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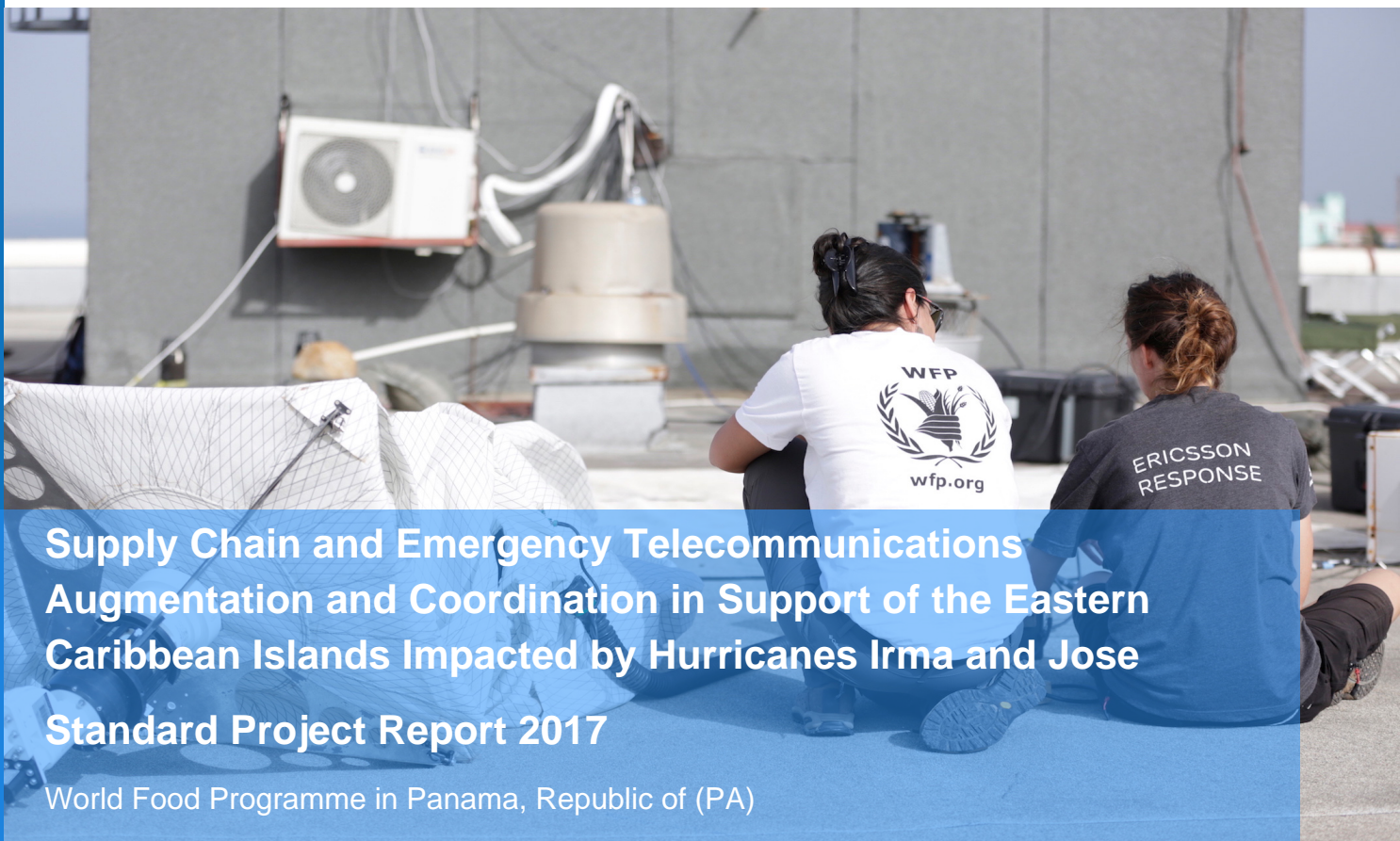
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**Further Information**

<http://www.wfp.org/countries>  
**SPR Reading Guidance**



**Supply Chain and Emergency Telecommunications  
Augmentation and Coordination in Support of the Eastern  
Caribbean Islands Impacted by Hurricanes Irma and Jose  
Standard Project Report 2017**

World Food Programme in Panama, Republic of (PA)



**World Food Programme**

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# Project Results

## Activities and Operational Partnerships

### REGIONAL CONTEXT

On 7-10 of September 2017 Hurricane Irma (a catastrophic category 5 Atlantic hurricane) and then Hurricane Jose (a catastrophic category 4 Atlantic hurricane) hit several Caribbean islands. Some islands suffered infrastructural damages close to 80 percent due to the maximum sustained wind of 285 km/h (180 mph) and torrential rain. The damage to basic infrastructures, including water and electrical infrastructures, was aggravated by extensive flooding that cut road access to the affected areas.

The disruption to the telecommunications infrastructure and services, particularly in remote rural areas, made communications difficult and impacted the safety, security and operational capability of a coordinated humanitarian response.

The magnitude of the disaster, the number of people affected, the lack of information and the geographical distance of the islands called for a coordinated and efficient response from the international community to avoid both bottlenecks and possible overlaps.

In view of the scale of the disaster, WFP rapidly augmented supply chain and emergency telecommunications capacities in the Caribbean region to ascertain if sufficient assets and staff were in place to support the humanitarian community, especially on the islands and in territories and states without WFP presence.

Funds from the United Nations Central Emergency Response Fund (CERF), and the Department for International Development of the UK (DFID) were channelled through WFP's Special Operation (SO 201106) to support the response in Dominica by making available experts and equipment to put at the disposal of the Government life-saving relief activities during the critical first months.

### ACTIVITIES

Throughout the last quarter of 2017, in this Special Operation, WFP supported in the Caribbean region the national governments of Barbados, Antigua & Barbuda, Sint Maarten, Turks & Caicos Islands (TCI), Jamaica and Dominica in their emergency response with logistics and emergency telecommunications cluster lead and with its supply chain expertise in the areas of civil, military, and logistics coordination. In addition, information management, storage and transport augmentation, aviation and shipping were used to deliver life-saving relief items, and provide access to the affected people.

Originally, the services after Hurricane Irma were foreseen to cover several further islands, such as TCI, Sint Maarten, British Virgin Islands (BVI), Antigua, and Barbuda among others. However, services were restored in many of these islands considerably fast by the private sector, which changed the scenario.

The impact of Hurricane Maria in Dominica, a week after Irma's impact, shifted the needs and both ETC and logistics response focused on supporting Dominica. The resources that were slated for the response to Hurricane Irma on various islands got redirected to the required services on the islands affected by Maria, while simultaneously phasing out areas where the connectivity was re-established by the private sector or the government. This ensured the provision of vital services in key areas together with an appropriate exit strategy on connectivity services.

Logistics Response Teams were deployed to TCI, Sint Maarten, Antigua, Barbuda and Dominica to assess urgent needs and to coordinate for government institutions and other humanitarian partners' access to common logistics services such as transport and warehousing, and to provide essential information, including cargo tracking and Geographic Information System (GIS) mapping services.

This Special Operation complied with the essential logistics and emergency telecommunications requirements to ensure the delivery of key relief items to the affected population, and provided operational support to the humanitarian community through the following activities:

### Logistics Coordination

As part of the Hurricane Irma response, a coordination cell was established in Barbados and Antigua to facilitate the interaction between humanitarian and military actors supporting the Caribbean Disaster Management Emergency Agency (CDEMA) led response. Later, after Hurricane Maria, the Antigua coordination cell was moved to Dominica.

In **Barbados**, there were two staff members deployed, a Senior Logistic Officer liaison to the Caribbean Disaster Management Emergency Agency (CDEMA)-led response and an Information Management Officer. The Special Operation [LP5] provided support to the Regional Coordination Centre (RCC) with information management in support of cargo tracking and logistic coordination (Online Cargo Tracking Tool).

The humanitarian-military coordination cell, based in Barbados, facilitated information-sharing, task division and coordination of operational planning between humanitarian needs and gaps (actual, anticipated or projected) and available military capacity on the ground. An important focus of the coordination cell was geared towards optimising the use of available military assets to support humanitarian operations in hurricane-affected areas.

At the field level, coordination was organized with the Department of Disaster and Emergency Management (DDEM) and other departments.

Requests for the use of military assets were filed using WFP's Logistics Sector-facilitated Request for Assistance (RFAs) forms and procedures. Requests were for the movement of both cargo and passengers to hurricane-affected areas. Requesters included international organisations, non-governmental organisations and governments in the Caribbean region. RFA forms and procedures have been handed over to CDEMA in case if future operations would require the establishment of a humanitarian-military coordination cell for the use of military assets.

In **Turks & Caicos**, the team has helped coordinating the logistics operations of the different actors: Department for International Development of the UK (DFID), United Kingdom Military and with the Department of Disaster Management and Emergencies of Turks & Caicos (DDME).

In **Antigua** the coordination was initially led by CDEMA at Antigua and Barbuda's National Office of Disaster and Services coordination centre (NODS). Six staff members have been deployed, a Senior Regional Supply Chain officer, an Information Management Officer, an aviation officer, a Logistics coordination officer, and an ETC Regional Officer. The SO provided support to the CDEMA/NODS Coordination centre with Information Management in support of cargo tracking and logistic coordination, air service through the United Nations Humanitarian Air Service (UNHAS) and sea transport.

### **Establishment of Operational and Coordination Hubs**

In **Antigua**, WFP established an operational hub in an airport facility provided by the Government of Antigua, where humanitarian cargo was registered, stored, consolidated and then transferred to Dominica.

In response to Hurricane Maria, a major landfall on **Dominica**, WFP's focus was to assist the Government of Dominica and the population. In coordination with the National Port Authority, WFP's logistic hub was installed at the port in Rousseau with Mobile Storage Units (MSU) and prefabricated offices. An additional MSU was installed at Melville airport (Douglas Charles) and one at Portsmouth in the Northern part of the island. In addition, WFP provided technical assistance to the government and other response entities to ensure a coordinated reception and management of a wide variety of relief items. These efforts were complemented by WFP support to the government and other actors through IR EMOP 201105 which facilitated the targeting, beneficiary selection and distribution of relief items.

### **Provision of Air Passenger and Light Cargo Services**

The UN Humanitarian Air Service (UNHAS) is an important component of the Special Operation, with the uncertainty of the path of the hurricanes and the likelihood of Civil Aviation Authority closing the airports for commercial traffic. The only solution to ensure the mobility of humanitarian responders and light equipment was the deployment of humanitarian air assets. WFP's decision to deploy two different types of chartered aircrafts (a fix wings and a helicopter) was based on the need to maintain great flexibility and the capacity to reach areas with and without landing strips.

WFP also provided an airlift of 34mt of assorted humanitarian relief cargo from Jamaica to Turks & Caicos Islands (PLS Airport) for the Office of Disaster Preparedness and Emergency Management (ODPEM).

### **Provision of Shipping Services**

In support of the Regional IR-EMOPs 201104 and 201105 to assist the victims of the Hurricanes Irma and Maria in the Western and Eastern Caribbean, the SO provided sea transport coordination services for the movement of humanitarian relief cargo from Antigua to Dominica as well as WFP food and equipment (trucks and forklift) from the Dominican Republic in coordination with the Dutch Navy.

In addition, the dispatches, storage and transport for the distribution points of the 376 mt of mixed food commodities and for the in-kind rations purchased from the Dominican Republic, were provided through this Special Operation.

In order to increase operation efficiency port and sea transport capacity assessment has been conducted with support by a WFP HQ shipping expert in the Caribbean Region.

### **Provision of Relief Items**

The SO has provided equipment and training to the Department of Disaster Management and Emergency of Turks & Caicos which included: pre-fabricated warehouses, living and accommodation units, boats with outboard motors, an electric generator, motorcycles, tarpaulin, and pallets.

Upon request of CDEMA, a regional online cargo tracking tool was rolled-out to obtain an oversight of projected, planned and completed movements of humanitarian cargo to hurricane-affected countries during the initial stages of the response.

WFP supported CDEMA and the national governments in the management of the relief items information of 40 organisations (international organisations, NGOs, UN agencies, donors and the private sector) and their cargo movement to 10 affected countries in the Caribbean region.

A total of 700 mt of food and relief items were handled and moved in Dominica.

### **Provision of Emergency Telecommunications equipment and services**

The Emergency Telecommunications Cluster (ETC) and its partners, Ericsson Response and the Government of Luxembourg (emergency.lu) deployed its team to Antigua to coordinate the overall response following Hurricane Irma. The coordination was then shifted from Antigua to Dominica during the second phase of the response, as the overall efforts in the Caribbean shifted towards Dominica. Coordination on restoration connectivity was coordinated directly through the Ministry of Telecommunication with the cluster and support from Global System for Mobile Association (GSMA).

The teams provided high-bandwidth satellite connectivity services and Wi-Fi in Sint Maarten as well as in Dominica, ensuring that critical communications be available for the government and humanitarian responders after Hurricane Irma and Maria. The ETC provided connectivity to the Dominican Government and to the first humanitarian responders two days after Hurricane Maria made landfall - providing the connectivity the Government of Dominica had asked for.

Furthermore, in Dominica, the ETC collaborated with the local Internet Service Provider (ISP), EPIC, to provide high capacity fibre-connectivity to the government and the humanitarian response community during the peak of the emergency in Roseau, where central coordination efforts took place. Multiple meetings with the local mobile network providers, Flow and Digicel, took place to minimize a service overlap wherever possible and prioritize areas that needed and required emergency communications.

Service for Communities assessments were carried out in the islands of Antigua, Barbuda and Dominica with the objective to evaluate and assess the needs of the affected populations of these two islands.

The assessments included:

- Collaboration with mobile network operators to advocate for, and highlight good practice in, humanitarian connectivity charter commitments
- Coordination with governments and the private sector to improve community access to functional ICT infrastructure and services

Multiple infrastructure assessments were carried out across Sint Maarten, Barbuda, Antigua and Dominica to determine connectivity priority and support needs for the response. WFP's ETC staff in several affected northern areas in Dominica used Unmanned Aerial Vehicles (UAV), i.e. drones, to carry out various damage assessments. This service was carried out in collaboration with Werobotics and Open Aerial Maps as part of a larger collaboration exercise to bring together multiple imagery assessments made available throughout the response. Satellite as well as UAV assessments were combined and made available through a single platform to streamline information gathering and dissemination.

In Dominica, the infrastructure assessments were done in collaboration with the Mobile Network Providers and the Ministry of Telecommunications. Information was being fed back to the Information Management entities in the humanitarian response sectors. Additionally, Facebook connectivity data, provisioned by the partnership, was used to supplement the various infrastructure assessments carried out in Dominica. This allowed the ETC team and the

Ministry of Telecommunications to have aggregated and consolidated information about the restoration efforts in the country, identifying where connectivity had been already present prior to the hurricane and where connectivity was still lacking in its aftermath. As a consequence, the ETC team was able to redirect the emergency connectivity services to the areas most in need, during the second phase of the response in Dominica, targeting the east of the island, to ensure that critical connectivity services be made available not only to the humanitarian and government entities, but also to the local communities, including community leaders, the police department and health clinics.

## Results

WFP's work in Barbados, in the areas of logistics coordination and information and knowledge management, was well received by CDEMA.

Following a request from the Government of Dominica, WFP staff has been deployed and fully dedicated to support the staffing, restructuring and training of the Dominica Disaster Management Centre ensuring a proper operation hand-over to the Government.

WFP operational support was inclusive and collaborative, relaying operationally relevant information available through direct communication channels to other humanitarian responders in the field (UN, non-UN, military and private sector), which were used to inform their operations, coordination and information products.

Following a request from CDEMA, tools and guidelines to support/facilitate cargo tracking, use of military assets, custom procedures, unsolicited bilateral donations (UBD) and access to constraints maps, were swiftly developed and customized to their requirements and operational context. All the tools and procedures were packaged with clear guidelines on their use, and handed over - via comprehensive training - to CDEMA for ongoing/future use and customization.

UNHAS Caribbean was the first island-to-island and country-to-country operation run by WFP, with only basic administrative support to the operation as WFP had no established country office in close vicinity of the affected region. UNHAS faced a myriad of challenges during the operation, albeit receiving tremendous support from the WFP Regional Bureau in Panama (RBP). Operationally, UNHAS made significant efforts to evaluate situations constantly in order to ensure safe operations throughout. A total of 836 passengers, and 10096 kg of cargo were transported to 17 destinations throughout the Caribbean region, serving 31 humanitarian entities.

Through the various satellite and fibre connectivity solutions, the ETC was able to serve over 2900 users from over 60 agencies as well as communities in the hardest-hit areas in Dominica. Government entities, humanitarian agencies as well as entities such as fire brigades, airports, seaports, hospitals, health centres, among others, received essential connectivity services that were lacking as the telecommunication structure across Dominica had been severely impacted.

Following the service for communities' assessments, connectivity services were made available to the affected population in Dominica in the areas of Marigot, St. Sauveur, Delice and Le Plaine, providing a voice and means for the community when there was no other means to do so. This provided the community with crucial information from the area as well as to them, empowering them to make informed decisions about the next steps on rebuilding their lives.

The ETC and its partner, Ericsson Response, provided training on two occasions to the Ministry of Telecom technical staff in the installation and set-up of Very Small Aperture Terminals (VSAT) stations, providing the hands-on knowledge the technical staff needed to set up, operate and maintain VSAT services in the event of an emergency.

Over five infrastructure assessments took place, the majority of them across Dominica - in multiple areas of the island. This was done in conjunction with the Ministry of Telecom ensuring close coordination with the government entities.

Various high-resolution digital maps were made available through the portal provided by open-aerial maps and Werobotics from various islands - thanks to the coordination carried out during the emergency. These maps then followed-on to provide information to some of the government entities towards the rebuilding of various areas affected by the hurricanes.

The extension in time of the special operation for additional 3 months was requested in order to ensure that important connectivity services continued in the areas where still needed, while also making for a gradual phase-out strategy of the equipment and services. Furthermore, a workshop is planned to carry out further capacity trainings on the equipment and services that have been delivered, alongside the equipment that will be handed over to the government for future emergency response.

## The potential of technology

The emergency presented a series of complexities that made the overall response considerably more challenging than past responses in the region, from the lack of a permanent WFP presence in the affected islands to the challenges of information gathering and assessments across multiple islands.

WFP was able to explore some of the potential that technology brings to support an overall emergency response.

Earlier in the year, WFP carried out a series of workshops in the region on the coordination of UAV's for emergency response. It was through these workshops that WFP then applied for the first time the lessons learned from the disaster response. The result was a coordinated and joint effort alongside with Werobotics and and OpenAerial Maps, to map key areas of various affected islands by Hurricanes Irma and Maria. WFP not only led the overall coordination efforts but also carried out some of the UAV assessments in the north of Dominica. The result provided various governments on several islands with a centralized on-line repository of high-resolution imagery used for impact-assessments as well as potential to use for reconstruction post-assessments.

The partnership that WFP and Facebook signed earlier in the year, also provided the first steps in the region towards improving how we assess connectivity and potentially electricity gaps following a natural disaster. Thanks to the data and information provided by Facebook, WFP was able to determine where the connectivity (and potentially electricity) gaps were in some of the affected islands. Furthermore, through this information, we were able to verify and improve the accuracy of the reports received from various sources about the restoration efforts in the islands. This led to improving how and where WFP ETC prioritizes its services and connectivity, to ensure that we reach those most in need.

Overall, this emergency has shown the importance that the private sector has and the crucial role it plays in an emergency, improving the services needed in a timely and efficient manner.

# Figures and Indicators

## Data Notes

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Island of Dominica. WFP-ETC and partner Ericsson Response setting up the Government of Luxemburg's VSAT connectivity services, Government of Dominica Emergency Operations Center, Roseau, following the impact of Hurricane Maria.