



Disaster Profile – January 2018

DOMINICA

The Impact of Hurricane Maria

Overview

Hurricane Maria made landfall on the southwest coast of Dominica at 9:35pm on 18 September as a Category 5 hurricane, with 160 mph wind speed and higher gusts. The hurricane force resulted in intense storm surges, torrential downpour, overflowing raging rivers, and extremely high winds across the island left 31 people dead, 37 missing. 65,000 people, around 80% of the population, were directly affected and more than 90% of roofs were damaged or destroyed while power and water supplies were disrupted, and entire crops destroyed

Of the estimated USD 930.9 million damages most were sustained in the housing sector (38%), followed by transport (20%) and education (8%). The greatest of the USD 380.2 million losses were sustained in the agriculture sector (32%), followed by tourism (19%) and transport (14%) (UN 16/11/2017, 18/10/2017, OCHA 26/09/2017). Overall, damages and losses are estimated at around USD 1.3 billion, equating to 224% of Dominica's 2016 GDP (PDNA 2017).

Four months after the hurricane, although the situation is normalising, Dominica remains seriously impacted. Around 450 people still reside in collective shelters. Over 80% of houses still have inadequate roofing, about 15% children have not yet returned to school, 90% of the population does not have electricity, and a sizeable portion of the population is highly vulnerable after losing their main source of livelihood (OCHA 20/12/2017).

Key priorities

Sector	Needs
WASH	<ul style="list-style-type: none"> Large-scale rehabilitation for damaged water and sanitation systems Water trucking Wastewater treatment specialists
Shelter	<ul style="list-style-type: none"> Temporary shelter solutions for people whose houses were severely damaged or who still live in collective shelters, or those who were homeless before Long-term shelter solutions
Early Recovery	<ul style="list-style-type: none"> Assistance with debris removal and waste management Cash support Restoration of livelihoods
Education	<ul style="list-style-type: none"> Education supplies (e.g., furniture, textbooks)
Food Security	<ul style="list-style-type: none"> Rehabilitation of agricultural areas Replanting New cooling systems for fisheries
Health	<ul style="list-style-type: none"> Primary healthcare doctors and nurses Mental health specialists
Protection	<ul style="list-style-type: none"> Psychosocial support for children, teachers, and caregivers Child friendly spaces
Infrastructure	<ul style="list-style-type: none"> Rehabilitation of electricity network and telecommunications equipment

This report presents the available secondary data on the impact of Hurricane Maria as well as the current situation in Dominica four months after landfall. For all ACAPS products on Hurricanes Irma and Maria, please [click here](#).

2018 Hurricane season forecast

Atlantic hurricane activity in 2018 is predicted to be slightly above normal. However, the uncertainties associated with this outlook are large and the forecast skill at this extended range is historically low (Tropical Storm Risk 07/12/2017). The official hurricane season forecast from the National Oceanic and Atmospheric Administration (NOAA) will be released in late May.

Impact by Sector

WATER AND SANITATION

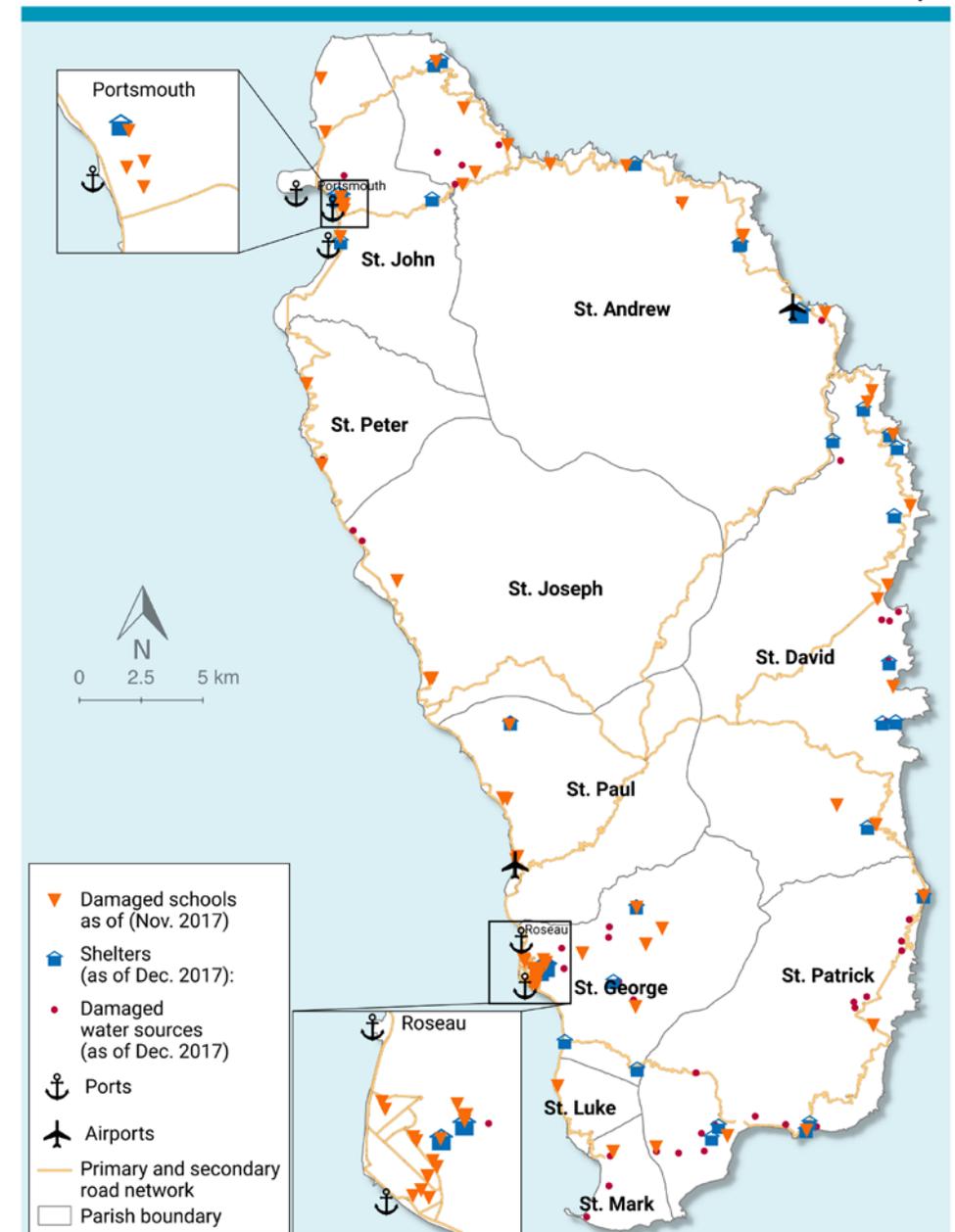
Current situation: Water is one of the most important reported unmet needs (Ground Truth 15/12/2017); As of January 2017, 9 of the 43 water network systems remain completely non-operational. 8,800 people are still receiving water from water trucking services due to non-functioning water systems mostly in peri-urban and rural areas, and to ensure the availability of water at collective centres, schools, and health facilities (OCHA 20/12/2017; WASH Sector). Water trucking is planned to continue until mid-February when the water systems will be repaired and functioning again. Bellevue Chopin and Pichelin, in the west, Scotts Head, in the southwest, Paix Bouche in the north and, Grand Bay in the south remain areas of concern due to their WASH needs. People in some collective centres have faced issues with access to safe drinking water, have no segregated bathrooms and need hygiene kits (IOM DTM Round 3 01/12/2017).

Disaster impact: After the hurricane, production and distribution pipelines were damaged or washed away; intake systems were blocked with sand; and debris, storage tanks, pumps, physical structures and access roads were damaged (PDNA 2017). 43 out of 44 water systems were non-functional (OCHA 20/12/2017; WASH Sector).

The disruption of water and sanitation services impacted on livelihoods by disrupting production, manufacturing, and tourism activities. Limited access to water supply changed habits and consumption patterns among the affected population (PDNA 2017). This change in practice is not ideal and should be a temporary solution until water is restored. Extensive rehabilitation is required to repair the damage and to increase future resilience (OCHA 19/10/2017; OCHA 26/10/2017). In some instances, rehabilitation of these systems were made using provisional solutions which in many cases resulted in feeble or disrupted service.

Damage to the Roseau wastewater treatment plant directly affected 5,190 households and included lift stations, fore mains, manholes, interceptor pipes, sewer lines, three major bridge crossings, gravity mains and about 3,000 service connections. The

DOMINICA: IMPACT OF HURRICANE MARIA



Date created: 23/01/2018
Source(s): IOM DTM 3, DOWASCO, WASH Sector (Dec. 2017), Education Sector (Nov. 2017)

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www.acaps.org

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Canefield and Jimmit sewage systems were blocked by flood debris. On-site septic tank systems and latrines were damaged (PDNA 2017).

In solid waste management, the already inadequate infrastructure suffered further damage and the service was interrupted. Two collection trucks were damaged, and many private contractors stopped collecting waste. Irregular service has been established in Roseau but damage to road infrastructure, reduced capacity in the Dominica Solid Waste Management Corporation (DSWMC) and lack of available private contractors is restricting the recovery of services countrywide (PDNA 2017). DSWMC's administrative facilities, roof of its office building, and disposal site were severely damaged. The burning of uncollected solid waste presented a health threat. The large volume of solid waste combined with very poor drainage systems contribute to an increased risk of vector-borne diseases (PDNA 2017).

SHELTER

Current situation: Around 460 people (120 households) are still residing in 30 shelters across the country in December 2017. Over 80% of houses still have inadequate roofing (IOM DTM Round 3 01/12/2017).

Disaster impact: A reported 90% of structures on the island were damaged: approximately 62% of houses were heavily damaged, out of which 15% were completely destroyed, making up more than 16,000 houses in total (OCHA 20/10/2017; IOM DTM 19/10/2017; OCHA 26/10/2017; Humanity road 20/09/2017). The most affected parishes in terms of percentage of damage were St. Peter, St. Andrew, and St. David, located in the east of the country (UNOSAT 18/10/2017). 90% of the Kalinago community, who are among the country's most vulnerable people, had their houses destroyed (UNICEF 08/10/2017).

All available public buildings were used as shelters (IPS 20/09/2017). Many buildings serving as shelters lost roofs, so tarpaulins and other roofing materials were a very urgent need (Humanity Road 20/09/2017).

A least 3,000 people were estimated to have taken refuge in 108 pre-identified evacuation shelters – most of them schools - across the country prior to and during the hurricane. Most (67% in early November) of those residing in evacuation shelters reported their home to have been completely destroyed. In late November, the provision of sectoral services was found to vary between collective centres and 21% of residents reported the dire living conditions to be their priority issue. Almost all (87% in November) of those residing in evacuation shelters desired to return to their area of origin although they were relying on the government and the humanitarian community to help them rebuild or repair their homes (IOM 17/10/2017; IOM 10/10/2017; IOM DTM Round 3 01/12/2017; IOM 05/11/2017).

DISPLACEMENT

Disaster impact: As of 5 December, 35% of households were displaced and living with friends and family, in collective or alternative shelters, according to a Vulnerability and Needs Assessment (OCHA 20/12/2017).

After the hurricane, around 3,000 people were living in 108 collective shelters in Dominica (UNICEF 18/10/2017; IOM DTM 19/10/2017).

At end of October, 17,000 people were estimated to have left the country immediately after the hurricane (PDNA 2017). This number has not been confirmed. Many of the people who left are children and people aged 17–49. This movement is particularly concerning for the 3,000-strong Kalinago community, whose viability is at stake. Many families with children might permanently move or stay abroad, following a pre-storm pattern of Kalinagos leaving Dominica for better opportunities elsewhere (IRIN 16/10/2017; UNICEF 08/10/2017). A plan to better support returns or find alternative solutions for people sheltering in collective centres inside schools was required (OCHA 19/10/2017).

INFRASTRUCTURE

Current situation: As of 17 January 2018, 90% of the population does not have electricity as electricity has been restored mainly those living in the cities of Roseau and Portsmouth (UNICEF 17/01/2018). Main roads throughout the island have been cleared and most have been repaired. The Cruise ship port has been repaired and the first cruise ship arrived in Dominica in the last week of January.

Disaster impact:

Electricity: Damage to transformers and electrical generation sites supply caused at least 75% of the network to go down. 80-90% of inspected transformers were damaged beyond repair and damage to generation sites varied from moderate to severe. At Fond Cole, buildings and three generation units were damaged, and enclosures were lost. Sugar Loaf suffered some building as well as equipment damage. Trafalgar experienced only minor damage to the building structure, while Laudat remained intact (PDNA 2017). Electricity was restored in parts of Roseau within four to six weeks of the hurricane, although many areas still rely on generators. The Dominica Electrical Services Company (DOMLEC) repaired electrical lines, prioritising public infrastructure and commercial businesses before residential areas. Burning debris in the vicinity of electrical poles has hindered the repair of lines (OCHA 14/10/2017).

Fuel: Diesel-storage and diesel-importing facilities did not suffer any damage; therefore, fuel supply is proceeding smoothly (PDNA 2017).

Roads and bridges: Roads were covered by substantial amounts of debris, and a number of landslides or embankment failures occurred. At river crossings, strong flash flooding carried substantial boulder debris and high-water flows filled floodplains. In valleys and steep gullies, especially in the south and west, some structures were blocked and covered by 1–2m of floodwater, and debris deposits of 1–4m depth filled the riverbeds, forcing rivers to change course and cause erosion. Road surfaces, especially on improved roads with lined surface drainage, were generally undamaged, but more extensive damage occurred on the less improved road networks. At least six of the island's bridges were severely damaged (PDNA 2017).

Ports and ferry terminals: At the port of Woodridge Bay, all sheds lost their roofs. The security fencing was compromised; windows in the main office building were blown out, the maintenance shed destroyed, and electrical equipment and electronics damaged. In Roseau, the ferry terminal was severely damaged: all electronic equipment, furniture, and vendor shops were affected. There was a 1-2m layer of debris as a result of the flooding. In Portsmouth, the cargo shed had similar damage, although the main pier remained intact. The Cabrits cruise ship berth was badly damaged, with the pier walkway destroyed, and the terminal building lost most of its roof (PDNA 2017).



that humanitarian assistance was their only source of food (PDNA 2017). Households whose livelihoods were affected by the hurricane had difficulty coping with the loss of income needed to cover food and other basic needs.

The hurricane severely damaged farm housing, irrigation infrastructure, feeder roads, livestock production, forest reserves, and fishing boats. Self-sufficiency has been a priority to speed up the recovery process: the country currently depends on shipments of food relief from regional and international stakeholders. Fast-growing food crops were identified as the priority, including seeds for tomatoes, eggplants, pumpkins, sweet pepper, spinach, lettuce, cabbage, and kale. Four major sites were identified as strategic areas for replanting interventions: Roseau, the Northeast, the Southeast and Portsmouth, with the Portsmouth community, located in the north of the island, being particularly important as it provides the hospital food supply (FAO 25/10/2017; OECS 13/10/2017).

In October, major supermarkets and some small shops re-established operations in urban centres while in rural areas, most shops remained closed or faced shortages. Larger to medium importers faced short-term pipeline breaks of certain staple foods (OCHA 14/10/2017). Wholesalers experienced an average reduction of 50% in their trade volumes. After the hurricane, retailers had limited or no stocks of tubers, vegetables, fruits, flour, rice, and chicken (PDNA 2017). Collective centres were in need of cooking gas, particularly for those who faced prolonged displacement as due to the destruction of their homes (OCHA 19/10/2017).

LIVELIHOODS

Current situation: Restoration of livelihoods is an urgent need as people are returning home. Access to agricultural fields, and the clearing of debris and destroyed crops remained a problem in rural areas when it rains (OCHA 19/10/2017; IRIN 16/10/2017; PDNA 2017).

Disaster impact: Livelihoods were severely impacted (OCHA 19/10/2017; IRIN 16/10/2017; PDNA 2017). Large, country-wide losses included cattle (45% lost), pigs (65%), small ruminants (50%), broiler chickens (90%), layers (90%), rabbits (50%), and beehives (25%). The lack of feed, shelter and water resulted in increased losses every day (OCHA 26/10/2017; PDNA 2017). An estimated 65% of coconut trees, 80% of cocoa trees and 80% of citrus trees were damaged (PDNA 2017).

Farming families in Kalinago were among the worst affected, as they are primarily subsistence farmers who also depend on the sale of crafts to tourists – both sectors have been severely impacted. People living in collective shelters reported a lack of livelihoods.

EDUCATION

Current Situation: Even though schools have been reopened, attendance in December was only at 68%, possibly highlighting the impact of outward migration in the aftermath of the hurricane. School enrolment figures in Antigua and Barbuda, Anguilla and Turks and Caicos Islands have reached or surpassed pre-hurricane levels, reflecting some movement between the islands, especially from Dominica (UNICEF 19/12/2017). Attendance in January has reportedly increased,

Disaster impact: All primary schools were closed until 18 October (OCHA 09/11/2017) and in certain shelters children had not been enrolled in education activities two months after the hurricane (UNICEF 22/11/2017). As of 13 December 2017, 94% of public-owned or funded schools have reopened. However, students do not have full access to the facilities in any of them. 26% of schools need repairs in the water facilities, 73% need support with repairing sanitation facilities, and 92% of the schools need education material (UNICEF 19/12/2017; IsraAid education assessment). The destruction of houses and displacement of families had a severe negative impact on the learning environment at home (PDNA 2017).

As of 13 December, nine schools in Dominica were still being used as shelters (UNICEF 01/12/2017). School leaders, teachers, and students coped with the disruption in a variety of ways, including resuming classes in temporary structures and, for some students, travelling to neighbouring islands to continue their education.

EMERGENCY COMMUNICATIONS

Current situation: Limited telecommunications coverage on the east coast continues to hamper communications and causes gaps for humanitarian responders. A lack of consistent access to electricity and power in the country is making the provision of Internet connectivity challenging (ETC 14/01/2018). As of 19 December, in the Kalinago territory the mobile network was still unstable. In Saint-Sauveur, a village in St. David parish, an area difficult to access because of rugged mountain terrain, only calls are available at this time. Topography has historically made access to mobile networks difficult also in Mero village, in St. Joseph parish (TSF 19/12/2017).

As of December, media outlets have still not fully recovered. Two towers of the island’s public broadcaster, Dominica Broadcasting Cooperation (DBS) are not operational, leaving areas of the island with limited radio signal.

Disaster impact: The interruption of telecommunication services after the Hurricane had a significant negative human impact. Dominica was almost cut off from the outside world for three days, and communities within Dominica were isolated from one another. Information for critical relief and rescue activities was delivered via a few satellite phones and a sparse amateur radio network. Only five of 15 mobile phone masts survived the hurricane. Digicel and Flow, the major network operators, have now restored services in several areas (ETC 29/10/2017; PDNA 2017).

HEALTH

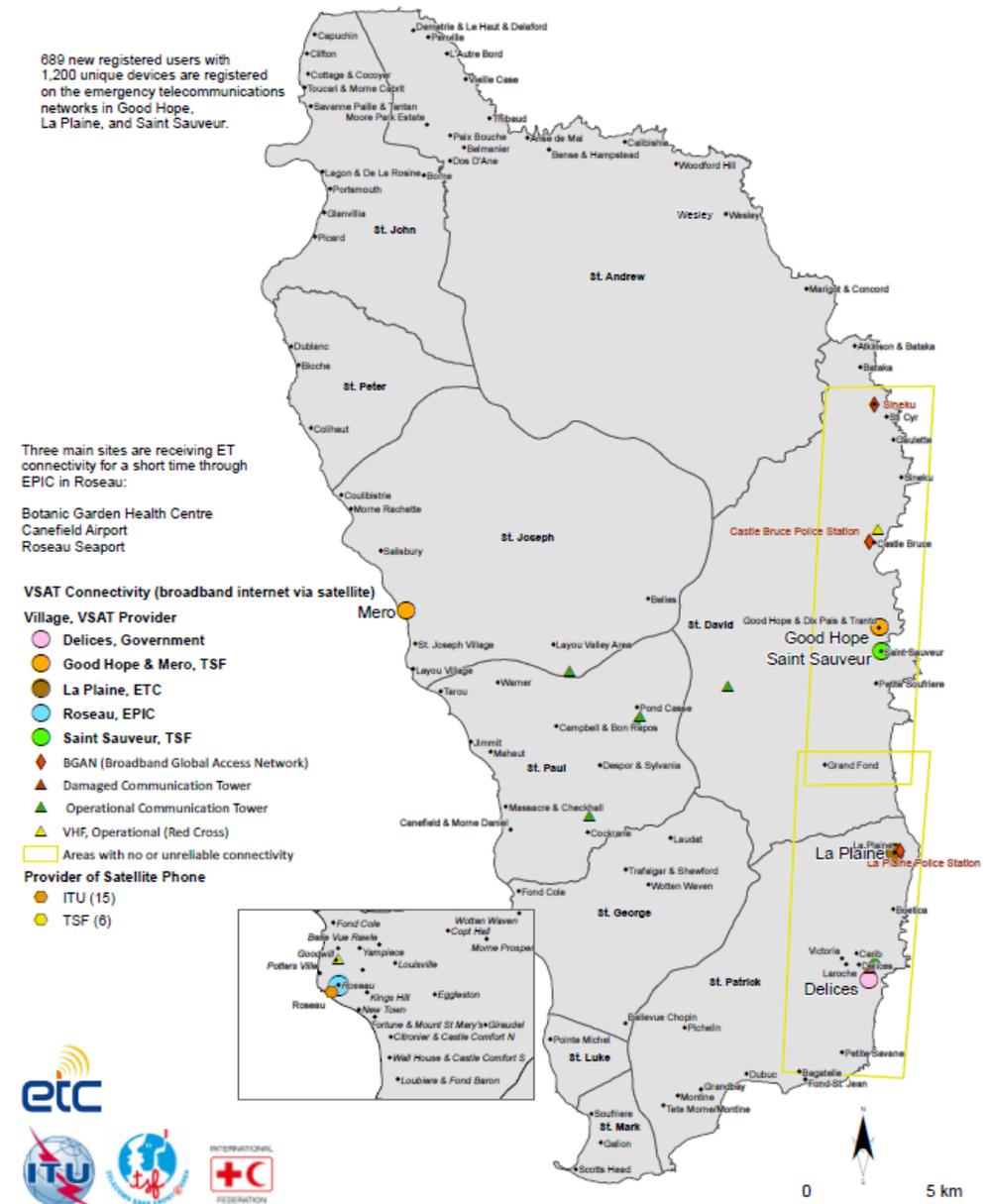
Current situation: No recent information is available.

Disaster impact: The Princess Margaret Hospital in Roseau sustained severe damage with 15% of its buildings destroyed and 32% partially damaged; 53% remained functional. Moderate or severe damage to more than half of all health centres was exacerbated by the disruption of access, electricity, water and waste management. All health workers were personally impacted by the hurricane. Initial support came from outside and critical patients were evacuated. Central Medical Stores lost the majority of medical supplies due to water damage, but most medications were spared. Fluoroscopy, portable x-ray, and all blood bank equipment were lost (PDNA 2017).

Five weeks post-hurricane, no elective surgery was being done and services had shrunk. Primary healthcare services continue to be offered in buildings that have received only emergency repairs, or in alternate premises. Short-term recovery needs include restoration of services to health facilities, damage repair, replacement of equipment, and identification of temporary facilities for use during reconstruction (PDNA 2017).

Several signals of post-trauma were observed in children, families and among teachers in the school communities (PDNA 2017). Women and men interviewed indicate a reported

DOMINICA: EMERGENCY TELECOM RESTORATION (as of 13 December 2017)



Creation date: 13 December 2017
 Source(s): Telecom, Dominica ETC Sector | Map date: HDX
 Visit: <https://www.humanitarianresponse.info/en/operations/dominica>

OCHA encourages partners to share information at the UN coordination center in Roseau, ETC Sector. The boundaries and names shown on this map do not imply official endorsement or acceptance by the United Nations. As operations are still ongoing, information presented is not conclusive and may have changed by the time this document was printed.

increase in mental health needs and psychosocial need, especially for men and boys, who reportedly have not been employing healthy coping techniques. There has been an increase in drug and alcohol usage, which reflects much of the experience during the aftermath of Tropical Storm Erika (PDNA 2017).

PROTECTION

Women head 39% of households in Dominica. Many women, particularly older heads of households, did not have home insurance because they were living in family homes built by their parents. These women indicated they were unable to move out of the collective shelters because they did not have access to housing material or knowledge of where to source the material. Their main concern was being able to pay for the labour needed to assist them in rebuilding (PDNA 2017)

There were no reports of GBV (PDNA 2017).

Older people make up the majority of persons still in shelters (PDNA 2017)

The emergency revealed weaknesses in the national social protection systems, which prompted some agencies to push for more cash transfer programmes (UNICEF 22/11/2017).

Response capacity

The humanitarian response was led by the Dominica government with the support of the Caribbean Disaster Emergency Management Agency (CDEMA), the regional coordination mechanism, as well as the humanitarian community and UN agencies.

NATIONAL RESPONSE CAPACITY

The government of Dominica set up an Emergency Operation Centre (EOC), which carried out weekly meetings with national response committees and international organisations.

In December, the Ministry of Planning took over inter-sector coordination from the National Emergency Operations Centre and used the Early Recovery Working Group as the platform for inter-sector early recovery coordination. The Early Recovery Working Group is led by the Permanent Secretary for Planning with support from UNDP as the co-lead. Thus, activities undertaken under this sector - Emergency Livelihoods with the National Employment Programme and a comprehensive Building Damage Assessment, a roofing programme and capacity building for meeting the building standards – were coordinated and reported on in the framework of the Food Security & Livelihoods and the Shelter sectors respectively (OCHA 20/12/2017).

Humanitarian organisations transitioned from relief to recovery-oriented activities in December and coordination mechanisms reflected the shift: a growing number of ministries and partners began to take part in sector coordination mechanisms, which was conducive to more comprehensive and complementary action plans. The Ministry of Planning took over multi-sector coordination from the Emergency Operations Centre (OCHA 20/12/2017).

Import duties and VAT were lifted for six months on commercial and non-commercial food items and specific construction materials; and in-kind grants of roofing materials to assist residents to rebuild their homes. Environmental and custom duties remained in place. To help finance home rehabilitation, the government announced voluntary advances on government salaries and on non-contributory pension payments from the Social Security Fund. The government established a consumer protection agency aimed at preventing price gouging by wholesalers and retailers (PDNA 2017; OCHA 19/10/2017).

Banks and credit unions resumed services within a month after the hurricane to enable transactions, and plan to minimise the storm's impact on banks' credit portfolios. The National Bank of Dominica (NBD) announced a three-month loan moratorium, which would relieve financing constraints during a transition. Substantial private insurance payout is expected to facilitate the repair and reconstruction of private housing and structures, tempering the risk of an increase in non-performing loans (NPLs) in the bank's mortgage portfolios (PDNA 2017).

REGIONAL RESPONSE CAPACITY

CDEMA supported the government of Dominica with coordination efforts and relief tracking.

Additionally, Defence Forces from Bahamas, Jamaica, and Trinidad and Tobago supported the government of Dominica with logistics, medical and water assistance, roof repairs and security at the seaport and airports in Roseau (UN 16/11/2017).

INTERNATIONAL PRESENCE

At the peak of the response, there were eight UN agencies, 17 NGOs, and the IFRC in Dominica providing humanitarian assistance (UN 16/11/2017).

There was no permanent presence of UN agencies or INGOs on Dominica, even though they have participated in previous hurricane responses, usually under the leadership of the Red Cross. The Dominica Red Cross Society has been active since 1983.

Upon request from the Government, a senior UNDP staff member arrived on 3 October to lead the UN-wide Crisis Management Unit, also composed of other UNDP and OCHA personnel (UNDP 04/10/2017).

JOINT EMERGENCY CASH TRANSFER

In response to the hurricane, UNICEF and WFP partnered with the government of Dominica through the Ministry of Social Services, Family and Gender Affairs-Welfare Division to carry out a Joint Emergency Cash Transfer (JECT) for the most vulnerable households and their children, using as its basis the government's Public Assistance Programme (PAP). Under the leadership of the government, WFP and UNICEF developed a joint targeting methodology, using the same payment mechanisms that the Public Assistance Programme has been using in the past.

The JECT includes:

- Unconditional cash-based transfers to identified households for three months;
- Cash top-up to carers of children for three months;
- Technical assistance and accompaniment to the Social Welfare Division
- Monitoring and verification of the process and use of emergency cash transfer.

The JECT has resulted in unrestricted household cash grant of USD 90 for 8,300 households for three months and a top-up to the household cash grant to families with children for USD 50 per child for three months (up to 6,000 children).

CONSTRAINTS ON RESPONSE AND RECOVERY

- Heavy rains continue to cause flash floods for weeks highlighting the urgent need for debris and solid waste management and more extensive repairs of water and sewage systems (OCHA 19/10/2017; OCHA 26/10/2017).
- Humanitarian cargo at the main entry points in Dominica (Roseau Sea Port, Canefield Airport and Douglas-Charles/Melville Hall Airport) required 48 hours' notice to prepare handling and reception. Dispatch of humanitarian cargo from the seaport in Roseau required 24 hours' notice to enable preparation of cargo. Lack of regular commercial flights required on-going UNHAS humanitarian air service from Antigua (OCHA 26/10/2017).
- Dominica was still in the recovery phase following Tropical Storm Erika, which hit the island on 27 August 2015, killing more than 24 people, leaving nearly 600 homeless and wreaked damage totalling more than one billion dollars. Almost 2,800 individuals considered vulnerable prior to Hurricane Maria will fall below the poverty line. Dominica faces many challenges caused by repetitive disasters, making recovery a complex and difficult process. The lack of a solid institutional and coordination mechanism for recovery has further compounded this issue, leaving some past recovery processes still incomplete (PDNA 2017).

- Widespread destruction of accommodation prevented the deployment of necessary international personnel, such as external facilitators (UNICEF 17/01/2018).
- Delays were caused as agencies waited to receive results from CDEMA Needs Assessment. As the results were not properly distributed, agencies were left waiting for vital data to design and implement cash transfer programmes. Further steps need to be put in place to ensure proper collaboration mechanisms with CDEMA, as well as increase the "cash capacity" within CDEMA.
- The lack of reliable baseline data during the response greatly hampered efforts and delayed carrying out assessments and distributions properly. Many of the government offices and computers were compromised due to the hurricane, resulting in the loss of valuable data. In many instances the remaining data was incomplete or outdated.
- Difficulties in coordination sectors that include several areas of expertise, i.e. WASH actors had to ensure collaboration and coordination with two Ministries and three departments.

Hazard Profile

Dominica is vulnerable to a wide range of natural hazards. The most common and historically most significant are tropical storms and hurricanes. Other potential hazards include drought, floods, bush fires, and tsunamis (ODI 09/2001).

TROPICAL STORMS AND HURRICANES

Dominica is located in the Caribbean, one of the most disaster-prone regions in the world. Fifteen Caribbean islands are among the top 25 countries affected by tropical cyclone disasters (IMF 20/07/2016). Most of Dominica's population and infrastructure is located on the coast, making them particularly vulnerable to strong winds and high seas (ODI 09/2001). The annual hurricane season officially starts on 1 June and ends on 30 November -the period when most cyclones form in the Atlantic Basin; however, the formation of tropical cyclones is possible at any time (DOWASCO). Although hurricanes and tropical storms affect Dominica almost every year, the following are noted as requiring international humanitarian assistance for recovery:

Tropical Storm Erika (August 2015): Dominica's mountainous terrain and excessive moisture led to rainfall accumulation of up to 850mm in less than twelve hours. Grounds were saturated from previous rains, causing river basins to overflow and triggering floods that killed up to 30 people (CDEMA 30/08/2015). Accompanying mudslides dammed rivers and destroyed homes, leaving thousands displaced. The island suffered severe

infrastructural damage, primarily transportation, housing, and agriculture related, with the worst damage in the south and southeast parts of Dominica (UNDP 10/09/2015). Petite Savanne, a town in southeast of the island, was completely evacuated and eventually abandoned because of damage. The village was isolated and owing to unstable terrain the area was declared unsafe and off-limits for more than two months (The Guardian 30/08/2015) (Local news 22/10/2015). Damage and losses were estimated at USD 483 million, equivalent to 90% of Dominica's GDP (IFRC 21/01/2016). Lessons learned from Erika included the need for a better and more adequate early-warning system, strengthening disaster risk management, and investing in resilient infrastructure (UNISDR 04/09/2015); as well as better collaboration and more exchange of information between the Caribbean Institute of Meteorology and Hydrology, CDEMA, and disaster management offices (Local news 27/09/2017).

Tropical Storm Ophelia (September 2011): More than 80mm of rain fell within six hours, causing streams and ravines to overflow their banks. The communities of Canefield, Massacre, Mahaut, Cochrane, Coulibistrie and Campbell were most affected (IFRC 11/10/2011).

Hurricane David (August 1979): A category 5 hurricane, David caused heavy rainfall that led to major landslides. The most damaged areas were the southwest and the capital Roseau. 80% of homes on the island were destroyed, leaving a majority of the population displaced (NOAA 07/1980). The agricultural sector was the most affected, with 75% of the banana and coconut crops destroyed. 56 people died and 180 were injured (Local News 29/08/2003).

FLOODS

In December 2013, severe rains and high winds due to a low-level trough system caused floods and landslides on Dominica. Hundreds of people were affected, mainly in the south. Along with St. Lucia, St. Vincent and the Grenadines, Dominica activated their National Emergency Operations Centre to coordinate emergency response operations (CDEMA 03/01/2014).

VOLCANOES

Dominica is geologically young and almost completely volcanic in origin, with nine active volcanoes: Morne au Diable, Morne Trois Pitons, Morne Diablotins, Morne Watts, Morne Anglais, Wotten Waven Caldera, Valley of Desolation, Grande Soufriere Hills and Morne Plat Pays (ODI 09/2001). There have been two steam explosions in the Valley of Desolation, in 1880 and 1997. Following a volcanic alert in 1998-9, susceptibility to future volcanic activity is currently a major cause for concern. Scientists predict at least one major eruption within the next 90 years (The Dominican 17/09/2007). Volcanoes also bring related risks of earthquake.

LANDSLIDES

Dominica is extremely vulnerable to landslides and mudslides. The most common landslides are debris flows. At least 2% of the total land area has been disturbed by landslides (ODI 09/2001). Between 1925 and 2015, 35 people lost their lives due to landslides. Because landslides are triggered by storms other than hurricanes, slide clearance and road repair has a long-term cumulative economic impact (World Bank CHARIM 01/05/2016).

Information gaps and data limitations

- The lack of reliable baseline data and methodologies greatly hampered efforts and delayed carrying out assessments and distributions properly.
- Lack of information about numbers of Dominicans who fled the country after the hurricane, as well as trends of return.
- Cross-sectoral information management was very difficult as each Ministry handles their sector-specific data in different geographic zones, i.e.: Water Areas do not correspond to the Agriculture Areas, nor to Forestry Areas, etc.
- Sectors delayed undertaking assessments as the findings from the Initial Damage Assessment undertaken by CDEMA were expected. However, the assessment was not disseminated appropriately, limiting the extent to which agencies could quickly and adequately respond to the needs of the affected populations.
- Little information is shared about insurance coverage, claims, and payouts related to hurricane damage.

Lessons learned

- UN agencies, NGOs, and government employees shared the same workspace for the first four months of the response. This helped collaboration and information sharing as well as reduced communication problems and facilitated the quick resolution of issues.
- Sector-specific and cross-sector coordination meetings allowed agencies and government actors to present and update their activities, share information that reduced delays, increased collaboration between actors, and fostered joint projects and common problem solving.
- The lack of reliable baseline data greatly hampered efforts and delayed carrying out assessments and distributions properly during the response.

- Better communication and collaboration between UN agencies, actors, and CDEMA was needed, to avoid considerable delays in assessments and overlap in activities.
- Appropriate and context-specific communication mechanisms need to be tailored in order to ensure two-way communication with affected communities, taking vulnerable and at-risk communities in consideration.
- Local technical staff were over stretched and exhausted. Agencies are encouraged to build up their technical surge capacity in preparation of an emergency.

For an extended sector specific document on lessons learned from the Dominica response see [here](#).

Baseline characteristics

Indicator	Value	Year
Population number (last census)	71,293	2011
Population number (projection)	73,000	2015
Population growth rate	0.5%	2016
Population density	105/km ²	2011
Urban composition	67%	2011
Average household size	3.02	2010
Age distribution (% under 15)	21.84% under 15	2016
Life expectancy at birth (years)	77 years (male:74, female:80.1)	2016
Under-five mortality	11/1,000 live births	2013
Maternal mortality	92 per 100,000 live births	2016
HDI ranking (value)	96 (0.726)	2015
Corruption Perceptions Index ranking (value)	38 (59)	2015
People below the poverty line	29%	2015
INFORM Risk Index Ranking (value)	113 (3.00)	2017
Literacy rate	91.8% (male: 91.2%, female:92.3%)	2015
Net migration rate	-5.4 migrants/1,000 population	2016
Immunisation Coverage	96%	2013

DOMINICA : POPULATION



The boundaries and names and the designations used on this map do not imply official endorsement or acceptance by ACAPS.

