Covered Area Rainfall Event (28/10/2025 to 29/10/2025)

Excess Rainfall

Event Briefing

Haiti

05 November 2025

1 INTRODUCTION

This event briefing describes the impact of rainfall on Haiti, which was associated with a Covered Area Rainfall Event (CARE) starting on 28 October 2025 and ending on 29 October 2025 associated with TC Melissa. The Rainfall Index Loss (RIL) for the Covered Area Rainfall Event was below the attachment point of Haiti's Excess Rainfall policy, and therefore no payout is due to the Government of Haiti on its Excess Rainfall policy. However, the Localized Event Trigger (LET) endorsement of the XSR3.1 model identified this CARE as a localized event[1] since the average precipitation in the 10% of the area with highest precipitation reported by five of the six satellite datasets was greater than the local precipitation threshold. Therefore, a payout of US$1,198,434 is due to the Government under the Localized Event Trigger endorsement of Haiti's Excess Rainfall policy.

2 EVENT DESCRIPTION

On 26 October, Tropical Cyclone Melissa was located over the central Caribbean Sea, about 260 mi (460 km) west-southwest of Port-au-Prince, Haiti (Figure 1a). The system was undergoing rapid intensification due to a reduction in vertical wind shear, which had previously hindered its strengthening. This led Melissa to reach Category 4 hurricane status at 0900 UTC, with maximum sustained winds estimated at 140 mph (220 km/h) and a minimum central pressure of 944 mb.

Satellite imagery indicated the formation of a cloud-free eye, surrounded by a well-organized and symmetric convective ring (Figure 2a). In addition, a strong outer rainband was present in the eastern semicircle of the hurricane, producing large bursts of convection throughout the day mainly over the waters south of Hispaniola, but with some extensions inland (Figure 2a). Radar imagery showed that moderate rainfall affected localized areas in southern and southeastern Haiti, particularly around 1800 UTC (Figure 3a). Throughout the day, Melissa continued to move slowly westward at about 5 mph (7 km/h), steered by a ridge located to its north.

Over the next day, 27 October, Melissa maintained a slow westward track, moving nearly parallel to the southern coast of Jamaica at a distance of about 110 mi (180 km). During this period, it continued to gradually strengthen, reaching Category 5 intensity at 0900 UTC. Satellite images showed that Melissa retained the classical structure of a major hurricane, observed the previous day, with a well-defined eye—about 11 mi (18 km) in diameter—surrounded by a compact ring of deep convection (Figure 2b). The strong outer rainband remained active in the eastern semicircle of the hurricane, over the waters south of Haiti and extending intermittently inland (Figure 2b). As on the previous day, radar imagery indicated localized rainfall events of moderate intensity over southern Haiti (Figure 3b).

[1] The LET is designed to cover rainfall events that affect only a small portion of the country. To determine a qualifying localized event, two conditions must be met: the average precipitation in the 10% of the area with highest precipitation – known as the "Local Exposure" - must be greater than the local precipitation threshold (LPT) for (i) at least one of the satellite datasets (CMORPH or IMERG) and (ii) at least three of the six models (CMORPH, IMERG, WRF5, WRF7, WRF11 and WRF15).

In the early hours of 28 October, Melissa began turning north-northeastward and accelerating, influenced by an amplifying trough over the southeastern United States (Figure 1b). This change in steering flow directed the hurricane's core toward Jamaica and reduced its distance from Haiti. At 1200 UTC, the centre was located near latitude 17.5°N and longitude 78.1°W, about 35 mi (56 km) from Jamaica's closest point and 250 mi (400 km) from the nearest point in Haiti. Satellite imagery showed that Melissa*'s* convective core had further expanded and intensified compared to the previous day, while strong convection remained active in the eastern outer rainband, which began to affect directly Haiti (Figure 2c).

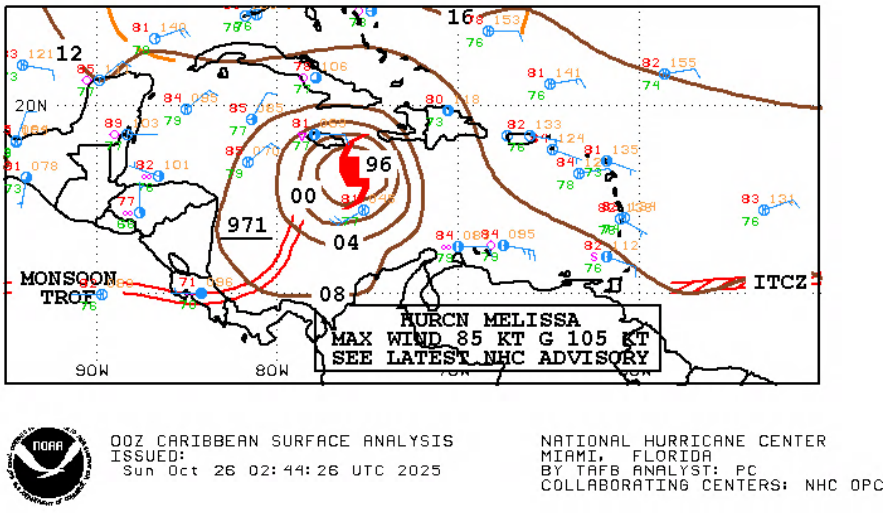
Radar and satellite data (in Figures 2c, 2d and 3c, 3d, respectively) indicated that from this time onward, moderate to locally intense rainfall affected much of Haiti, particularly the southwest, central and northeastern regions. This situation persisted throughout the day, with peak intensity between 1500 UTC and 2100 UTC, as Melissa completed the approach to Jamaica, made landfall in the island's southwest, and crossed the country while maintaining Category 5 strength. The hurricane's eastern outer rainband simultaneously passed over Haiti.

Interaction with Jamaica's mountainous terrain caused some weakening of the system. The hurricane's eye became partially obscured, and cloud tops warmed, indicating a decrease in convective intensity in both the inner core and the eastern outer rainband, still located over Haiti. As a result, rainfall over Haiti temporarily subsided by around 2100 UTC.

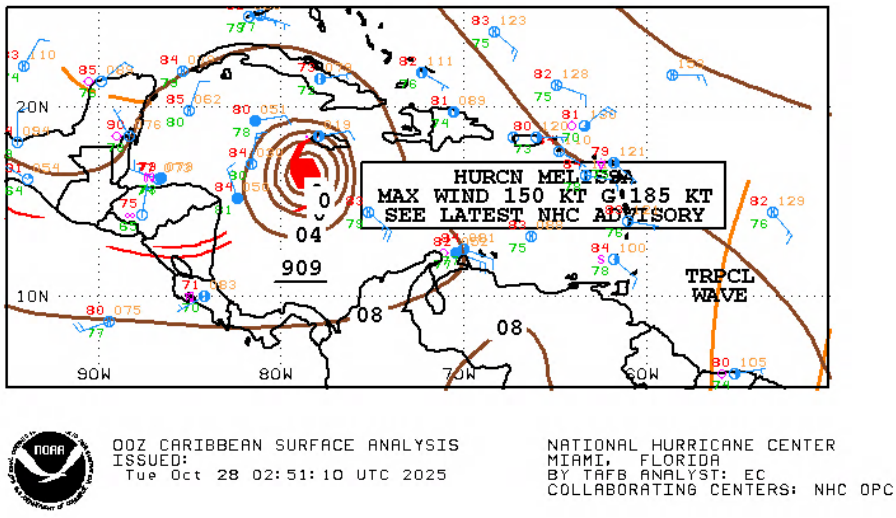
In the early hours of 29 October, Melissa continued to move north-northeastward at an increasing forward speed of about 10 mph (17 km/h), moving away from Jamaica and making landfall in southeastern Cuba at 0710 UTC, as a Category 5 hurricane. Satellite imagery prior to the second landfall indicated that Melissa's eye had re-formed and surrounding convection had rapidly re-organized, including in the eastern outer rainband (Figure 2e). In particular, trailing thunderstorms in the southeastern sector of the hurricane began affecting Haiti again around 0600UTC, producing moderate to locally intense rainfall. Radar and satellite imagery (in Figures 2e, 2f and 3e, 3f, respectively) reported that precipitation was particularly heavy in localized areas between 0600 UTC and 1500 UTC, gradually shifting from the southwest toward central Haiti, while Melissa's eye was crossing Cuba and the southeastern outer rainband was passing over Haiti.

Upon emerging off the northern coast of Cuba, Melissa weakened to Category 3 strength. Interaction with Cuba's high terrain disrupted the small-eye structure and weakened overall convection (Figure 2f). Consequently, rainfall associated with the outer rainband over Haiti ended.

During the remainder of 29 October and into 30 October, Melissa gradually re-intensified and accelerated northeastward, passing over The Bahamas. Despite the hurricane's renewed strengthening, its rainbands remained well north of Haiti, marking the end of the rainfall episode over the country.



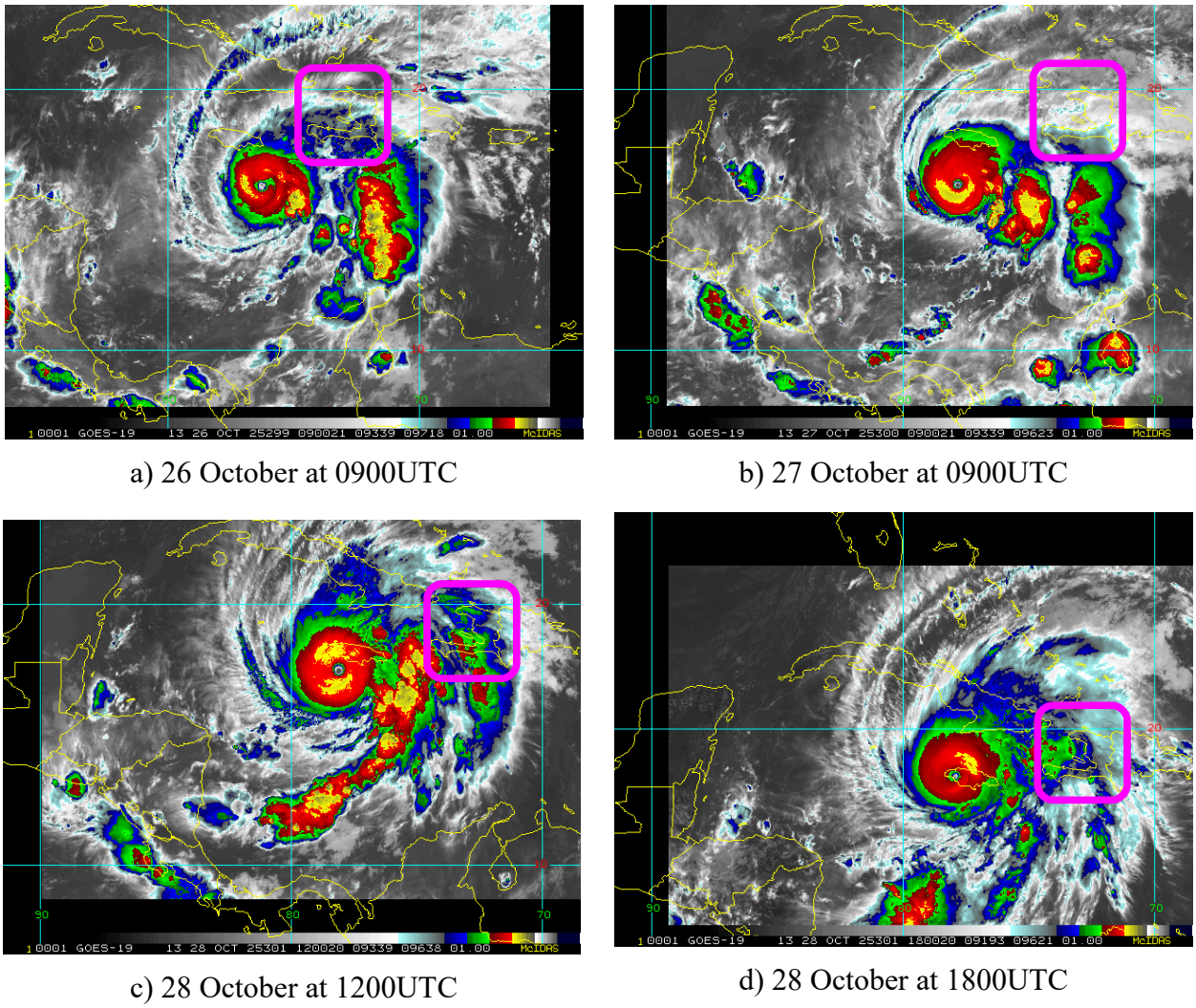
a) 26 October at 0000UTC



b) 28 October at 0000UTC

Figure 1 Surface analysis over the Caribbean area on 26 and 28 October at different times as indicated in the labels. Source: US National Hurricane Center[2]

[2] National Oceanic and Atmospheric Administration - FTP, National Hurricane centre, review date: 26 and 28 October 2025, available at: *https://www.nhc.noaa.gov/tafb /CAR00Z.gif*



a) 26 October at 0900UTC

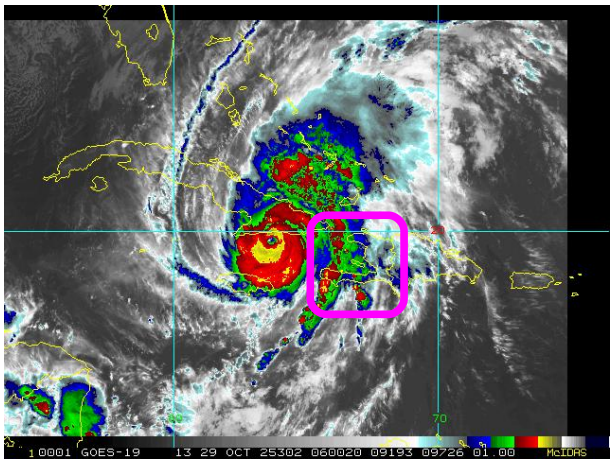
b) 27 October at 0900UTC

c) 28 October at 1200UTC

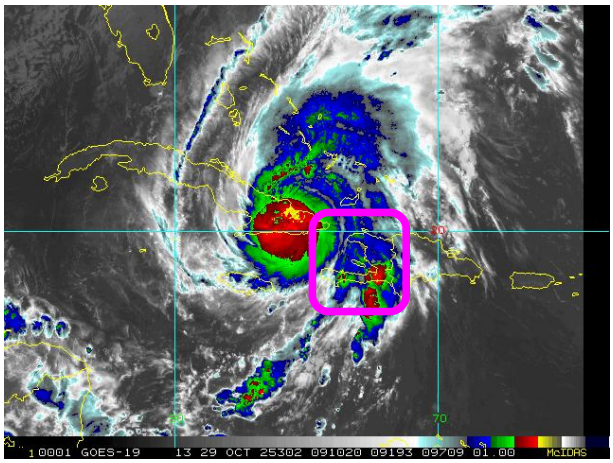
d) 28 October at 1800UTC

Figure 2 Satellite imagery from 26 to 29 October, 2025 at different times as indicated by the labels from the thermal infrared channel enhanced with colour. Blue/green colours represent high altitude clouds (top cloud temperature between -50°C and -70°C), while the red/yellow colours represent very high altitude clouds (top cloud lower than -70°C). High altitude clouds indicate strong convection associated with intense precipitation. Source: NOAA, National Environmental Satellite, Data and Information Service[3]. The violet square indicates Haiti's location

[3] RAMSDIS Online Archive, NOAA Satellite and Information Service, available at: https://rammb-data.cira.colostate.edu/tc_realtime/storm.asp?storm_identifier=al132025

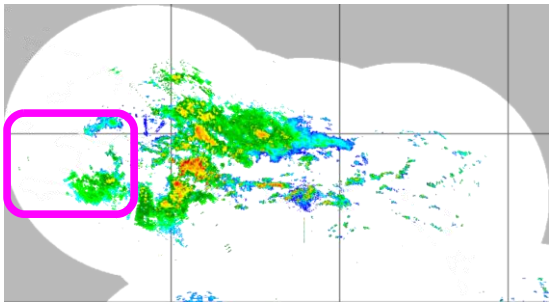


e) 29 October at 0600UTC

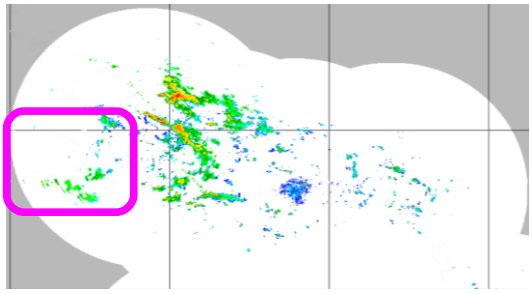


f) 29 October at 0910UTC

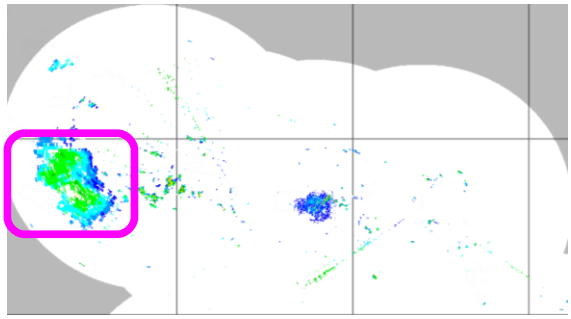
Figure 2 Satellite imagery from 26 to 29 October, 2025 at different times as indicated by the labels from the thermal infrared channel enhanced with colour. Blue/green colours represent high altitude clouds (top cloud temperature between -50°C and -70°C), while the red/yellow colours represent very high altitude clouds (top cloud lower than -70°C). High altitude clouds indicate strong convection associated with intense precipitation. Source: NOAA, National Environmental Satellite, Data and Information Service[4]. The violet square indicates Haiti's location



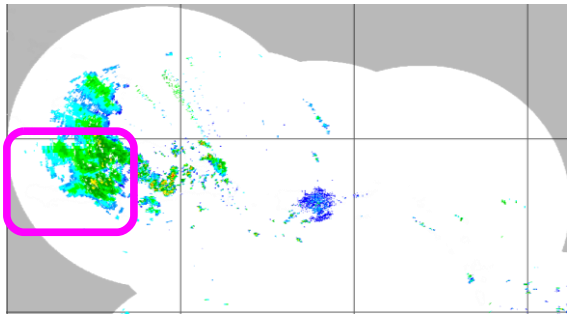
a) 26 October at 1806UTC



b) 27 October at 1256UTC

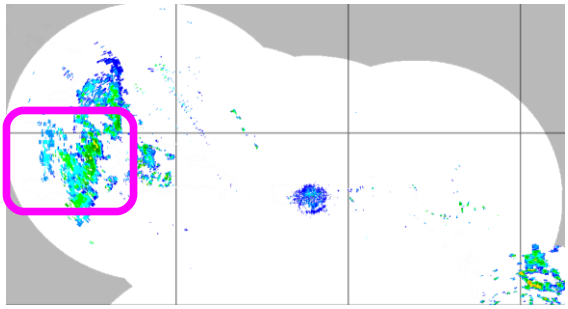


c) 28 October at 1206UTC

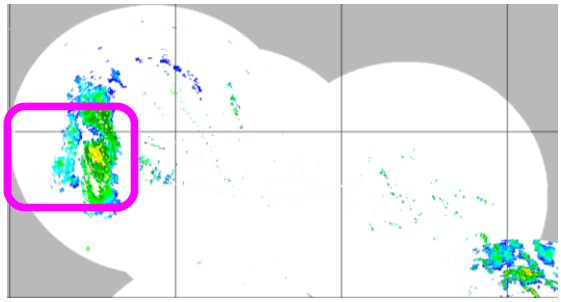


d) 28 October at 1851UTC

[4] RAMSDIS Online Archive, NOAA Satellite and Information Service, available at: https://rammb-data.cira.colostate.edu/tc_realtime/storm.asp?storm_identifier=al132025



e) 29 October at 0606UTC



f) 29 October at 0906UTC

Figure 3 Radar imagery from 26 to 29 October. 2025, at different times as indicated by the labels from the radar composite over the Caribbean and Central America region. Blue/green colours represent low to moderate rainfall, while the yellow/red colours represent intense and very intense precipitation. Source: Barbados Radar Composite[5]. The violet square indicates Haiti's location

3 REPORTED IMPACTS

Hurricane Melissa brought catastrophic flooding to Haiti, with heavy rains causing widespread devastation across several regions. In Petit-Goâve, at least 20 people (including 10 children) lost their lives, and more than 160 homes were damaged, with 80 completely destroyed. Severe flooding occurred in municipalities such as Corail, Anse-d'Hainault, the Cayemites Islands, Beaumont, Pestel, and ten out of eleven municipalities in Nippes[7].

Thousands of persons were displaced, with over 13,900 people taking refuge in 121 active shelters throughout Grand'Anse, Nippes, and the South, including 152 persons with disabilities who required emergency food assistance. Infrastructure also suffered, with flooded health facilities and damaged roads hampering aid delivery[8].

The agricultural sector was badly affected, as banana plantations, fruit trees, and other crops were destroyed or severely damaged, and livestock was swept away.

[5] Barbados Radar Composite, available from 26 to 29 October at: https://www.barbadosweather.org/BMS_Radar_Composite_Resp.php#

[7] Hurricane Melissa – HAITI Situation Report # 3- PAHO 10/29/2025

[8] Hurricane Melissa Impacts Haiti | FEWS NET

4 RAINFALL MODEL OUTPUTS

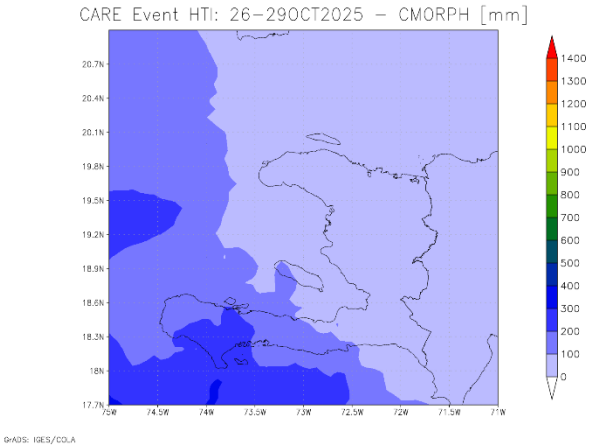
All data sources used by the XSR 3.1 model, CMORPH, IMERG, WRF5, WRF7, WRF11 and WRF15[10], detected the occurrence of precipitation over Haiti and the surrounding waters during the period 26 to 29 October 2025. Each data source reported a specific distribution and accumulation of rainfall, as discussed below and shown in Figure 4. A CARE for Haiti was activated on 28 October and closed on 29 October. The CARE was activated due to the use of the 12-hour and the 48-hour aggregation intervals for precipitation[11] and thus the period considered by the XSR 3.1 model for the loss estimate based on the accumulated precipitation in Haiti was 26 to 29 October 2025.

Table 1: Report from XSR 3.1 Data Sources on the Precipitation over Haiti, October 26 to 29, 2025

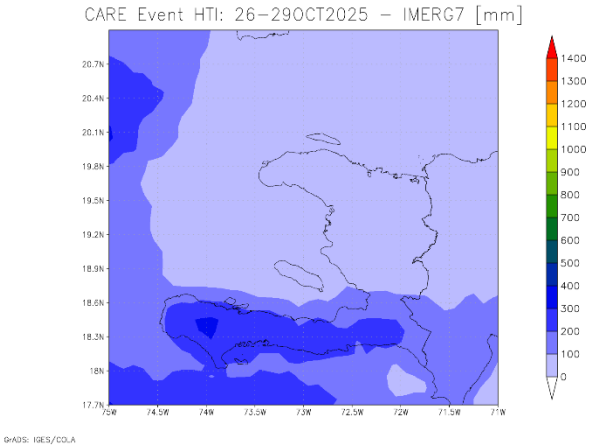
CMORPH	CMORPH reported total accumulated precipitation values above 100 mm across the Grand'Anse and Sud Departments, with higher values, ranging between 200 mm and 300 mm, observed over a localized area in southwestern Haiti.
IMERG	IMERG reported total accumulated precipitation values ranging from 100 mm to 400 mm across southern Haiti, while lower values were shown over the rest of the country. The highest values, between 300 mm and 400 mm, were reported over a small area between the Grand'Anse and the Sud Departments
WRF5	WRF5 showed total accumulated precipitation values between 600 mm and 1100 mm over the area in the Sud Department in the vicinity of Les Cayes, while lower values were shown over the remaining areas of the country.
WRF7	WRF7 showed total accumulated values of precipitation ranging between 100 mm and 600 mm over the Sud Department and over a part of the Sud-Est Department. The highest values, between 400 mm and 600 mm, were reported over a small area in the vicinity of Les Cayes.
WRF11	WRF11 reported accumulated values of precipitation higher than 600 mm across the southwestern area of Haiti. The highest values, greater than 1200 mm, were concentrated over a small area within the Sud Department.
WRF15	WRF15 reported accumulated values of precipitation lower than 500 mm across Haiti. The highest values, exceeding 300 mm, were reported over different areas in the southern departments of the country.

[10] CMORPH Model: the satellite-based rainfall precipitation estimates provided by the NOAA Climate Prediction centre (CPC) using the so-called Morphing Technique Further details are provided in the Definitions section of this report IMERG Model: The satellite-based rainfall estimation model developed by NASA, expressed in mm, derived by aggregating the IMERG 30-minute Rainfall Data at 10km spatial resolution and available at *https://jsimpsonhttps.pps.eosdis.nasa.gov/imerg/late*. Further details in the Definitions section of this reportWRF5, WRF7, WRF11 and WRF15 Models: the Weather Research and Forecasting Model weather model-based Configuration #1 and #2 data *https://www.mmm.ucar.edu/weather-research-and-forecasting-model.* These data are initialised by the NCEP FNL dataset. (NCEP FNL Operational Model Global Tropospheric Analyses [*http://rda.ucar.edu/datasets/ds083.2/*]). Further details are provided in the Definitions section of this report.

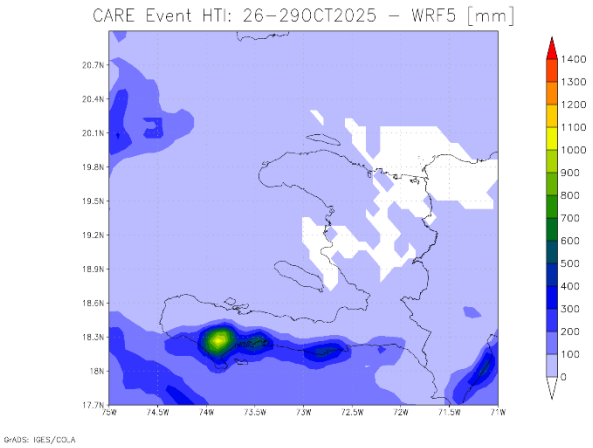
[11] The two aggregation periods correspond to the Rainfall Aggregation Period #1 and Rainfall Aggregation Period #2, as indicated in the Schedule. Further details in the Definitions section of this report.



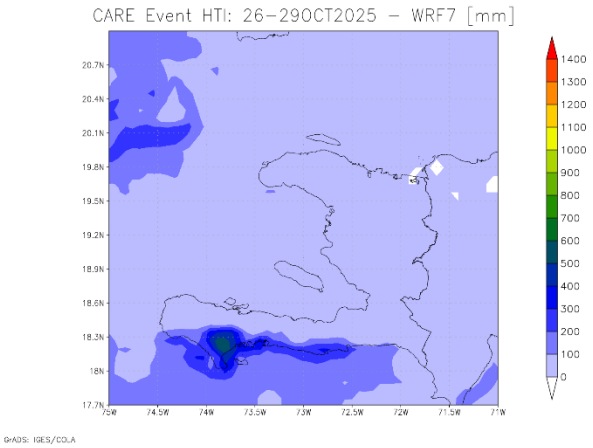
a) CMORPH



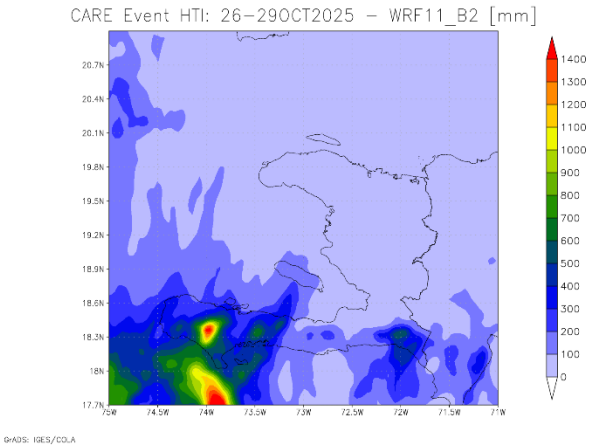
b) IMERG



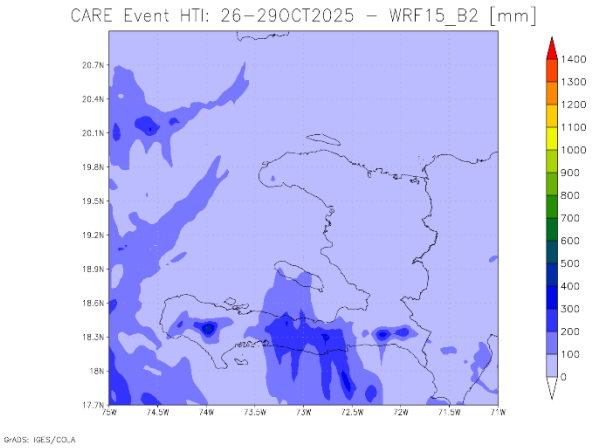
c) WRF5



d) WRF7



e) WRF11



f) WRF15

Figure 4 Total accumulated precipitation during the period 26 to 29 October 2025 estimated by CMORPH (a), IMERG7 (b), WRF5 (c), WRF7 (d), WRF11 (e), WRF15 (f). Source: CCRIF SPC

Daily rainfall maps by CMORPH, IMERG, WRF5, WRF7, WRF11 and WRF15 over the exposure map of XSR 3.1 are not included here and they can be downloaded at the following links for 12-hour aggregation and 48-hour aggregation respectively:

https://wemap.ccrif.org/OUTPUT/CCRIF/XSR/Events/HTI/CARE_2_2025/daily_prec_short.mp4

https://wemap.ccrif.org/OUTPUT/CCRIF/XSR/Events/HTI/CARE_2_2025/daily_prec_long.mp4

The Rainfall Index Loss (RIL) was above the loss threshold for Haiti for all of the data sources used by XSR3.1: CMORPH, IMERG, WRF5, WRF7, WRF11 and WRF15. The RIL was the highest for WRF5.

The final RIL (RIL_{FINAL}) was calculated as the average of all the RILs from CMORPH, IMERG, WRF5, WRF7, WRF11 and WRF15. The RIL_{FINAL} was below the attachment point of the country's Excess Rainfall policy, and thus the main policy was not triggered.

The Wet Season Trigger (WST) endorsement of the XSR3.1 model did not identify this CARE as a "Wet Season" event[12]. Therefore, no payout is due under the Wet Season Trigger endorsement of Haiti's Excess Rainfall policy.

The Localized Event Trigger (LET) component of the XSR3.1 model identified this CARE as a localized event[13] since the average precipitation in the 10% of the area with highest precipitation reported by 5 of the data sources (IMERG, WRF5, WRF7, WRF11 and WRF15) was greater than the local precipitation threshold. Therefore, a payout is due under the Local Event Trigger endorsement of the Haiti's Excess Rainfall policy.

5 TRIGGER POTENTIAL

The Rainfall Index Loss calculated for this Covered Area Rainfall Event (CARE) was below the attachment point of Haiti's Excess Rainfall policy and therefore no payout is due under the main policy.

[12] The WST endorsement is designed to provide a predetermined payout for rainfall events occurring amidst already saturated soil conditions, effectively capturing the heightened risk of flooding and landslides. It is activated based on two factors: the Wet Index (the average 1-month Standardized Precipitation Index for all grid cells in the country) and Wet Periods (the period of time where the Wet Index exceeds 1, which indicates that the soil is wetter than its long-term average and serves as an indicator of soil saturation). The WST policy endorsement provides a payment when one or more CAREs with a modelled loss greater than zero and lower than the policy Attachment Point occur within a Wet Period and the corresponding value of the Wet Index during the Wet Period exceeds a predetermined threshold. Wet season event (WE). Any period of consecutive days, during which the Wet Index (WI) is equal or greater than 1.

[13] The LET is designed to cover rainfall events that affect only a small portion of the country. To determine a qualifying localized event, two conditions must be met: the average precipitation in the 10% of the area with highest precipitation – known as the "Local Exposure" - must be greater than the local precipitation threshold (LPT) for (i) at least one of the satellite datasets (CMORPH or IMERG) and (ii) at least three of the six models (CMORPH, IMERG, WRF5, WRF7, WRF11 and WRF15).

The Wet Season Trigger (WST) endorsement of the XSR3.1 model did not identify this CARE as a "Wet Season" event. Therefore, no payout is due under the Wet Season Trigger endorsement of Haiti's Excess Rainfall policy.

The Localized Event Trigger (LET) endorsement of the XSR3.1 model identified this CARE as a localized event since the average precipitation in the 10% of the area with highest precipitation reported by five of the satellite datasets was greater than the local precipitation threshold. Therefore, a payout of US$1,198,434 is due to the Government under the Localized Event Trigger endorsement of Haiti's Excess Rainfall policy.

For additional information, please contact CCRIF SPC at: pr@ccrif.org

DEFINITIONS

Active Exposure Cell Percentage Threshold	The percentage of the total number of XSR Exposure Grid Cells within the Covered Area of the Insured, that must be exceeded to trigger a Covered Area Rainfall Event.
Active Exposure Grid Cells	The XSR Exposure Grid Cells for which in the same single day the Aggregate Rainfall #1 value computed using the CMORPH-based Rainfall Estimate equals or exceeds the Rainfall Event Threshold #1 or the Aggregate Rainfall #2 value computed using the CMORPH-based Rainfall Estimate equals or exceeds the Rainfall Event Threshold #2.
Aggregate Rainfall #1	The rainfall amount accumulated over the Rainfall Aggregation Period #1 (as defined in the Schedule) measured in millimeters (mm) in any of the XSR Exposure Grid Cells in the Covered Area of the Insured. For a given day and a Rainfall Aggregation Period #1 of n hours, the Aggregate Rainfall #1 is the maximum amount of rainfall accumulated over any of the n-hour windows that intersect the day itself considering a time interval of 3 hours.
Aggregate Rainfall #2	The rainfall amount accumulated over the Rainfall Aggregation Period #2 (as defined in the Schedule) measured in millimeters (mm) in any of the XSR Exposure Grid Cells in the Covered Area of the Insured. For a given day and a Rainfall Aggregation Period #2 of n hours, the Aggregate Rainfall #2 is the maximum amount of rainfall accumulated over any of the n-hour windows that intersect the day itself considering a time interval of 3 hours.
Calculation Agent	Entity charged with undertaking the primary calculation of the Rainfall Index Loss.
CMORPH-based Maximum Aggregate Rainfall #1	The maximum value during the Covered Area Rainfall Event of the Aggregate Rainfall #1 computed using the CMORPH-based Rainfall Estimates in any given XSR Exposure Grid Cell over the Covered Area of the Insured.
CMORPH-based Maximum Aggregate Rainfall #2	The maximum value during the Covered Area Rainfall Event of the Aggregate Rainfall #2 computed using the CMORPH-based Rainfall Estimates in any given XSR Exposure Grid Cell over the Covered Area of the Insured.

CMORPH-based Covered Area Rainfall Parameters	The CMORPH Model information provided on a continuous basis by the XSR Model Data Reporting Agency used by the Calculation Agent to obtain the CMORPH-based Rainfall Estimates using the XSR Rainfall Model. Parameters are drawn from XSR Exposure Grid Cells within the Covered Area of the Insured, by their respective latitude and longitude. Measurement units and precision of data ingested by the XSR Rainfall Model are identical to those provided by the XSR Model Data Reporting Agency and are further elaborated in the Attachment entitled 'Calculation of Rainfall Index Loss and Policy Payment'.
CMORPH Model	The satellite-based rainfall estimation model provided by NOAA CPC as described in the Rainfall Estimation Models section of the Policy.
Covered Area	The territory of the Insured as represented in the XSR Rainfall Model.
Covered Area Rainfall Event	Any period of days, with an interruption less than or equals to the Event Tolerance Period, during which the number of Active Exposure Grid Cells is greater than or equal to the product of (a) Active Exposure Cell Percentage Threshold multiplied by (b) the total number of XSR Exposure Grid Cells within the Covered Area.
Country Disaster Alert	An official disaster alert issued by ReliefWeb (*http://reliefweb.int/*) for the country in question for one of the following types of events: tropical cyclone, flood, flash flood and severe local storm. Any disaster alert issued later than seven (7) days after the completion of the Covered Area Rainfall Event (CARE) event will not be considered. The Disaster Alert description issued by ReliefWeb and/or its attached documentation must include specific reference to the CARE dates with a tolerance period of 2 calendar days.
Maximum Aggregate Rainfall #1	The highest value during a Covered Area Rainfall Event of the Aggregate Rainfall #1 amount in any of the XSR Exposure Grid Cells in the Covered Area of the Insured computed.
Maximum Aggregate Rainfall #2	The highest value during a Covered Area Rainfall Event of the Aggregate Rainfall #2 amount in any of the XSR Exposure Grid Cells in the Covered Area of the Insured computed.

Rainfall Event Threshold #1	Aggregate Rainfall #1 level as defined in the Schedule which should be exceeded to trigger an Active Exposure Cell.
Rainfall Event Threshold #2	Aggregate Rainfall #2 level as defined in the Schedule which should be exceeded to trigger an Active Exposure Cell.
Rainfall Aggregation Period #1	The number of hours over which the Aggregate Rainfall #1 is computed for all XSR Exposure Grid Cells during a Covered Area Rainfall Event.
Rainfall Aggregation Period #2	The number of hours over which the Aggregate Rainfall #2 is computed for all XSR Exposure Grid Cells during a Covered Area Rainfall Event.
Rainfall Index Loss	For any Covered Area Rainfall Event affecting the Insured, the US Dollar loss calculated by the Calculation Agent using the XSR Rainfall Model, as described in the Attachment entitled 'Calculation of Rainfall Index Loss and Policy Payment'. The Rainfall Index Loss can only be calculated once the Covered Area Rainfall Event is completed.
WRF5 Model	The weather research and forecasting rainfall model by NOAA with Configuration #5 data initialized with and assimilating the data provided by the National Center for Environmental Prediction as described in the Rainfall Estimation Models and in the Input Data to the Rainfall Estimation Models sections of this Attachment.
WRF7 Model	The weather research and forecasting rainfall model by NOAA with Configuration #7 data initialized with and assimilating the data provided by the National Center for Environmental Prediction as described in the Rainfall Estimation Models and in the Input Data to the Rainfall Estimation Models sections of this Attachment.
XSR Rainfall Model	The computer model used to calculate the Rainfall Index Loss, as described in the Attachment entitled 'Calculation of Rainfall Index Loss and Policy Payment'.
XSR Exposure Grid Cells	The 30 arc-second by 30 arc-second grid of cells each of which is attributed with an XSR Grid Cell Exposure Value greater than zero.

XSR Grid Cell Exposure Value	The value, used to calculate the CMORPH-based Exposure Grid Cell Loss, the WRF5-based Exposure Grid Cell Loss, and the WRF7-based Exposure Grid Cell Loss.