# Historical documentation on the August 1983 flooding in the Basque Country

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This year has seen the 40th anniversary of the worst event in the history of the Consorcio de Compensación de Seguros (CCS) in its coverage of extraordinary risks, namely the August 1983 flooding in the Basque Country. In this article we shall therefore try to gather together and give some structure to the information available in CCS files and documentation from that era in regard to the economic fallout from the event, both to chronicle the episode and leave on record that this data remains accessible.

All the amounts are expressed in euros, either in nominal terms or inflation-adjusted as indicated. All the data, tables and charts or figures used to illustrate them are from the CCS's own research.

## Information contained in technical notes

**The Actuarial Report to approve the extraordinary risk rate which was passed under a Resolution of 28 November 1986 by the Directorate-General for Insurance Affairs** reflects the following claims experience for 1983 as a whole:

## According to actuarial report on 1987 extraordinary risks rate

| 1983 | No. Claims | COMPENSATIONS | | | Average cost updated 2022 in euros |
|---|---|---|---|---|---|
| | | Nominal in euros | Updated 2022 in euros | % | |
| Overflow flooding | 13,555 | 162,038,541 | 612,639,782 | 72% | 45,197 |
| Wave battering | 6 | 31,346 | 118,515 | 0% | 19,753 |
| Hurricane | 237 | 304,368 | 1,150,763 | 0% | 4,856 |
| Rain | 16,959 | 58,917,924 | 222,758,512 | 26% | 13,135 |
| Snow | 5 | 136,531 | 516,200 | 0% | 103,240 |
| Hail | 247 | 453,407 | 1,714,254 | 0% | 6,940 |
| Landslide | 4 | 16,472 | 62,279 | 0% | 15,570 |
| Terrorism | 1,041 | 2,592,656 | 9,802,384 | 1% | 9,416 |
| **Total año 1983** | **32,054** | **37,352,200,455** | **848,762,688** | **100%** | **26,479** |

Table 1.

The figures which appear in this actuarial report (given against a pink background in Table 1) are the number of claims and nominal compensation which we set out in euros and group by cause for the whole of 1983.

A significant item of input from these figures is the distribution of loss numbers categorised by causes which CCS covered up to 31-12-1986 — which then included rain, wind and hail — given that thereafter information of this sort was treated collectively (together with hurricanes) under the heading of an atypical cyclonic storm.

The other figures are calculated based on those previously and are compensation pay-outs expressed in inflation-adjusted euros as of 31-12-2022, the percentage distribution of compensation by cause and the average cost restated for inflation in euros.

It is worth noting that in 1983 the most substantial causes were flooding from overflows and rain, at 72% and 26% respectively of overall compensation.

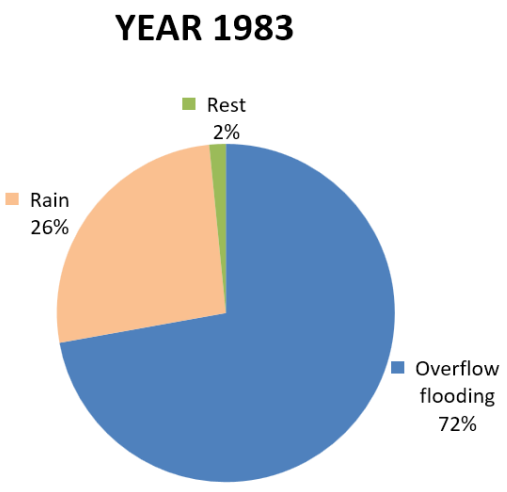


Figure 1.

We might also point to what an outlier the high average cost is for that year, at way above the average for the dataset reviewed (according to the Extraordinary Risk Statistics available on CCS website), as can be seen in Figure 2 below (with amounts adjusted as of 31-12-2022):

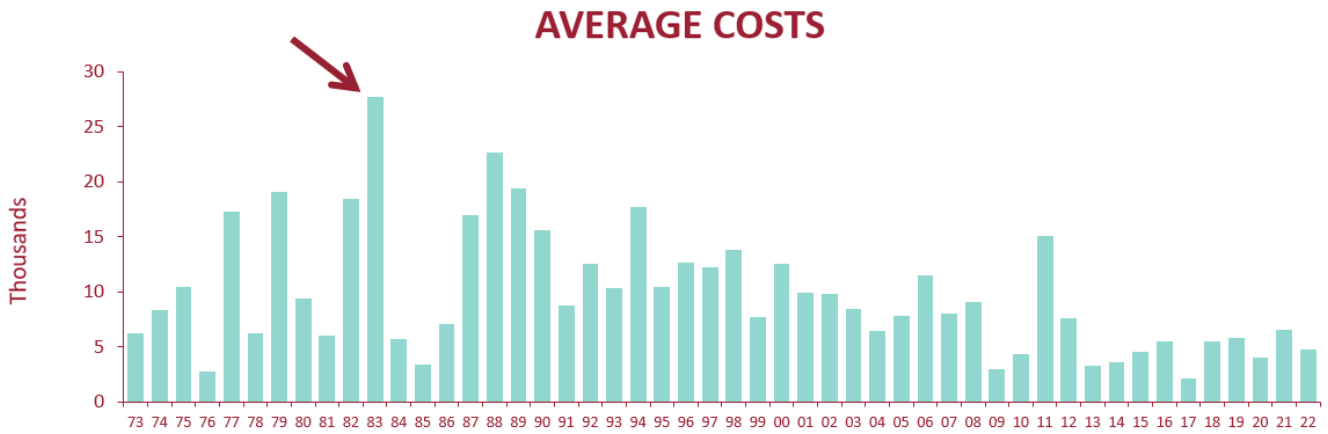


Figure 2.

The cited actuarial report makes no express reference to the 1983 loss event in the Basque Country but instead takes that particular year as a whole, in which there was also another especially major event in the form of the flooding in Catalonia and the Valencian Region in November, the cost of which came to roughly 6.5% of that of the August event, although this does not detract from the fact that it was a remarkable event.

What is nonetheless crystal clear is that the August loss event in the Basque Country is the incident which really left its mark on the claims experience that year, since it accounted for some 88% of the total.

One and a half years later, **the Actuarial Report to approve the extraordinary risk rate which was passed under a Resolution of 20 May 1988 by the Directorate-General for Insurance Affairs** once again reflects the following claims experience for 1983 as a whole:

### According to actuarial report on 1988 extraordinary risks rate

| 1983 | No. Claims | COMPENSATIONS | | | Average cost updated 2022 in euros |
|---|---|---|---|---|---|
| | | Nominal in euros | Updated 2022 in euros | % | |
| Overflow flooding | 15,173 | 181,832,916 | 685,777,527 | 72% | 45,197 |
| Wave battering | 7 | 35,088 | 132,663 | 0% | 19,753 |
| Hurricane | 265 | 340,704 | 1,288,142 | 0% | 4,856 |
| Rain | 18,984 | 65,951,624 | 249,351,717 | 26% | 13,135 |
| Snow | 6 | 152,830 | 577,824 | 0% | 103,240 |
| Hail | 276 | 507,535 | 1,918,904 | 0% | 6,940 |
| Landslide | 4 | 18,439 | 69,714 | 0% | 15,570 |
| Terrorism | 1,165 | 2,902,170 | 10,972,605 | 1% | 9,416 |
| **Total year 1983** | **35,881** | **251,291,307** | **950,089,098** | **100%** | **26,479** |

Table 2.

On this occasion only total nominal compensation pay-outs (against the pink background) are included, which have risen from 224 million euros to 251 million euros, revealing a claims experience 12% above that previously given.

This assumes the following hypotheses, namely that (i) the claims percentages (i.e. compensation) remain at similar levels according to causes, although these are not in fact shown in this actuarial report, and (ii) the average cost per cause is the same, while all the other information is given.

This all leads one to conclude that the events of 1983, coming in the wake of significant claims in 1982 that included very serious flooding in the Valencian Region in October (at a cost of 26.9% of the 1983 loss event in the Basque Country), brought about: (i) a new system of demarcation of risks covered pursuant to Spanish Royal Decree 2022/1986 endorsing the Extraordinary Risk Regulations, as well as (ii) examination of potential re-insurance for this activity; in other words, given such an inauspicious situation, CCS delved deeper in its research into risk prevention and measures aimed at reducing risks.

Figure 3 shows claims (with amounts inflation-adjusted as of 31-12-2022) for the dataset from the last 50 years, where, in relative terms, emphasis is placed on the seriousness of the claims experiences in 1982, and most especially 1983, compared to more recent loss events such as the windstorm Klaus in 2009, the Lorca earthquake in 2011 and the flooding in the south-east of the peninsula in 2019, all this in spite of the increase in insurance activity in Spain over the period for the data series under review.

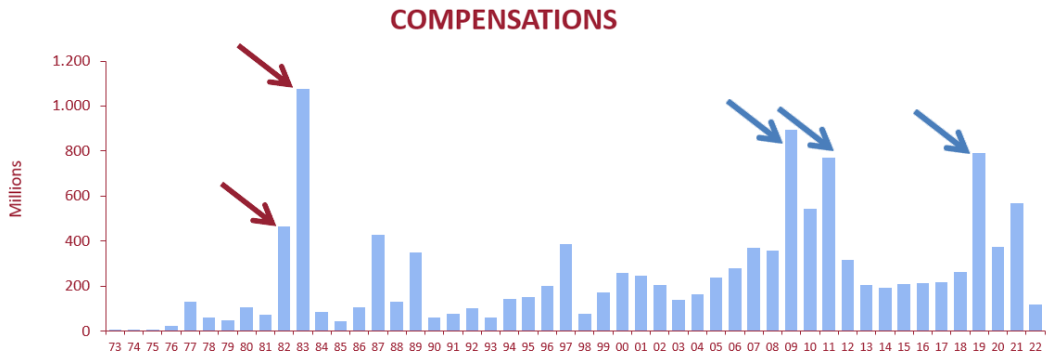


Figure 3.

Figure 4 shows how sums insured have ballooned from 1.6 trillion euros in 1990 (no data prior to this year is available) to 6.5 trillion euros in 2022 in inflation-adjusted terms:

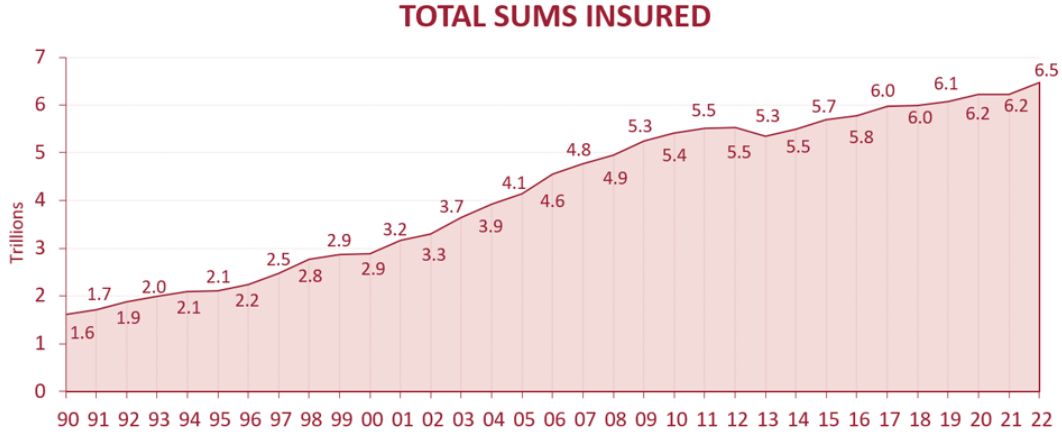


Figure 4.

## Information in the re-insurance studies

Against this backdrop, in the years leading up to 1990 a study was conducted into potential for re-insuring extraordinary risks, whereby CCS would be the body ceding risks and firms in both domestic and international markets would act as re-insurers. In the end re-insurance of this kind was not used for reasons given later on.

**The CCS report, where the body defines its re-insurance aims**, states as follows:

> The alternative explored by CCS at the time as a possibility for being passed on for re-insurance was a catastrophe type event, i.e. non-proportional excess of loss reinsurance, without including rain damage or loss which CCS had ceased to cover in 1987.
>
> Such an event might be defined as one where the claims incurred were between 210 and 360 million euros in 1990, i.e. re-insurance coverage of 150 million euros in excess of 210 million euros.
>
> In the past this had occurred on just a single occasion, that of the August 1983 event in the Basque Country. For this event a return period based on a maximum prudential basis of 50 years was set, although in subsequent studies this interval was substantially increased.
>
> Other alternatives were assessed such as defining a catastrophic event as one where the claims incurred were between 120 and 210 million euros in 1990, i.e. re-insurance coverage of 90 million euros in excess of 120 million euros.

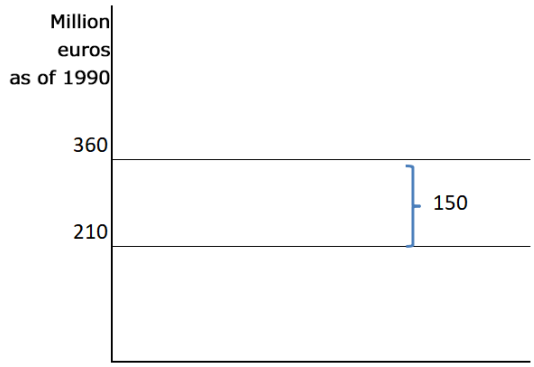


Figure 5.

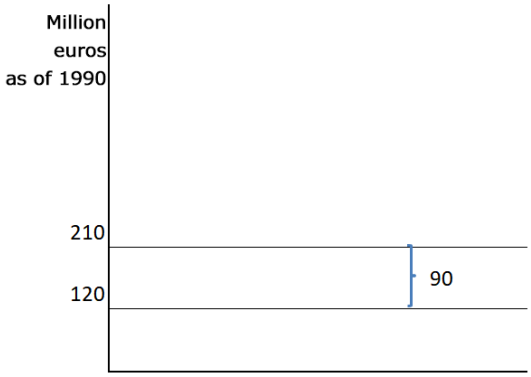


Figure 6.

> And likewise, the possibility was looked at of passing on accumulations of several major events all falling in the same year without any need for any one of them to reach the established thresholds, although they would have to overall, i.e. stop loss reinsurance.

**The re-insurance broker with which CCS was working on this issued a report dated 23-01-1990**, in which (with the consensus of the international re-insurance market as regards expectations with respect to the market's worldwide capacity) it was stated that the aim of re-insurance would essentially be to cover the events of 1983 in Bilbao entailing a cost of 203 million euros at 1983 prices (just for flooding), because as from January 1987 rain damage was no longer covered.

For the first time we find (in the reports characteristic of the technical area) a valuation for the August 1983 Basque Country event, albeit merely for flooding; even though as the years went by, this amount became more specific

to the point where the event was closed off at the amount which is given in the section "Information contained in Extraordinary Risk Statistics", which now embraces flooding and rain.

To gain an understanding of the re-insurance options taken into account in 1990, it must be recalled that these were years when inflation was running high, as is illustrated in Table 3:

In million euros

| YEAR | CPI (%) | Assessment of the August 1983 event in the Basque Country -only flooding- |
|---|---|---|
| 1983 | 12.2 | 203 |
| 1984 | 9.0 | 221 |
| 1985 | 8.2 | 239 |
| 1986 | 8.3 | 259 |
| 1987 | 4.6 | 271 |
| 1988 | 5.8 | 287 |
| 1989 | 6.9 | 307 |
| 1990 | 6.5 | 327 |

Table 3.

Another consideration to bear in mind is the geographical extent to factor in, as the event also affected Navarre and Cantabria (mostly the latter).

The broker suggested excess of loss re-insurance coverage above a deductible of 120 million euros per event and said that a deductible of less than 120 million euros in 1990 would entail a premium which CCS would be unable to assume.

Coverage above 120 million euros was offered in four separate ranges, each with its premium rate, up to 240 million euros in excess of the deductible, which would include the events in Bilbao in 1983 with an additional margin.

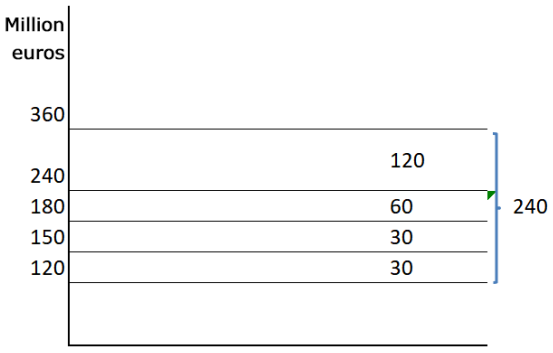


Figure 7.

As a major component, in its report the broker includes a necessary time limit on an event and proposes a ceiling of 168 hours (7 days) and therefore the possibility of restoring coverage should the time limit in any single event be exceeded.

Other brokers and re-insurers provided proposals on similar terms, which were updated in the years that followed, yet re-insurance was not taken out at any time for the reason which is laid out further below.

The re-insurance assessment must be understood in the context of the situation referred to at the time as a "Claims deviation provision" for risks to items, personal risk and civil liability on the part of a driver which, as of 31-12-1990 had a balance of 82 million euros.

## Information in studies of coverage of extraordinary risks

The first such study dates from 1989; there are later studies but they do not provide any further information on the event which concerns us here.

Under the heading of "Study of extraordinary risk coverage – 1989" information is given which is highly relevant for these purposes, such as:

- The fact that the most significant risks which the CCS handled in 1957-1987 are identified, where, under the section titled "North – Flooding and Rain – 1983", compensation of some 268 million euros at 1983 levels is allocated to this event:

| Place | Cause | Year | Compensation paid-out (In million euros) |
|---|---|---|---|
| Valencian Region | Flood | 1957 | 2 |
| Seville | Flood | 1961 | 1 |
| Barcelona | Rain | 1962 | 4 |
| Girona | Flood | 1970 | 1 |
| Barcelona | Flood | 1971 | 11 |
| Barcelona | Rain | 1971 | 2 |
| Barcelona | Hail | 1974 | 2 |
| Biscay | Flood | 1975 | 4 |
| Biscay | Rain/Flood | 1975 | 4 |
| Galicia / Asturias | Wind/Rain | 1978 | 2 |
| Valencian Region | Snow | 1980 | 7 |
| Barcelona | Hail/Rain | 1980 | 2 |
| Araba-Alava/Gipuzkoa | Rain | 1980 | 1 |
| Biscay | Rain | 1980 | 1 |
| Araba-Alava/Gipuzkoa | Flood/Rain | 1981 | 1 |
| Madrid | Terrorism | 1982 | 4 |
| Eastern Spain/Aragon/Catalonia | Flood/Rain | 1982 | 84 |
| **North** | **Flood/Rain** | **1983** | **268** |
| Valencian Region/Catalonia and Andalusia | Flood/Rain | 1983 | 12 |
| Valladolid | Hail | 1984 | 2 |
| Valencian Region/Catalonia/Galicia and Murcia | Flood | 1987 | 105 |

Table 4.

This table allows us an indication of the magnitude of the event in relation to others which occurred in the preceding and immediately subsequent years.

- The two models of claims incurred are analysed: (i) that for Eastern Spain and Catalonia zones, where extraordinary claims incurred are characterised by being more frequent, i.e. they have shorter recurrence or return periods and economic consequences which the report described as controlled and foreseeable; whereas (ii) in contrast to this there is a depiction of the model for the Northern zone (Biscay and Gipuzkoa), which is rated as catastrophic.

- It looks at the characteristics of the event studied relative to previous weather-related observations, such as, for example:

  - The fact that the rains in August 1983 were unprecedented in the zone, since the highest values of monthly falls recorded were below the downpours from 24 to 26 August 1983, which were the heaviest over the 120 years since records had been kept:

| Observatory | Maximum monthly rainfall recorded mm | | | | | |
|---|---|---|---|---|---|---|
| Bilbao | October 1885<br>349 | December 1906<br>355 | March 1869<br>360 | February 1931<br>417 | December 1874<br>495 | **24-26 August 1983<br>480** |

Table 5.

  - The fact that, according to the figures recorded over 20 years, the maximum daily rainfall was also below the value for the downpour of 26 August 1983:

| Observatory | Maximum daily rainfall recorded mm/day | |
|---|---|---|
| Bilbao | 145 | **26 August 83<br>398** |

Table 6.

- Along with the meteorological aspects, the study explores hydrological and geological elements, as well as those pertaining to human-made actions.

- It says "in expert opinion the return period is likely to be at least a thousand years" and points out that the economic consequences, were the event to recur, would be impossible to quantify *a priori* because they depend on the condition and level of insurance cover of the property affected, the improvement work at the trouble spots at river basins and dispensing with rain coverage (among other aspects) and, what we can now say is that this all also depends on the addition of business interruption within the CCS's extraordinary risk coverage system.

- It was concluded that, even with substantially shorter return periods, the CCS might be in a position to take on an equivalent event within a short time-frame provided that the projection assumptions established in any of the 16 scenarios of 30-year simulations were satisfied.

The projection assumptions laid down related to:

- A particular pattern of claims experience featuring 4 separate models, all of which were conservative.
- Growth of sums insured and, by extension, of surcharges too (given that no change of premium rates was assessed) according to two alternatives: constant cumulative annual growth of 3% or 4%.
- A net return on the reserve of 3% per annum.
- Baseline reserve: two options (i) -150 million euros according to data as of 31-12-1988 or (ii) zero euros.

In the worst-case scenario of the 16 involved, the CCS found that it was in a position to assume a catastrophic event such as that in the Basque Country in 1983 in a period of 20 years; whereas in the best-case scenario the comparable time-frame was cut back to 10 years. We are given to understand that this was one of the key reasons for opting not to take out re-insurance.

## Information in the extraordinary risk statistics

**The definitive figures on the Basque Country event of August 1983, having processed and made the pay-outs for all the claims files, are given in the tables in this section.**

It should be borne in mind that the compensation pay-outs are shown firstly at their nominal amount in euros in the year of the loss event and then in inflation-adjusted euros as of 31-12-2022 with the relevant CPI levels for the dataset. Account is not taken of other variables such as: (i) increases in insurance levels, (ii) the introduction of business interruption coverage, (iii) improvement to mechanisms for reducing loss or damage or (iv) the discarding of rain coverage.

Reference here is made to property damage and no information is available in regard to any bodily injury coverage.

### Claims by regional autonomy:

| Region | Number of claims | Compensations nominal euros | Compensations euros 2022 | % | Average cost euros 2022 |
|---|---|---|---|---|---|
| BASQUE COUNTRY | 24,802 | 248,266,591 | 938,653,172 | 99% | 37,846 |
| CANTABRIA | 761 | 2,192,060 | 8,287,797 | 1% | 10,891 |
| NAVARRE | 101 | 254,983 | 964,053 | 0% | 9,545 |
| **TOTAL** | **25,664** | **250,713,635** | **947,905,022** | **100%** | **36,935** |

Table 7.

As mentioned earlier, the event mainly affected the Basque Country, specifically Biscay, though also Cantabria and, to a lesser extent, Navarre.

### Claims breakdown by cause:

| Cause | Number of claims | Compensarions nominal euros | Compensarions euros 2022 | % | Average cost euros 2022 |
|---|---|---|---|---|---|
| FLOOD + WAVE BATTERING | 11,403 | 183,870,460 | 695,182,505 | 73% | 60,963 |
| RAIN | 14,261 | 66,843,175 | 252,722,517 | 27% | 17,722 |
| **TOTAL** | **25,664** | **250,713,635** | **947,905,022** | **100%** | **36,935** |

Table 8.

For these purposes the proportions of claims files and pay-outs per cause from Table 1 (which relates to the whole of 1983) have been retained, since no strict itemisation for that specific event is available.

### Claims breakdown by range:

| RANGE BY CLAIM (euros 2022) | NUMBER OF CLAIMS | COMPENSATIONS NOMINAL euros | COMPENSATIONS euros 2022 | % | AVERAGE COST euros 2022 |
|---|---|---|---|---|---|
| From 0 to 2,300 euros | 14,631 | 2,229,423 | 8,429,068 | 1% | 576 |
| From 2,301 to 5,700 euros | 3,564 | 3,568,381 | 13,491,434 | 1% | 3,785 |
| From 5,701 to 11,400 euros | 14,631 | 2,229,423 | 8,429,068 | 2% | 576 |
| From 11,401 to 22,700 euros | 3,564 | 3,568,381 | 13,491,434 | 3% | 3,785 |
| From 22,701 to 56,800 euros | 14,631 | 2,229,423 | 8,429,068 | 6% | 576 |
| From 56,801 to 113,600 euros | 3,564 | 3,568,381 | 13,491,434 | 6% | 3,785 |
| From 113,601 to 227,200 euros | 14,631 | 2,229,423 | 8,429,068 | 8% | 576 |
| From 227,201 to 568,100 euros | 3,564 | 3,568,381 | 13,491,434 | 12% | 3,785 |
| From 568,100 to 1,136,200 euros | 114 | 24,351,128 | 92,067,415 | 10% | 807,609 |
| From 1,136,201 to 2,272,300 euros | 71 | 29,255,479 | 110,609,923 | 12% | 1,557,886 |
| From 2,272,301 to 5,680,800 euros | 39 | 40,156,185 | 151,823,609 | 16% | 3,892,913 |
| From 5,680,801 to 11,361,600 euros | 12 | 26,917,162 | 101,769,147 | 11% | 8,480,762 |
| From 11,361,600 to 22,737,200 euros | 5 | 20,541,151 | 77,662,552 | 8% | 15,532,510 |
| **More than 22,737,200 euros** | 1 | 10,820,523 | 40,910,530 | 4% | 40,910,530 |
| **TOTAL** | **25,664** | **250,713,635** | **947,905,022** | **100%** | **36,935** |

Table 9.


## Summary:

Notable aspects of the event under review here:

- It was caused by flooding, wave battering and direct rain damage.
- I took place from 24 to 26 August 1983.
- It mostly impacted the Basque Country, though also Cantabria and Navarre.
- It was the largest event covered by the CCS in its history.
- It has such a long return period that it is hard to quantify.
- It involved high average costs.
- It prompted legislative reform with respect to the risks covered.