Covered Area Rainfall Events (19/08/2025)

Excess Rainfall

Event Briefing

Turks and Caicos Islands

01 September 2025

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1 INTRODUCTION

This event briefing describes the impact of rainfall on Turks and Caicos Islands, which was associated with a Covered Area Rainfall Event (CARE) starting on 19 August and ending on 19 August 2025, this CARE is associated to Hurricane Erin. The Rainfall Index Loss (RIL) for the Covered Area Rainfall Event was below the attachment point of Turks and Caicos Islands' Excess Rainfall policy, and therefore no payout is due to the Government of Turks and Caicos Islands. This CARE did not activate the Wet Season Trigger or Localized Event Trigger endorsement of the Excess Rainfall policy and therefore no payout under either endorsement is due.

2 EVENT DESCRIPTION

On August 16 and 17, 2025, Hurricane Erin moved across the Atlantic waters north of the Leeward Islands, passing at a minimum distance of approximately 90 mi (145 km) to 150 mi (241 km) from the northern Leeward Islands, and causing tropical-storm conditions over the region. On August 16, Erin rapidly strengthened into a Category 5 hurricane, while on August 17 it underwent an eyewall replacement cycle—a structural change that occurs in the most powerful hurricanes—resulting in a weakening of intensity but an expansion in size.

On August 17, Hurricane Erin was moving west-north-westward at 14 mph (22 km/h). After passing the Leeward Islands, it headed towards the Turks and Caicos Islands, crossing the Atlantic waters north of Puerto Rico. By 1800UTC, the hurricane's centre was located at latitude 22.1° North, longitude 68.8° West, approximately 200 miles (320 km) east of Grand Turk Island, the easternmost island of the Turks and Caicos Islands. At this time, Erin was a large Category 3 hurricane, still in the midst of the eyewall replacement cycle. The satellite imagery (Figure 2a) showed a well-organized and broad cloud pattern with numerous convective banding features, primarily to the south-west of the centre. These outer rainbands began to affect Turk and Caicos Islands, bringing moderate to locally intense precipitation (Figure 2a).

On 18 August at 0300UTC, Erin re-intensified into a Category 4 hurricane, with maximum sustained winds near 130 mph (215 km/h), following the completion of the eyewall replacement cycle. Satellite imagery four hours later (Figure 2b) showed a contraction of the deep convection area and the formation of a single eyewall of approximately 23 mi (37 km) in diameter. At this time, the deep convection associated with the hurricane's inner core started to approach the Turks and Caicos Islands (Figure 2b), bringing heavy rainfall, especially to the easternmost islands.

Throughout the rest of August 18, Erin continued to move west-north-westward at a gradually slower pace, maintaining a generally steady intensity. The convective outer rainbands expanded once again, causing moderate to intense rainfall over the Turks and Caicos Islands throughout the day, with intensification around 1800 UTC when the hurricane's centre made its closest approach to the territory, about 120 mi (195 km) from North Caicos (Figure 2c).

By 0600 UTC on August 19, the hurricane's centre was located at latitude 24.5° North, longitude 71.8° West, approximately 180 mi (290 km) north of North Caicos. From this point, it gradually turned north-north-westward and increased its forward speed, moving away from the Turks and

Caicos Islands. Satellite imagery (Figure 2d) showed signals of an imminent weakening, as the structure became more asymmetric and deep convection less intense in the innner core, due to the inhibiting effects of environmental wind shear present in the region east of The Bahamas. Nevertheless, a long trailing convective band still stretched southward from the hurricane's core, extending over the Turks and Caicos Islands (Figure 2d), bringing moderate to locally intense precipitation to the region.

By 1200 UTC, Erin had weakened to a Category 2 hurricane, and the southern outer rainband became more scattered. By 1800 UTC, rainfall gradually ceased over the Turks and Caicos Islands.

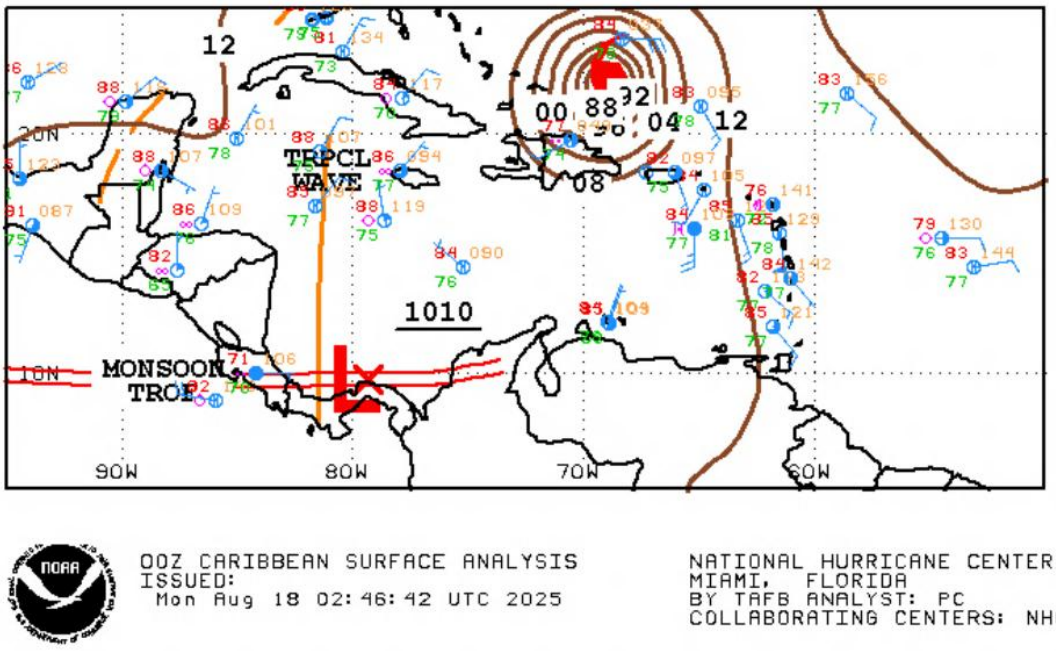
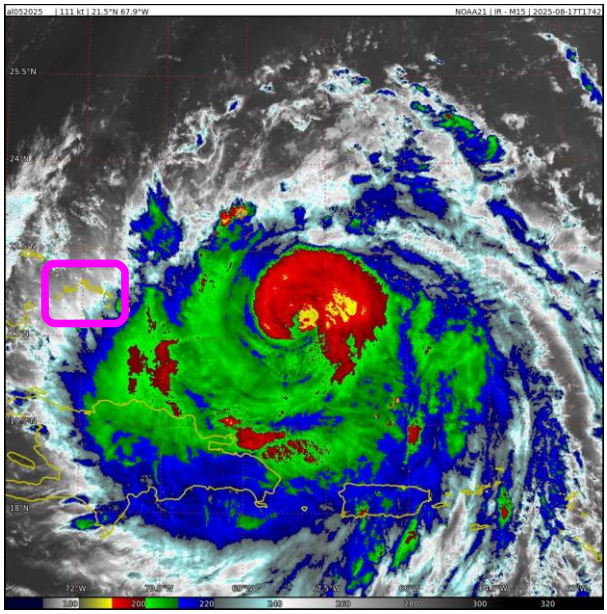
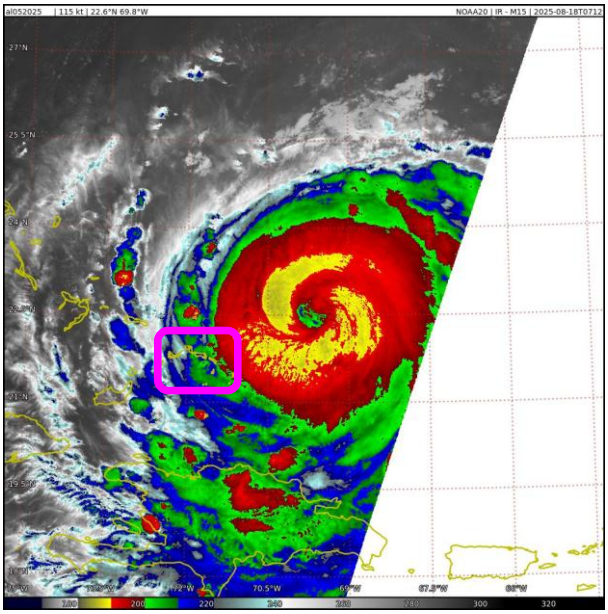


Figure 1 Surface analysis over the Caribbean area on 18 August at 0000UTC. Source: US National Hurricane centre[1]

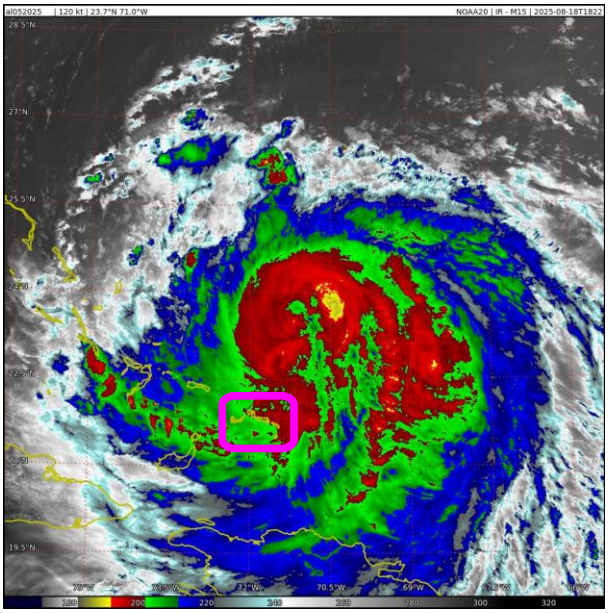
1 National Oceanic and Atmospheric Administration - FTP, National Hurricane centre, review date: 18 August 2025, available at: *https://www.nhc.noaa.gov/tafb /CAR 00 Z.gif*



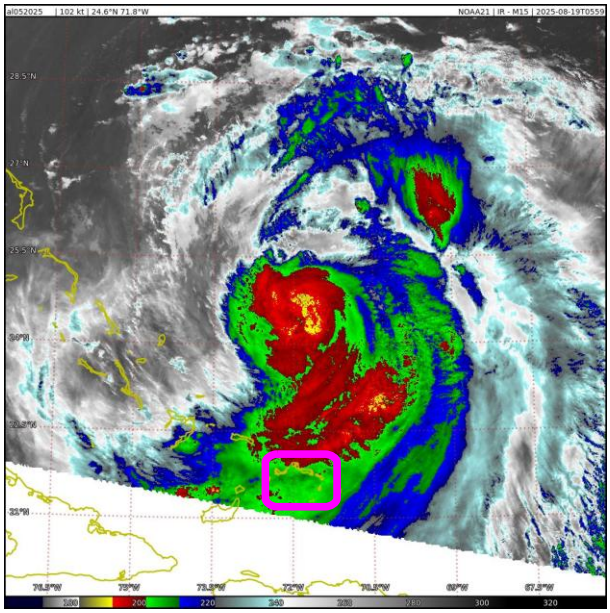
a) 17 August at 1746UTC



b) 18 August at 0716UTC



c) 18 August at 1822UTC



d) 19 August at 0559UTC

Figure 2 Satellite imagery on 17, 18 and 19 August 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. The violet square indicates the location of the Turks and Caicos Islands. Source: NOAA, National Environmental Satellite, Data and Information Service[2].

[2] RAMSDIS Online Archive, NOAA Satellite and Information Service, available at: https://rammb-data.cira.colostate.edu/tc_realtime/storm.asp?storm_identifier=al052025

3 REPORTED IMPACTS

According to the Department of Disaster Management and Emergencies (DDME), no significant structural damage was reported; however, localized flooding and pooling were reported on some roadways. While no homes were flooded, several incidents of minor roof leaks were noted

4 RAINFALL MODEL OUTPUTS

All data sources used by the XSR 3.1 model, CMORPH, IMERG, WRF5, WRF7, WRF11 and WRF15[3], detected the occurrence of precipitation over Turks and Caicos Islands and the surrounding waters during the period 17 to 19 August 2025. Each data source reported a specific distribution and accumulation of rainfall, as discussed below and shown in Figure 3. A CARE for Turks and Caicos Islands was activated on 19 August and closed on the same day. The CARE was activated due to the use of the 12-hour and the 48-hour aggregation intervals for precipitation[4] and thus the period considered by the XSR 3.1 model for the loss estimate based on the accumulated precipitation in Turks and Caicos Islands was 17 to 19 August 2025.

Table 1: Report from XSR 3.1 Data Sources on the Precipitation over Turks and Caicos Islands, August 17 to 19, 2025

CMORPH	CMORPH reported total accumulated values of precipitation higher than 60 mm over a portion of East Caicos and the Turks Islands, with the highest values, between 90 mm and 105 mm, over Grand Turks. Lower values were reported over the remainder of the territory.
IMERG	IMERG reported total accumulated precipitation higher than 60 mm over a portion of East Caicos and Providenciales and the Turks Islands, with the highest values, between 135 mm and 150 mm, across the small Turks Islands south of Grand Turks. Lower values were reported over the remainder of the territory.
WRF5	WRF5 showed total accumulated values of precipitation ranging between 60 mm and 90 mm over most of Turk and Caicos Islands. Lower values, between 30 mm and 60 mm, were reported over Providenciales and West Caicos.
WRF7	WRF7 showed total accumulated values of precipitation higher than 60 mm over portions of East Caicos, Middle Caicos and North Caicos as well as across

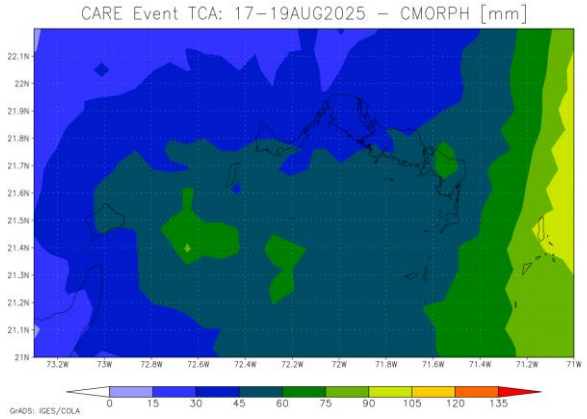
[3] CMORPH Model: the satellite-based rainfall precipitation estimates provided by the NOAA Climate Prediction centre (CPC) using the so-called Morphing Technique *http://www.cpc.ncep.noaa.gov/products/janowiak/cmorph_description.html*. Further details are provided in the Definitions section of this reportIMERG 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.

[4] 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.

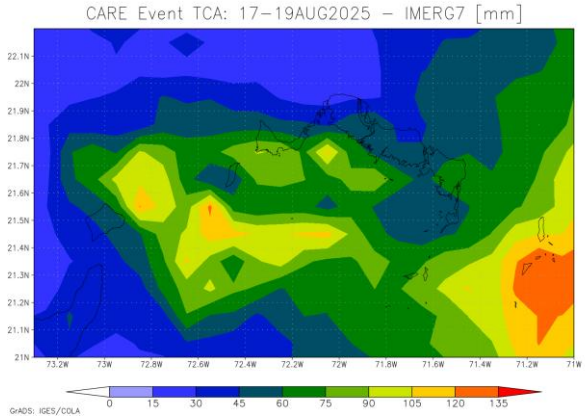
the Turks Islands. The highest values, between 75 mm and 90 mm, were reported over East Caicos. Values lower than 60 mm were showed over the rest of the territory.

WRF11 — WRF11 reported total accumulated values of precipitation lower than 30 mm over the entire territory of Turks and Caicos Islands.

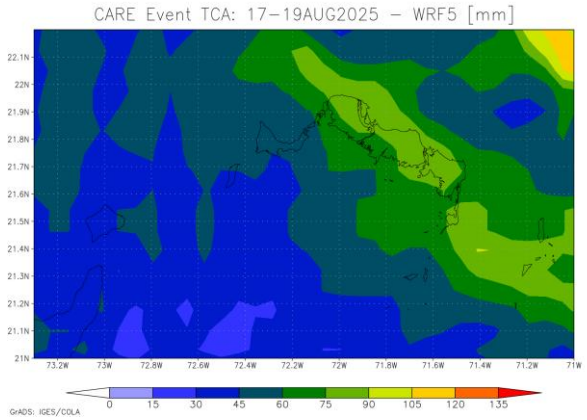
WRF15 — WRF15 reported accumulated values of precipitation higher than 60 mm over the Turks Islands and small areas in the Caicos Islands. The highest values, between 75 mm and 105 mm, were reported over Salt Cay, in the Turks Islands. Values lower than 60 mm were showed over the rest of the territory.



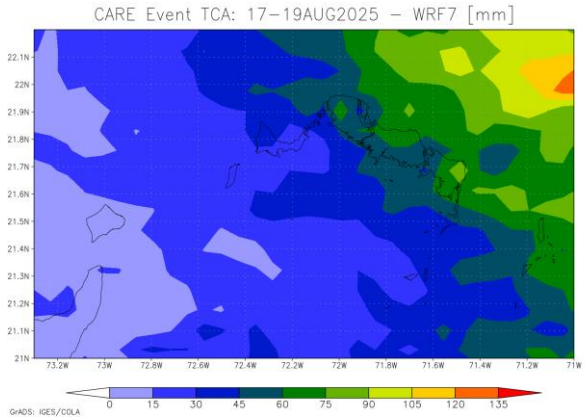
a) CMORPH



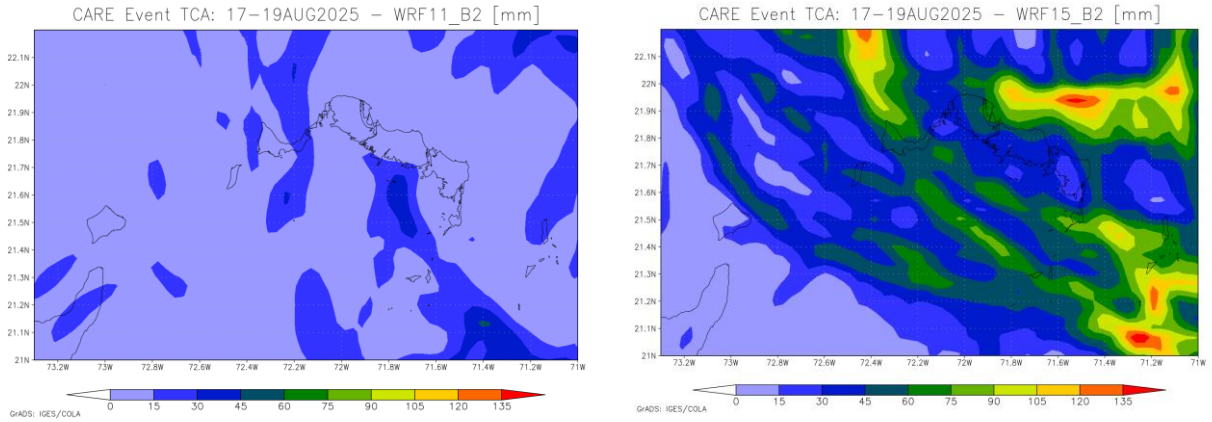
b) IMERG7



c) WRF5



d) WRF7



e) WRF11 f) WRF15

Figure 3 Total accumulated precipitation during the period 17 to 19 August 2025 estimated by CMORPH (a), IMERG7 (b), WRF5 (c), WRF7 (d), WRF11 (e), WRF15 (f). Source: CCRIF SPC

The Rainfall Index Loss (RIL) was above the loss threshold for Turks and Caicos Islands for three of the data sources used by XSR3.1: CMORPH, WRF5 and WRF7. The RIL was the highest for WRF5.

The final RIL (RIL_{FINAL}) was calculated as the average of the three RILs from CMORPH, WRF5 and WRF7. The RIL_{FINAL} was below the attachment point of the country's Excess Rainfall policy, and thus the policy was not triggered. Therefore, no payout is due under this Excess Rainfall policy to the Government of Turks and Caicos Islands.

The Wet Season Trigger (WST) endorsement of the XSR3.1 model did not identify this CARE as a "Wet Season" event[5]. Therefore, no payout is due under the Wet Season Trigger endorsement of Turks and Caicos Islands' Excess Rainfall policy.

The Localized Event Trigger (LET) component of the XSR3.1 model did not identify this CARE as a localized event[6]. Therefore, no payout is due under the Local Event Trigger endorsement of the Turks and Caicos Islands' Excess Rainfall policy.

[5] 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.

[6] 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" - from (i) either of the satellite datasets (CMORPH or IMERG) and (ii) at least three of the six WRF models must be greater than the local precipitation threshold (LPT).

5 TRIGGER POTENTIAL

The Rainfall Index Loss calculated for the Covered Area Rainfall Event (CARE) for Turks and Caicos Islands was below the attachment point of Turks and Caicos Islands' Excess Rainfall policy, and therefore no payout is due. This CARE did not activate the Wet Season Trigger nor the Localized Event Trigger endorsement of the Excess Rainfall policy and therefore no payout under either these endorsements is due.

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.