Trade and Natural Disaster Response

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Natural Disaster Threats in the Caribbean

• Hurricanes and Tropical Storms
• Earthquakes
• Volcanoes
• Tsunamis
• Floods
# Major Hurricanes and Storms Impacting Eastern Caribbean

<table>
<thead>
<tr>
<th>NAME</th>
<th>YEAR</th>
<th>CATEGORY</th>
<th>OECS ISLANDS AFFECTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1979</td>
<td>David</td>
<td>Hurricane</td>
<td>Dominica</td>
</tr>
<tr>
<td>1980</td>
<td>Allen</td>
<td>Hurricane</td>
<td>St Lucia</td>
</tr>
<tr>
<td>2004</td>
<td>Ivan</td>
<td>Hurricane</td>
<td>Grenada</td>
</tr>
<tr>
<td>2005</td>
<td>Emily</td>
<td>Hurricane</td>
<td>Grenada</td>
</tr>
<tr>
<td>2007</td>
<td>Dean</td>
<td>Hurricane</td>
<td>Dominica, St Lucia</td>
</tr>
<tr>
<td>2010</td>
<td>Tomas</td>
<td>Tropical Storm</td>
<td>St. Lucia</td>
</tr>
<tr>
<td>2010</td>
<td>Earl</td>
<td>Hurricane</td>
<td>Antigua and Barbuda, St Kitts and Nevis</td>
</tr>
<tr>
<td>2015</td>
<td>Erica</td>
<td>Tropical Storm</td>
<td>Dominica</td>
</tr>
<tr>
<td>2017</td>
<td>Irma</td>
<td>Hurricane</td>
<td>Antigua and Barbuda</td>
</tr>
<tr>
<td>2017</td>
<td>Maria</td>
<td>Hurricane</td>
<td>Dominica, Antigua and Barbuda</td>
</tr>
</tbody>
</table>
HURRICANE MARIA

• The worst natural disaster on record for Dominica;
• The 10th most intense Atlantic hurricane on record;
• The most intense tropical cyclone of 2017;
• One of the most rapidly intensifying storms in recent history;
  • Tropical depression on September 16, 12:00 UTC – 1,070 km east of Barbados;
  • Tropical storm on September 16, 18:00 UTC
  • Hurricane status on September 17
  • Doubling of winds from 85 mph/140kmh (category 1) to 165 mph/270kmh (category 5) in just 24 hours – 15 miles/25km east-southeast of Dominica on late September 18
Hurricane Maria - Development Summary

<table>
<thead>
<tr>
<th>Public Advisory #</th>
<th>Date</th>
<th>Local Time (AST)</th>
<th>Elapsed Time (Hours as Hurricane)</th>
<th>Hours Before Landfall</th>
<th>Category</th>
<th>Max Sustained Wind Speed (mph)</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Sept. 17, 2017</td>
<td>17:00</td>
<td>0</td>
<td>28</td>
<td>1</td>
<td>75</td>
<td>Upgraded from Tropical Storm</td>
</tr>
<tr>
<td>7</td>
<td>Sept. 18, 2017</td>
<td>23:00</td>
<td>6</td>
<td>22</td>
<td>1</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Sept. 17, 2017</td>
<td>11:00</td>
<td>18</td>
<td>10</td>
<td>3</td>
<td>120</td>
<td>Upgraded from Category 1</td>
</tr>
<tr>
<td>9A</td>
<td>Sept. 17, 2017</td>
<td>14:00</td>
<td>21</td>
<td>7</td>
<td>3</td>
<td>125</td>
<td>Expected to become major hurricane</td>
</tr>
<tr>
<td>10</td>
<td>Sept. 17, 2017</td>
<td>17:00</td>
<td>24</td>
<td>4</td>
<td>4</td>
<td>130</td>
<td>Upgraded from Category 3</td>
</tr>
<tr>
<td>10 Update</td>
<td>Sept. 17, 2017</td>
<td>19:45</td>
<td>26:45</td>
<td>1:15</td>
<td>5</td>
<td>160</td>
<td>Upgraded from Category 4 (source Aircraft reconnaissance)</td>
</tr>
<tr>
<td>Landfall Dominica</td>
<td>Sept. 17, 2017</td>
<td>21:00</td>
<td>28</td>
<td>Landfall</td>
<td>5</td>
<td>160+</td>
<td></td>
</tr>
</tbody>
</table>

Source: Post Disaster Needs Assessment - Hurricane Maria
Hurricane Maria – Storm Track History

Source: Post Disaster Needs Assessment - Hurricane Maria September 18, 2017 - A Report by the Government of Dominica
Hurricane Maria - Landfall

• Made landfall in Dominica at 21:15 Atlantic Standard Time on September 18 with maximum sustained winds of 165 mph (270 km/h)
• First Category 5 hurricane on record to strike Dominica;
• Direct hit over the center of the island;
  • Intense and heavy rainfall
  • Extraordinary winds
  • Severe flashfloods and landslides
  • Damage to roof of almost every home;
  • Swept buildings and property; clogged roads with vegetative and structural remnants, debris and mud;
  • Destruction of communication services

Source: Post Disaster Needs Assessment - Hurricane Maria September 18, 2017 - A Report by the Government of Dominica
Hurricane Maria – Impact on Dominica

• The Post-Disaster Needs Assessment concluded that Hurricane Maria resulted in:
  • total damages of EC$2.51 billion (US$931 million);
  • losses of EC$1.03 billion (US$382 million);
  • which amounts to 226 percent of 2016 gross domestic product (GDP).

• The identified recovery needs for reconstruction and resilience interventions, incorporating the principle of ‘building back better’ (BBB) where possible, amount to EC$3.69 billion (US$1.37 billion).

Source: Post Disaster Needs Assessment - Hurricane Maria
September 18, 2017 - A Report by the Government of Dominica
### Summary of damage and loss by sector (in millions (M))

<table>
<thead>
<tr>
<th>Sector</th>
<th>DAMAGES (M)</th>
<th>LOSSES (M)</th>
<th>NEEDS (M)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>US$</td>
<td>EC$</td>
<td>US$</td>
</tr>
<tr>
<td><strong>PRODUCTIVE SECTOR</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>177.95</td>
<td>480.47</td>
<td>202.49</td>
</tr>
<tr>
<td>Fisheries</td>
<td>55.27</td>
<td>149.23</td>
<td>124.37</td>
</tr>
<tr>
<td>Forestry</td>
<td>2.41</td>
<td>6.52</td>
<td>0.50</td>
</tr>
<tr>
<td></td>
<td>29.72</td>
<td>80.24</td>
<td></td>
</tr>
<tr>
<td>Commerce and Micro Business</td>
<td>70.40</td>
<td>190.08</td>
<td>6.85</td>
</tr>
<tr>
<td>Tourism</td>
<td>20.15</td>
<td>54.40</td>
<td>70.77</td>
</tr>
<tr>
<td><strong>SOCIAL SECTOR</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing</td>
<td>353.96</td>
<td>955.70</td>
<td>28.50</td>
</tr>
<tr>
<td>Education</td>
<td>73.98</td>
<td>199.74</td>
<td>3.21</td>
</tr>
<tr>
<td>Health</td>
<td>10.90</td>
<td>29.50</td>
<td>6.95</td>
</tr>
<tr>
<td>Culture</td>
<td>5.07</td>
<td>13.68</td>
<td>2.91</td>
</tr>
<tr>
<td><strong>INFRASTRUCTURE SECTOR</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport</td>
<td>182.15</td>
<td>491.82</td>
<td>52.62</td>
</tr>
<tr>
<td>Electricity</td>
<td>33.18</td>
<td>89.59</td>
<td>32.94</td>
</tr>
<tr>
<td>Water and Sanitation</td>
<td>24.00</td>
<td>64.79</td>
<td>39.73</td>
</tr>
<tr>
<td>Telecommunication</td>
<td>47.74</td>
<td>128.88</td>
<td>8.31</td>
</tr>
<tr>
<td>Airports and Port</td>
<td>18.89</td>
<td>51.00</td>
<td>3.26</td>
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<tr>
<td><strong>CROSS-CUTTING</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Disaster Risk Management</td>
<td>3.00</td>
<td>8.11</td>
<td>0.80</td>
</tr>
<tr>
<td>Environment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>931</td>
<td>2513</td>
<td>380</td>
</tr>
</tbody>
</table>

Source: Post Disaster Needs Assessment - Hurricane Maria
September 18, 2017 - A Report by the Government of Dominica
Hurricane Maria – Impact

• Human and Social Impact
  • A total of EC$94.9 million in income
  • a 25 percent reduction in overall consumption
  • an increase in the poverty head count from 28.8 percent to 42.8 percent
  • Approximately EC$22.11 million (US$8.19 million) is needed to finance a
    recovery for social protection to address these poverty impacts

• Macroeconomic Impact
  • It is estimated that output would decline sharply in the last quarter of 2017
    and by as much as 16 percent in 2018
  • The external current account balance could deteriorate sharply, to a deficit of
    21 percent of GDP in 2018

Source: Post Disaster Needs Assessment - Hurricane Maria
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Hurricane Maria - Impact

• Sector Summaries
  • AGRICULTURE
    • Damage and losses: EC$ 485M (US$ 179.6M)
    • Recovery Needs: EC$ 238.83 (US$ 88.46M)
  • FORESTRY
    • Damage and losses: EC$ 80.24M (US$ 29.72M)
    • Recovery Needs: EC$ 40.15M (US$ 14.87M)
  • TOURISM
    • Damage and losses: EC$ 245M (US$ 116.66)
    • Recovery Needs: EC$ 70.72M (US$ 20.1M)

Source: Post Disaster Needs Assessment - Hurricane Maria
September 18, 2017 - A Report by the Government of Dominica
Hurricane Maria - Impact

• COMMERCE/MICRO-BUSINESS
  • Damage and losses: EC$ 208.4M (US$ 77.18M)
  • Recovery Needs: EC$ 197M (US$ 72.96)

• EDUCATION
  • Damage and losses: EC$ 208.4M (US$ 77.19M)
  • Recovery Needs: EC$ 254.33M (US$ 94.20M)

• HOUSING
  • Damage and losses: EC$ 1,032,64M (US$ 382.46M)
  • Recovery Needs: EC$ 1,403.34M (US$ 519.75M)

• HEALTH
  • Damage and losses: EC$ 48.3M (US$ 17.85M)
  • Recovery Needs: EC$ 59.75M (US$ 22.14M)

Source: Post Disaster Needs Assessment - Hurricane Maria
September 18, 2017 - A Report by the Government of Dominica
Hurricane Maria - Impact

• TRANSPORT
  • Damage and losses: EC$ 633.91M (US$ 234.77M)
  • Recovery Needs: EC$ 815M (US$ 302M)

• WATER AND SANITATION
  • Damage and losses: EC$ 172.06M (US$ 63.73M)
  • Recovery Needs: EC$ 151.9M (US$ 56.26M)

• ELECTRICITY
  • Damage and losses: EC$ 178.53M (US$ 66.12M)
  • Recovery Needs: EC$ 217.84M (US$ 80.68M)

• TELECOMMUNICATIONS
  • Damage and losses: EC$ 151.31M (US$ 56.05M)
  • Recovery Needs: EC$ 129.17M (US$ 47.84M)

Source: Post Disaster Needs Assessment - Hurricane Maria September 18, 2017 - A Report by the Government of Dominica
Hurricane Maria – National Response

• Long term goal in the aftermath of Hurricane Maria is to make Dominica the first climate change resilient nation in the world.

• A three pronged response plan;
  • Relief
    • With support from many governments, regional and international organizations and agencies to provide food, water and shelter and other basic needs
  • Early Recovery
    • Restoration of water, electricity, telecommunications and ports
    • Clearing and rehabilitation of roads, rebuilding of bridges,
    • Stimulating domestic demand and the economy through tax and duty exemptions on food and construction material
    • Agriculture rehabilitation through grants and support
    • Job creation
Hurricane Maria – National Response

• **Building a resilient nation**
  • Executing a substantial climate change resilient building programme
    • Developing a National Climate Resilience And Recovery Plan
    • Developing sector plans
  • Creation of a Climate Resilience Execution Agency for Dominica (CREAD)
  • Rebuilding better
    • New construction codes
    • Investment in new climate resilient systems to ensure food security, energy security and ICT security
    • Identification and use of international best practice approaches for the construction of climate-resilient, energy-efficient affordable houses.
What Role for Trade, the Multilateral Trading System and the WTO

• OECS MC11 textual proposal for political language in outcome document:
  • We note the destruction and loss of critical infrastructure and capacities at all levels caused during this year's unprecedented hurricane season, particularly to the Small Island Developing States and SVE’s of the Caribbean and acknowledge that reconstruction and recovery and redevelopment will take many years. During this time WTO rules and disciplines must not stand in the way of reconstruction and we agree that the full flexibility of the multilateral trading system should be deployed so that reconstruction measures taken by the affected Members will be considered compatible with the WTO Agreements."
What Role for Trade, the Multilateral Trading System and the WTO

• Declaration of Ministers of the Group of Small, Vulnerable Economies (SVEs) to the Eleventh Session of the World Trade Organization Ministerial Conference:

  • **Note** the destruction caused during this year's unprecedented hurricane season, particularly to SVEs, and acknowledge that recovery and redevelopment will take many years.
  • **Call** on the full flexibility of the multilateral trading system to be deployed regarding the reconstruction measures that may be taken by the affected Members, so that these be considered compatible with the WTO Agreements without altering the rights and obligations of WTO Members.
What Role for Trade, the Multilateral Trading System and the WTO

• Need for research and study of the nexus between trade and natural disasters;

• There are existing provisions in the WTO Agreements that can be used: how could they be made to work better?

• What additional flexibilities and special and differential treatment could be provided regarding compliance with certain commitments and rules?

• How can aid and support be further facilitated by various rules existing in the WTO?

• How can rehabilitation of productive sectors and export trade be facilitated by market access?
THANK YOU