



CWUIC XSR COMPONENT 06/10/2026 to 08/10/2026

Excess Rainfall

Final Event Briefing

Central Water and Sewerage Authority (CWSA) Saint Vincent and the Grenadines

15 October 2026

1 SUMMARY

This event briefing is designed to review the modelled losses due to excess rainfall calculated by CCRIF's CWUIC model for a rainfall event that occurred from 6 to 8 October 2026 for affected CCRIF member water utilities. The Central Water and Sewerage Authority (CWSA) in Saint Vincent and the Grenadines was the only CCRIF water utility member for which the CCRIF CWUIC loss model for excess rainfall produced losses due to this rainfall event.

On 6 October, a tropical wave propagated across the Windward Islands, triggering showers and thunderstorms over the region for the entire day. In Saint Vincent and the Grenadines, convective activity peaked in the early hours (0600 UTC), when a strong thunderstorm produced heavy rainfall. Moderate to locally heavy showers then persisted for the rest of the day.

The runs of the CCRIF CWUIC model produced losses for CWSA under its CWUIC policy due to this rainfall event. The losses for CWSA are above the Attachment Point of its CWUIC policy and therefore this rainfall event is designated as a Triggering Event¹ for CWSA policy. A payout of US\$116,023. is due under the utility's policy.

2 INTRODUCTION

On 6 October at 0000UTC, a tropical wave extended over the eastern Caribbean Sea, with its axis near longitude 61°West, moving westward at 11 to 17 mph (18 to 28 km/h) (Figure 1). The tropical wave brought unstable atmospheric conditions that supported convection in its vicinity and in its wake. Starting from the late hours of 5 October, scattered moderate showers to isolated strong thunderstorms developed over the Windward Islands and surrounding waters, from latitude 10°North to 18°North between longitude 55°West and 62°West, and slowly advanced westward with the tropical wave.

Saint Vincent and the Grenadines was affected by moderate to locally heavy rainfall associated with a strong thunderstorm from 6 October at 0000UTC until 2100UTC, with peak intensity at 0600UTC, as reported by satellite imagery (Figure 2).

On 7 October, the tropical wave's westward movement shifted the most convective area toward the central-north Caribbean Sea, away from the Windward Islands. Showers of moderate intensity intermittently occurred over Saint Vincent and the Grenadines during this day and the following day, 8 October, before more stable conditions returned.

¹ Any CWUIC event which produces a modelled loss greater than the policy Attachment Point (AP) in one or more policyholder utility

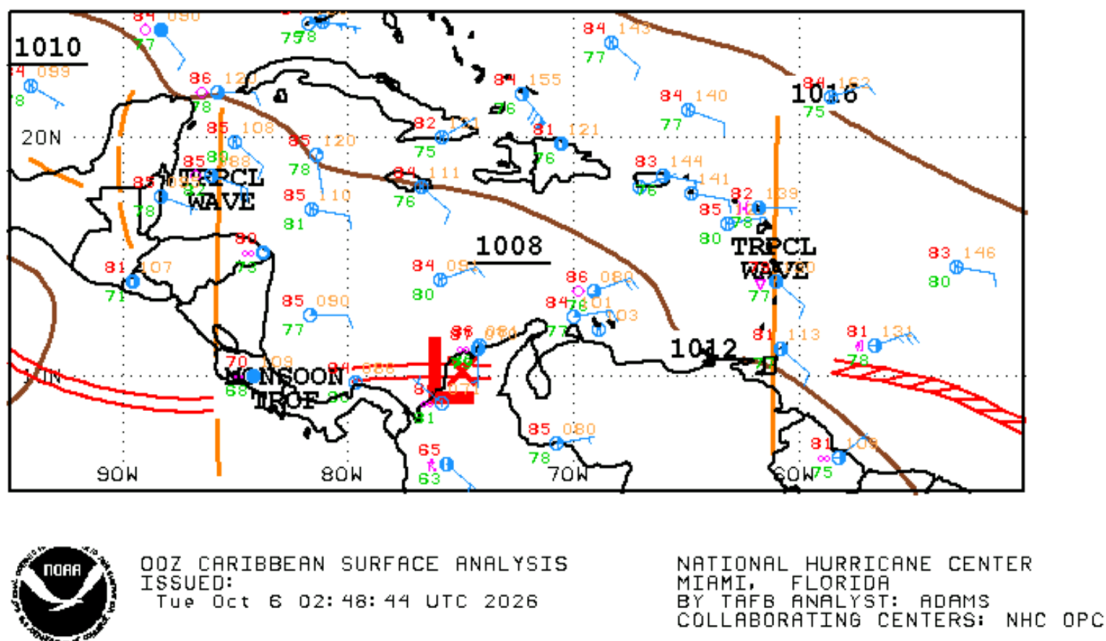


Figure 1 Surface analysis over the Caribbean area on 6 October at 0000UTC.

Source: US National Hurricane Center²

² National Oceanic and Atmospheric Administration - FTP, National Hurricane Center, review date: 6 October 2026, available at: https://www.nhc.noaa.gov/tafb/CAR_00Z.gif

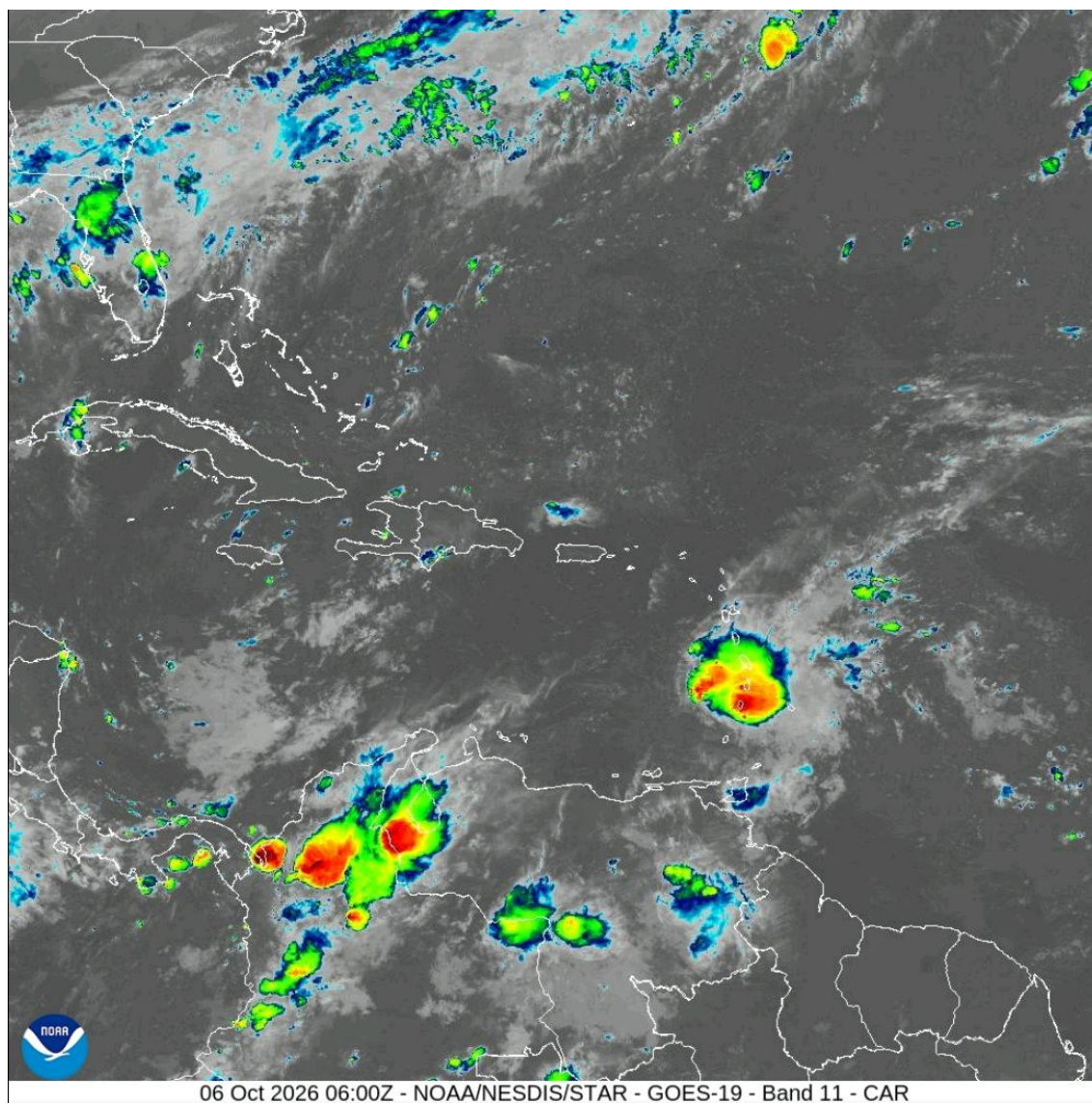


Figure 2 Satellite imagery on 6 October, 2026 at 0600UTC from the thermal infrared channel enhanced with colour.

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 Service³.

³ NESDIS Online Archive, NOAA Satellite and Information Service, available at <https://cdn.star.nesdis.noaa.gov/GOES19/ABI/SECTOR/car/11/>

3 CCRIF SPC MODEL OUTPUTS

The CWUIC model consists of two components: the tropical cyclone (TC) component, accounting for losses produced by wind and storm surge, and the excess rainfall (XSR) component, accounting for losses associated with excess rainfall. Each model component estimates a loss value specifically related to the hazard for which it is designed. When both a tropical cyclone and a Covered Area Rainfall Event (CARE) occur at the same time, the outputs of the two model components are added together. When only one model component, TC or XSR, reports losses associated with a specific event, only the losses produced for that component are used. In the following description, the model output for each component is described separately.

TC Component

This CARE does not involve any tropical cyclone activity. No modelled wind or storm surge losses for CWSA are attributed to a tropical cyclone, and therefore the tropical cyclone component was not activated.

XSR Component

All data sources used by the XSR 3.1 model, CMORPH, IMERG, WRF5, WRF7, WRF11 and WRF15⁴, detected the occurrence of precipitation over Saint Vincent and the Grenadines and the surrounding waters during the period 4 to 8 October 2026. Each data source reported a specific distribution and accumulation of rainfall, as discussed below in Table 1 and shown in Figure 3. A CARE for Saint Vincent and the Grenadines was activated on 6 October and lasted until 8 October. The CARE was activated due to the use of the 12-hour and the 48-hour aggregation intervals for precipitation⁵ and thus the period considered by the XSR 3.1 model for the loss estimate based on the accumulated precipitation in Saint Vincent and the Grenadines was 4 to 8 October 2026.

⁴ CMORPH Model: the satellite-based rainfall precipitation estimates provided by the NOAA Climate Prediction Center (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 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 report

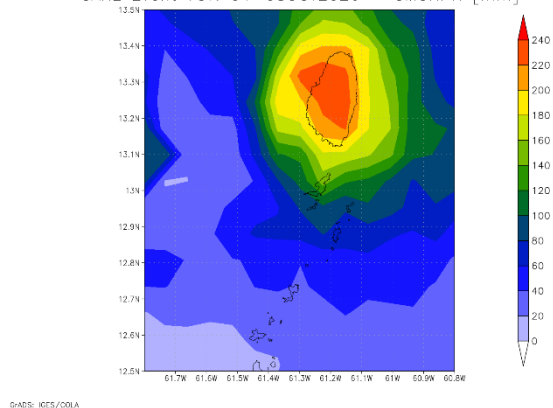
WRF5, WRF7, WRF11 and WRF15 Models: the Weather Research and Forecasting Model weather model-based Configuration #1 and #2 data <https://www.mmm.ucar.edu/weather-research-and-forecasting-model>. These data are initialised by the NCEP FNL dataset. (NCEP FNL Operational Model Global Tropospheric Analyses [<http://rda.ucar.edu/datasets/ds083.2/>]). Further details are provided in the Definitions section of this report.

⁵ 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.

Table 1: Report from XSR 3.1 Data Sources on the Precipitation over Saint Vincent and the Grenadine, 4 to 8 October 2026

CMORPH	CMORPH reported the most intense and concentrated rainfall of the six models, centred over the main island of Saint Vincent. The highest accumulation values, between 220 mm and 240 mm, covered most of the central and northern part of the island, including the La Soufrière area and the interior. The rest of the island, including the southern coast around Kingstown, received between 180 mm and 220 mm of rainfall. Rainfall decreased steadily southward through the Grenadines.
IMERG	IMERG reported a pattern of total accumulated precipitation similar to that of CMORPH, with slightly lower values. The maximum values, between 200 mm and 220 mm, were reported over the central and western part of Saint Vincent along the leeward coast, with a small area above 220 mm. Values between 160 mm and 200 mm were shown over the rest of the island. Through the Grenadines, accumulated values lower than 100 mm were reported.
WRF5	WRF5 reported total accumulated values of precipitation between 40 mm and 60 mm only along the windward east coast of Saint Vincent, around Georgetown. Moderate and fairly uniform rainfall, generally between 20 and 60 mm, was reported over the Grenadines.
WRF7	WRF7 showed a very similar pattern to that of WRF5, with total accumulated values of precipitation between 40 mm and 80 mm along the windward east coast of Saint Vincent, while lower values were reported over the rest of the island. In the Grenadines, accumulations between 40 mm and 60 mm were reported around Bequia, with lower values elsewhere.
WRF11	WRF11 showed total accumulated values of precipitation higher than 100 mm over two areas. The first, with values between 120 mm and 140 mm, over the northern and central part of Saint Vincent, between the La Soufrière and the windward side, with a very localized peak at 160 mm; the second area, with values between 120 and 140 mm, sited just east of Bequia. Lower values were reported over the rest of the country.
WRF15	WRF15 reported total accumulated values of precipitation between 80 mm and 100 mm in a small core in the central interior of Saint Vincent and over Bequia. Lower values were reported over the rest of the country.

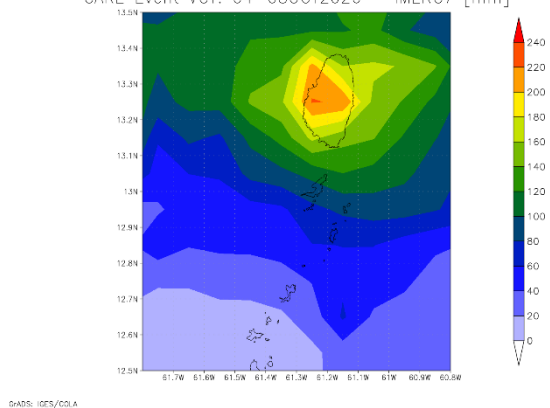
CARE Event VCT: 04-08OCT2026 – CMORPH [mm]



©ADS: IGES/COA

a) CMORPH

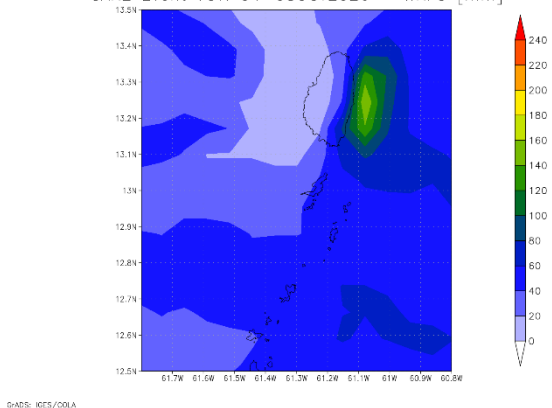
CARE Event VCT: 04-08OCT2026 – IMERG7 [mm]



©ADS: IGES/COA

b) IMERG

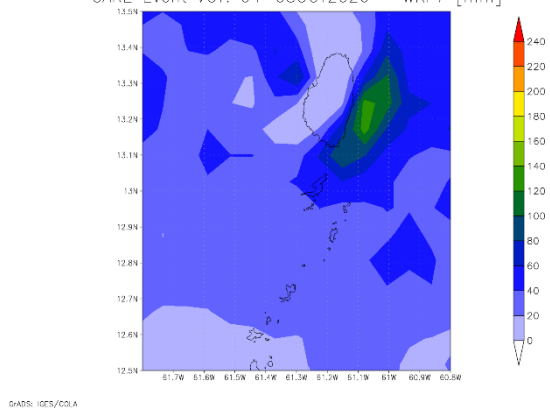
CARE Event VCT: 04-08OCT2026 – WRF5 [mm]



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c) WRF5

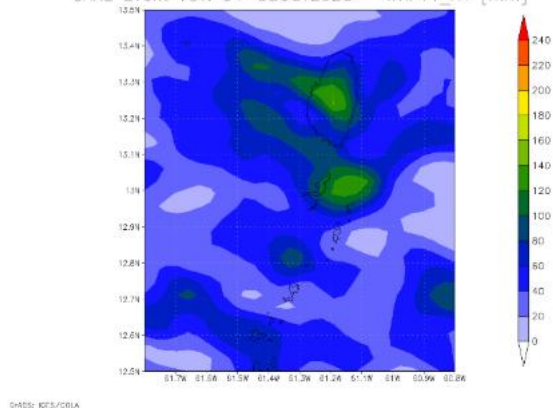
CARE Event VCT: 04-08OCT2026 – WRF7 [mm]



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d) WRF7

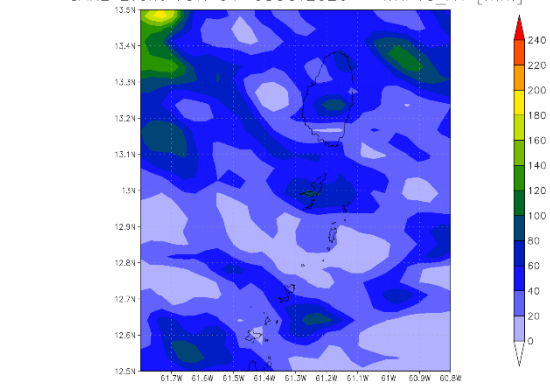
CARE Event VCT: 04-08OCT2026 – WRF11_A4 [mm]



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e) WRF11

CARE Event VCT: 04-08OCT2026 – WRF15_A4 [mm]



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f) WRF15

Figure 3 Total accumulated precipitation during the period 4 to 8 October 2026 estimated by CMORPH (a), IMERG (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 CWUIC 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/CWUICXSR/Events/VCT/CARE_3_2026/daily_prec_short.mp4

https://wemap.ccrif.org/OUTPUT/CCRIF/CWUICXSR/Events/VCT/CARE_3_2026/daily_prec_long.mp4

The Rainfall Index Loss (RIL) was above the loss threshold for Saint Vincent and the Grenadines for three of the data sources used by XSR3.1: CMORPH, IMERG, and WRF11. The RIL was the highest for CMORPH.

The final RIL (RIL_{FINAL}) was calculated as the average of the three RILs from CMORPH, IMERG and WRF11. The RIL_{FINAL} was above the attachment point of the Excess Rainfall component of CWSA's CWUIC policy and therefore the policy was triggered; thus, a payout of US\$116,023 is due to the Central Water and Sewerage Authority under its CWUIC policy.

4 REPORTED IMPACTS

Prolonged heavy rainfall affected water utility operations nationwide, disrupting potable water services and restricting access to critical infrastructure operated by the Central Water and Sewerage Authority.

News reports indicated that high turbidity, debris and flood-related contamination at river intakes required CWSA to suspend or reduce production across several water supply systems while intakes and treatment facilities were cleared and stabilized. Flooding, landslides and slope failures also affected utility corridors and blocked roads, restricting access to intakes, pipelines and distribution assets and delaying inspection and restoration activities.⁶

According to a report from the National Emergency Management Organisation, CWSA carried out urgent repairs, cleared affected intakes and facilities, flushed distribution lines and replaced damaged components. During the restoration of piped services, CWSA and national authorities supplied potable water to affected communities through water trucks and standpipes, with tens of thousands of imperial gallons reportedly distributed to meet essential needs. Approximately 92% of national water service was restored within approximately 48 hours, while targeted repairs, intake cleaning and line flushing continued in the remaining affected systems⁷.

Overall, the event caused significant but short-lived disruption to CWSA's water production and distribution systems. Flood-related contamination, infrastructure access constraints and damage to

⁶ [Severe water disruptions across SVG after tropical wave](#)

⁷ [Situation Report 3 - Tropical Wave 6th October, 2026](#)

water assets required emergency repairs and alternative water distribution, followed by the restoration of most services within two days.

5 CCRIF LOSS MODEL

The final run of the CCRIF CWUIC tropical cyclone and excess rainfall loss model for the Saint Vincent and the Grenadines Central Water and Sewerage Authority (CWSA) , produced losses above the Attachment Point of its CWUIC policy and therefore the policy was triggered. A payout US\$116,023 is due under this policy.

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

DEFINITIONS

<i>Active Exposure Cell Percentage Threshold</i>	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.
<i>Active Exposure Grid Cells</i>	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.
<i>Aggregate Rainfall #1</i>	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.
<i>Aggregate Rainfall #2</i>	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.
<i>Calculation Agent</i>	Entity charged with undertaking the primary calculation of the Rainfall Index Loss.
<i>CMORPH-based Maximum Aggregate Rainfall #1</i>	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.
<i>CMORPH-based Maximum Aggregate Rainfall #2</i>	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 Relief Web (<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 Relief Web 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.

<i>Maximum Aggregate Rainfall #2</i>	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.
<i>Rainfall Event Threshold #1</i>	Aggregate Rainfall #1 level as defined in the Schedule which should be exceeded to trigger an Active Exposure Cell.
<i>Rainfall Event Threshold #2</i>	Aggregate Rainfall #2 level as defined in the Schedule which should be exceeded to trigger an Active Exposure Cell.
<i>Rainfall Aggregation Period #1</i>	The number of hours over which the Aggregate Rainfall #1 is computed for all XSR Exposure Grid Cells during a Covered Area Rainfall Event.
<i>Rainfall Aggregation Period #2</i>	The number of hours over which the Aggregate Rainfall #2 is computed for all XSR Exposure Grid Cells during a Covered Area Rainfall Event.
<i>Rainfall Index Loss</i>	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.
<i>IMERG Model</i>	The satellite-based rainfall estimation model developed by NASA as described in the Rainfall Estimation Models section of this Attachment.
<i>WRF5 Model</i>	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.

<i>WRF7 Model</i>	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.
<i>WRF11 Model</i>	The weather research and forecasting rainfall model by NOAA with Configuration #11 initialized with the data provided by the National Center for Environmental Prediction and based on the standard setup provided by the Caribbean Institute for Meteorology and Hydrology (CIMH) as described in the Rainfall Estimation Models and in the Input Data to the Rainfall Estimation Models sections of this Attachment.
<i>WRF15 Model</i>	The weather research and forecasting rainfall model by NOAA with Configuration #15 initialized with and assimilating the data provided by the National Center for Environmental Prediction and based on the standard setup provided by the Instituto Nacional de Sismología, Vulcanología, Meteorología e Hidrología (INSIVUMEH) of Guatemala, as described in the Rainfall Estimation Models and in the Input Data to the Rainfall Estimation Models sections of this Attachment.
<i>XSR Rainfall Model</i>	The computer model used to calculate the Rainfall Index Loss, as described in the Attachment entitled ‘Calculation of Rainfall Index Loss and Policy Payment’.
<i>XSR Exposure Grid Cells</i>	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.
<i>XSR Grid Cell Exposure Value</i>	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.