CCRIF has created a database of **historical rainfall events** that occurred in the Caribbean and Central America from 1998 to 2022 and the **resulting economic losses**. A number of reports and databases were considered, such as those from NOAA\(^1\), DFO\(^2\), Swiss Re, Munich Re, AON, Wikipedia and different local sources. Figure 1 shows the number of events gathered from each source.

The information collected includes event start and end dates, event types (i.e., tropical cyclone, flood/rain or unknown), maximum Saffir-Simpson scale category (applicable to tropical cyclones only), economic losses, number of deaths, and number of people affected, when available. The distribution of the events among the different event types is presented in Figure 2.

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\(^1\) NOAA: National Oceanic and Atmospheric Administration, U.S. Department of Commerce

\(^2\) DFO: Dartmouth Flood Observatory
The database consists of 316 single reported events for Group 1, 315 for Group 2, and 112 for Group 3, as shown in Table 1 and Figure 3. Events affecting more than one country were counted as a “single” event for each of those countries. Data regarding the impacts of these events on the population and built environment were collected and analyzed for at least 5 events for each country in Group 1, at least 25 events in Group 2, and at least 1 event for each country in Group 3.
Table 1. Number of single events by year and country for Group 1, Group 2 and Group 3. Note: the country codes are listed in the Glossary.
Most harmful events

Hurricane Georges in 1998, Hurricane Mitch also in 1998 and a Flood in 2004 were the most harmful events that have struck the Caribbean and Central America regions, respectively during the past 25 years (Figure 4). Figure 4 summarizes the losses caused by the most severe events affecting the Group 1, Group 2, and Group 3 countries. When multiple values were obtained from reports, the average values were presented in the table. Note that these losses are estimates of rain-induced losses only; wind-induced losses are not included. The fraction of the total losses induced by tropical cyclones on a country was estimated on the basis of the Saffir-Simpson scale category of the storm when it hit that country. The original reported loss values were updated to 2022 dollar values using a macroeconomic approach that accounts for the trend of GDP growth from the time of the event.
Figure 4. Ratio of rain-induced losses to GDP for the 20 most harmful events from 1998 to 2022 for Group 1, Group 2, and Group 3. For each event, country code, name (if cyclone) and year are reported.
The current members of CCRIF are:

**Caribbean** – Anguilla, Antigua & Barbuda, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands, Dominica, Grenada, Haiti, Jamaica, Montserrat, Saint Kitts & Nevis, Saint Lucia, Saint Vincent & the Grenadines, Sint Maarten, The Bahamas, Trinidad & Tobago and Turks & Caicos Islands

**Central America** – Guatemala, Nicaragua and Panama

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