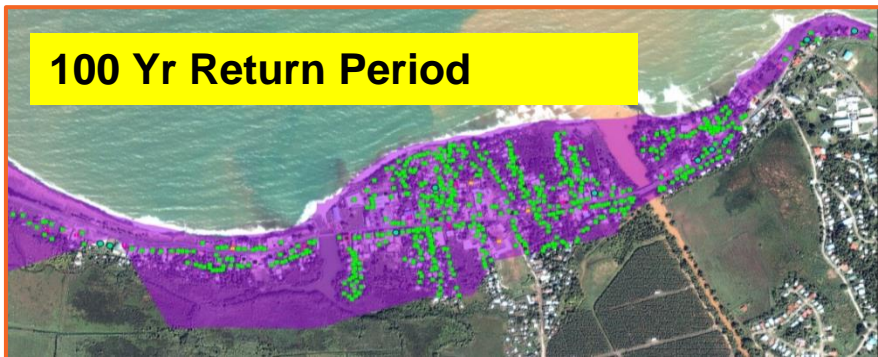
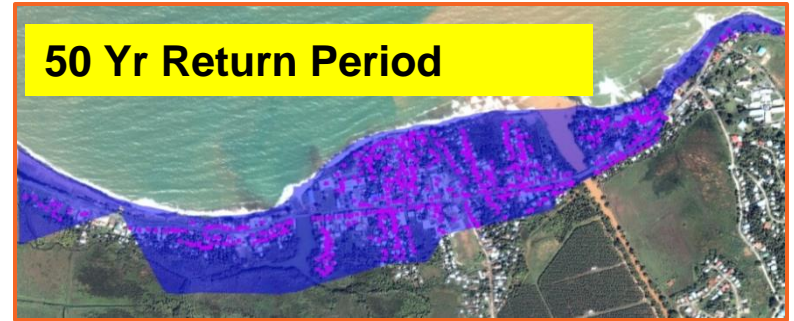
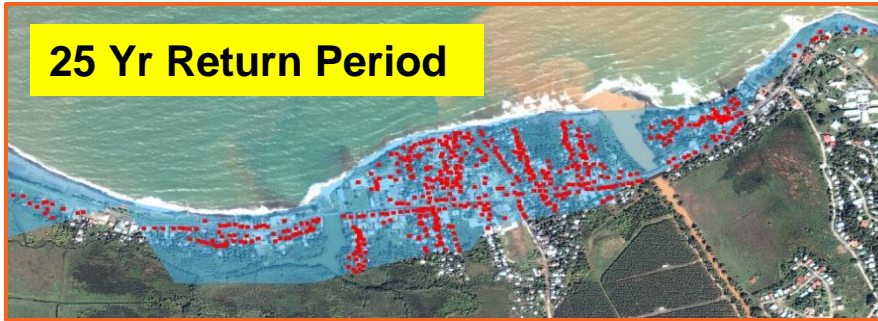
- This is a Flood map of Annotto Bay Based on the 2001 flood event. How would you advise the NEOC if a trough of similar characteristics as 2001 is forecast for this area, and what damage would you expect after the event? – 15 minutes

- 729 buildings were affected during 2001 flood event
- 591 were houses, 109 commercial, 9 critical facilities etc.
- 2740 persons affected

BUILDINGS EXPOSED TO RIVERINE FLOOD IN ANNOTO BAY



ANNOTTO BAY STORM SURGE HAZARD ASSESSMENT



Calculate number of buildings in hazard zone

| Scenario | # of buildings Exposed |
|----------|------------------------|
| 25 year | 548 |
| 50 year | 585 |
| 100 year | 621 |

Critically Affected Areas in Westmoreland

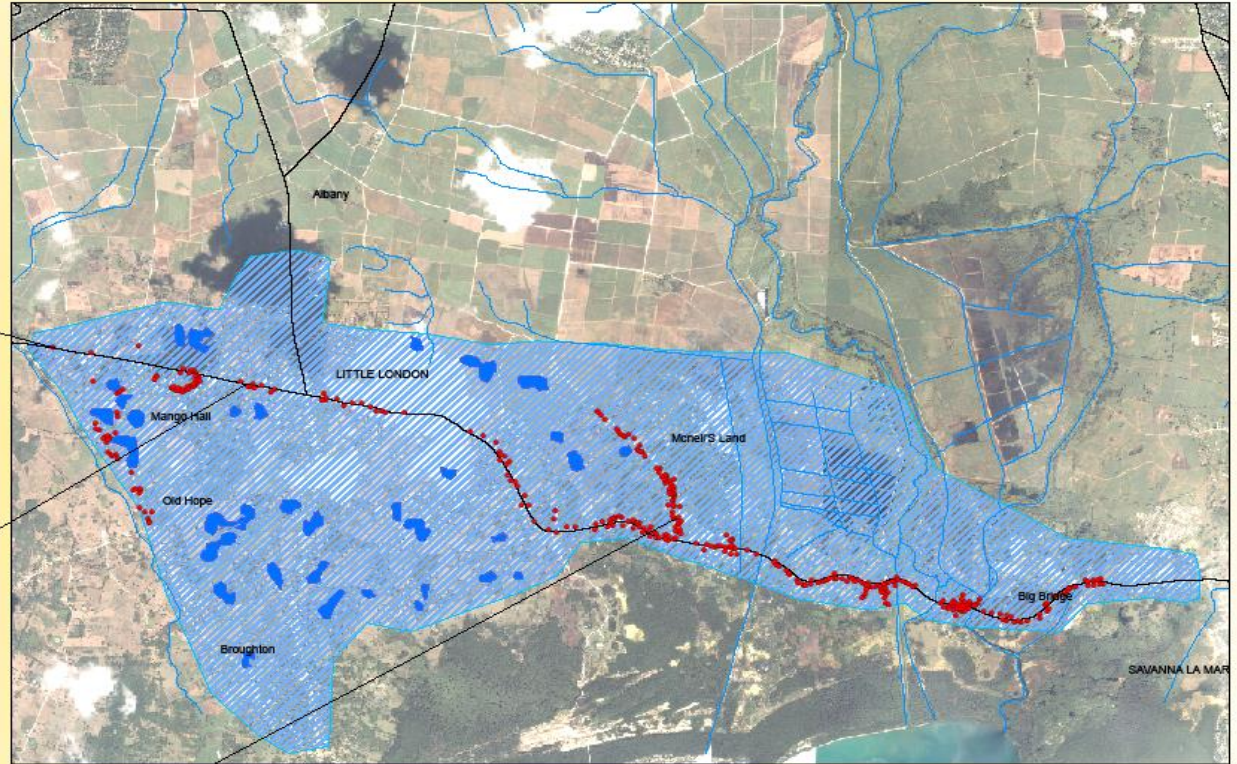
Inundation of houses in New Hope



Flooding of Little London Main Road



Inundation of McNeil's Land
6 ft in some areas



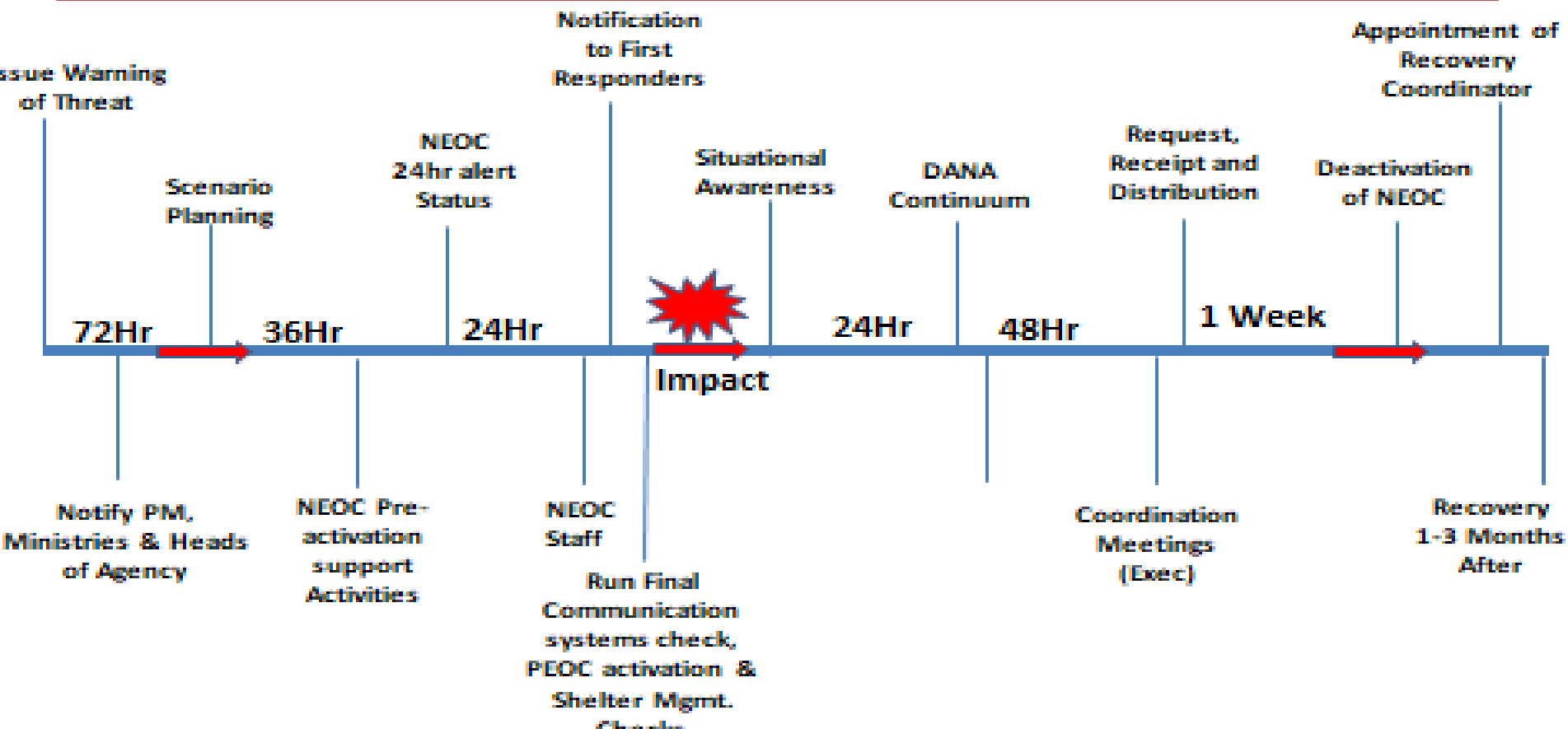
Legend

- Houses
- Major Road
- River
- Ponds
- ▨ Flood Extent



0 0.5 1 Kilometers

NEOC Timelines and key Coordination Nodes



Major Players in Recovery

- a. Disaster Management Institutions – ODPEM, Municipal corporations,
- b. Planning Institute Of Jamaica
- c. Cabinet Office
- d. Ministry of Finance
- e. MDA's based on disaster event and sector damage.



NATIONAL DISASTER RESPONSE COORDINATION PLAN JAMAICA



June 2022

ESG: PLANNING AND RECOVERY

FUNCTION:

IMPACT ASSESSMENT*

RESPONSIBILITY:

PRIMARY

AGENCY:

PLANNING INSTITUTE OF JAMAICA

PREPAREDNESS

- Coordinate review of post impact assessment methodology and update as necessary
- Review existing Core Team and Identify potential new team members
- Review and update base-line data
- Liaise with ministry wrf ICT and National Emergency Response GIS Team on acquisition of/access to drones, remote sensing, other technology for damage assessment
- Coordinate refresher training for impact analysis

RESPONSE

- Coordinate production of initial impact assessment report to inform early recovery planning
- Coordinate final impact assessment report

Impact assessment includes socio-economic, health, physical, environmental impacts and downstream effects

ESG: PLANNING AND RECOVERY

FUNCTION: DAMAGE ASSESSMENT

RESPONSIBILITY: PRIMARY

AGENCY: NATIONAL WORKS AGENCY

PREPAREDNESS

- a) Coordinate review of plans for damage assessment, building placarding and closure
- b) Identify potential damage assessment team members
- c) Coordinate collection of baseline data required for damage assessment from all sectors
- d) Liaise with ODPEM on acquisition of/access to drones, other technology for damage assessment
- e) Coordinate refresher training for damage assessment teams
- f) Coordinate with JIE, Academia, Institute of Architects availability of personnel to assist with damage assessment

RESPONSE

- a) Coordinate rapid damage assessment teams
- b) Collate initial damage assessment data and generate initial report within 72 hours of impact
- c) Coordinate private sector input to assessment
- d) Coordinate more detailed assessment and generate report
- e) Placard buildings identified as dangerous
- f) Coordinate with NEOC security for prevention of access to closed buildings
- g) Coordinate debrief and After Action Report



NATIONAL DISASTER RESPONSE COORDINATION

PLAN JAMAICA



June 2022



NATIONAL DISASTER RESPONSE COORDINATION PLAN JAMAICA



June 2022

ESG: PLANNING AND RECOVERY
FUNCTION: DATA ANALYSIS AND MANAGEMENT
RESPONSIBILITY: PRIMARY
AGENCY: ODPEM

PREPAREDNESS

- Provide support to ESG Leads and agencies in review and update of all NDRM data bases
- Coordinate update/acquisition of new or additional software for maintaining data bases
- Support production/updates of risk analyses, risk maps, scenarios

RESPONSE

- Coordinate capture and collation of data from incident sites, PEOCs, NEOC
- Ensure flow of accurate data in support of NEOC and PEOCs
- Coordinate data inputs for operational maps
- Coordinate back-up and archiving of data, reports, maps
- Support retrieval of data as required

ESG: PLANNING AND RECOVERY
FUNCTION: DOCUMENTATION AND RECORDS
RESPONSIBILITY: PRIMARY
AGENCY: STATISTICAL INSTITUTE OF JAMAICA

PREPAREDNESS

- a) Establish and disseminate data standards
- b) Coordinate development and dissemination of templates, data gathering instruments
- c) Coordinate refresher training including for parish and community teams
- d) Coordinate review and update of reporting forms/templates for incident sites, parish and national EOCs
- e) Coordinate development/review of formats for After Action Reports

RESPONSE

- a) Coordinate data collection
 - b) Coordinate compilation and quality assurance
 - c) Ensure archiving of all data
 - d) Ensure After Action Reports are captured and archived
-

NATIONAL DISASTER RESPONSE COORDINATION PLAN JAMAICA



June 2022



NATIONAL DISASTER RESPONSE COORDINATION PLAN JAMAICA



June 2022

ESG: PLANNING AND RECOVERY

FUNCTION: MITIGATION/RISK REDUCTION/CLIMATE CHANGE ADAPTATION (CCA)

RESPONSIBILITY: PRIMARY

AGENCY: ODPEM

PREPAREDNESS

- Coordinate discussions on how risk reduction can be integrated into response operations and ensure response plans reflect these safeguards
- Review plans related to integrating risk reduction (mitigation) CCA into rehabilitation and recovery planning and update
- Coordinate discussions on how climate mitigation can be integrated into recovery planning where appropriate

RESPONSE

- Support Emergency Management ESG in hazardous materials disposal, debris disposal, clean-up operations
- Coordinate review of operational priorities to ensure inclusion of risk reduction where appropriate
- Coordinate review of recovery and rehabilitation plans to ensure risk reduction and climate change adaptation and mitigation options are integrated
- Review NDRM Plan and ensure harmonisation with recovery plans



NATIONAL DISASTER RESPONSE COORDINATION PLAN JAMAICA



June 2022

ESG: PLANNING AND RECOVERY
FUNCTION: ENVIRONMENTAL MANAGEMENT
RESPONSIBILITY: PRIMARY
AGENCY: NATIONAL ENVIRONMENT AND PLANNING AGENCY

PREPAREDNESS:

- a) Coordinate review of response and recovery plans and ensure environmental considerations are adequately included
- b) Coordinate acquisition of monitoring/measuring equipment
- c) Coordinate review/identification of waste/debris disposal sites in collaboration with ESG Lead Emergency Management, NSWMA, PDCs

RESPONSE

- a) Coordinate environmental surveillance programme and teams
- b) Compile and analyse environmental data and provide reports
- c) Coordinate monitoring of incident/response sites for environmental parameters
- d) Coordinate monitoring of shelters for environmental parameters
- e) Provide technical support to Emergency Management ESG
- f) Maintain ongoing environmental monitoring programmes
- g) Coordinate environmental aspects of response/clean-up operations
- h) Monitor management and disposal of hazardous materials and debris
- i) Coordinate debrief and After Action Report



NATIONAL DISASTER RESPONSE COORDINATION PLAN JAMAICA



June 2022

ESG: PLANNING AND RECOVERY

FUNCTION: NATURAL RESOURCE MANAGEMENT

RESPONSIBILITY: PRIMARY

AGENCY: NATIONAL ENVIRONMENT AND PLANNING AGENCY

PREPAREDNESS

- a) Coordinate review of natural resources baseline data and update
- b) Coordinate review of natural resource valuations and update
- c) Coordinate review of sensitivity and risk maps and update
- d) Coordinate review of guidance for environmentally sensitive response
e.g. for beach clean-up, hazardous materials clean-up
- e) Coordinate sensitisation of first responders as necessary

RESPONSE

- a) Provide guidance on environmentally friendly response operations

SUB REGION COORDINATION NORTH-WESTERN

1. Jamaica
2. Bahamas
3. Belize
4. Turk & Caicos
5. Haiti



FOCAL POINT SUPPORT/COORDINATION

THE SRFP FACILITATED SUPPORT AND COORDINATION ACTIVITIES:

1. HAITI LOGISTICS AND RESPONSE (EARTHQUAKE 2010)
2. BELIZE (TELECOMS TECHNICAL ASSISTANCE 2010)
3. BAHAMAS (TECHNICAL ASSISTANCE & RELIEF: HURRICANE IRENE 2011)
4. ADOPTION OF SRCC SOPs
5. NEOC EQUIPMENT AND HF RADIO TOWER RE-INSTALLATION 2012
6. TURKS & CAICOS (IDA TRAINING, SECONDMENT TECHNICAL STAFF - 2012)



THANK YOU

DISASTER RISK MANAGEMENT AND DEVELOPMENT



Reducing disaster risk is about addressing basic development that helps build “accumulated resilience” and preparing for and mitigating disasters. It also entails ensuring adequate governance – that is, transparent, accountable and representative decision-making structures – so that everyone’s needs and voices are considered and development gains benefit all. Thus, connecting DRR with broader development processes contributes to advance a people-centred risk reduction approach”

(after UNDRR, 2019)